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Certification Guidelines

Conditions and Criteria

naturemade star

naturemade basic

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Contents

Conditions of certification

	Introductory conditions
Scope	The Certification Guidelines of the Association for Environmentally Sound Energy (VUE) apply to the following: a) plants and power stations which generate energy from renewable energy sources, designate and certify their energy under the *naturemade star* or *naturemade basic* quality label and market it as such; b) energy distributors and suppliers which designate or certify electricity products under the *naturemade star* or *naturemade basic* quality label and market them accordingly to their end-customers. The Certification Guidelines for biomethane refer only to *naturemade star*
Range of application for biomethane	The certification for the generation of biomethane applies for: – the gas generation plant – the treatment of biomethane (if necessary) – the injection of biomethane into the natural gas distribution network or a local biomethane network or for direct use at a pumping station
Mandatory licensing agreement for energy producers	Energy producers are only entitled to use the quality label *naturemade star or naturemade basic* when they have signed a licensing agreement. A licensing agreement is valid five years.
Mandatory licensing agreement for energy distributors and suppliers	Energy distributors and/or suppliers are only entitled to use the quality label *naturemade star* or *naturemade basic* when they have signed a licensing agreement. A licensing agreement is valid for five years. Initial licensing agreements are valid up to the end of year five. Licensing agreements on recertification are dated 1 January of year one and likewise expire at the end of year five.
Issue and amendment	The VUE Board is responsible for issue and amendment of these Guidelines. Amendments may be proposed by specialist working groups, association members or the VUE office itself.
VUE membership	Since 1 January 2004, membership of the Association for Environmentally Compatible Energy (VUE) is a prerequisite for certification.

Package certifications	To minimize costs, several plants can be certified in a package (e.g. various photovoltaic plants of a local supplier). This means different individual plants can be certified in one audit. There is only one licensee and only one licence number. The licensee can be a common owner or a third party, e.g. an association, energy customer, supplier etc. A package certification is possible under the following conditions: – The plants are all from the same energy system – There are contracts between the operator of the plants and the licensee – There is a common energy management, i.e. important data are consolidated by the licensee. Agricultural biogas plants, sewage treatment plants and hydropower plants *naturemade star* must not be certified in a package. For small hydropower plants (< 1 MW), as far as they are situated in the same water body, a package certification is possible. In addition, for drinking water power plants a package certification is approved. However, this does not affect the requirement to comply with VUE's set of criteria, as a prerequisite for certification. A new plant can be added to an existing package, no later than the next monitoring audit, via declaration amendment. The quantity of energy generated can be counted as *naturemade* production from commissioning of the plant or from any other time agreed between the licensee and the producer, but no earlier than the beginning of the calendar year (period of measurement of generation plant audit).
Criteria set-off	One condition on which VUE insists for successful certification with *naturemade star* is fulfilment of *all* global, regional and local certification criteria prescribed both for new, renewable energy sources and for hydro-electric power. It is not possible to set off individual global criteria against individual local criteria, or vice versa. In individual cases, the VUE Board may weigh individual global, regional or local criteria against each other (e.g. in cases of new energy technology).
Transition period	If VUE changes criteria of the Certification Guidelines, the following rules apply to licensees in cases of recertification: – the Certification Guidelines current at the time of the recertification audit apply; – if criteria are to be significantly changed, at the end of the year the VUE Office informs the Lead Auditors (LAs) of the changes planned to take effect on 1 January of the following year; – During the next annual monitoring audits, LAs alert licensees under current licensing agreements to the changes and possible measures becoming necessary for recertification. This is mentioned on the monitoring audit form. If the time to recertification is considered insufficient to guarantee fulfilment of the changed criteria on recertification VUE may, on request, grant an extension of up to three years in the recertification deadline, so that the requirements can be met. However, no more than four years may elapse between the change of criterion and its fulfilment.
Combined licence	Certification of a production plant jointly with a related product counts as a combined licence. A combined licence can only be issued for products from one energy utility, and only where the licensee's total energy turnover is less than 5 GWh/a. A combined licence for biomethane can only be issued for pumping stations, and only if the turnover is less than 5 GWh. For a combined licence, the certification fee and the annual licence fee for the product and the plant are charged only for one of them and not double.

Multiple licence	If a plant generates different energy outputs (electricity, heating and cooling energy, biomethane) only one licence (known as a multiple licence) is necessary. Depending on the generated products, the criteria relevant to the production of electricity, heating/cooling energy or biomethane need to be fulfilled. Multiple licences can only be obtained for generation, not for supply. Multiple licences must not be issued for package certifications or combined licences.
Collective licence	Biomass plants (agricultural biogas plants, green feedstock fermentation units and biomethane production) can be collectively licensed. In principle this is treated as a package certification. Collective licensing does not however waive the obligation to conduct certification and monitoring audits of each individual plant. A joint audit report can be written for several plants per system under a collective licence.
Issue of sublicences	If sublicences are issued, the licensee must guarantee the fulfilment of the certification criteria. However, the VUE Board prefers the sublicensee (producer or supplier) to meet the criteria as well. If the issues of sublicences result in sublicensees intentionally circumventing the criteria (namely, the introduction of environmental management systems) the Board may intervene in individual cases to prevent the issue of sublicences. Sublicensee agreements should be submitted to VUE for inspection.
Net power production	The quantity of certified energy from a power plant refers to annual net quantity (production minus in-house consumption and losses). To prove their net energy quantities, plants must have one mandatory net quantity meter per energy output source (electricity, heat and biomethane). The following specific requirements apply to heat certifications: – the quantity of heat counted is that at the heat meter of the recipient; – especially for district heat networks: net losses must be deducted; – if the energy input comes from the plant's own production or extra renewable power, it does not need to be deducted from the gross quantity. The following specific requirements apply to biomethane certifications: – the entire energy input (electricity, heat, biomethane and natural gas) is deducted from the gross biomethane production; – *naturemade star*-certified biomethane input does not need to be deducted; – proof requires a biomethane input meter plus one energy input meter per energy input source (electricity, heat, biomethane and natural gas); – all energy inputs (heat, electricity, biomethane and natural gas) are treated on a 1:1 basis for deduction (in kWh) and are not weighted. Net power production also determines the income of the fund for ecological improvement measures at production level for *naturemade star* hydropower plants.
No environmental impact without reinstatement	Plant expansions and new plants may be certified with *naturemade star* if they cause no impact on natural or semi-natural habitats, living communities and landscapes. Exceptions to this rule are only allowed in case of complete substitution.

	Auditing conditions
Auditing institution	VUE acts as the sole certification body. The necessary audit can be carried out by any independent auditing institution accredited by VUE.
Choice of auditor	The energy producer or supplier has a free choice of an accredited auditor. VUE provides a list of its accredited auditors. The certification and the monitoring audit must be conducted by an accredited auditing institution.
Scope of certification audit	The certification audit must attend to the certification criteria compiled by VUE. The audit includes checking that all certification criteria are met. The certification audit concludes with a certification audit report explaining how the certification criteria are met.
Scope of monitoring audit	Monitoring audits must attend to the certification criteria compiled by VUE. During the monitoring audit, the gas producer or supplier must provide the following specific verifications, compiled in the monitoring audit report: – turnover of *naturemade* certified energy production must not exceed the *naturemade* certified quantity of energy generated or, for electricity suppliers: – turnover of *naturemade* certified energy products must not exceed the quantity of *naturemade*-certified energy provided by themselves or bought, and – the monitoring audit must check implementation of the electricity supplier's specific measures for marketing its *naturemade*-certified energy products, as stated in its marketing plan (especially the mandatory quota).
Maturity of monitoring audit	The monitoring audit is due annually. In the first year of validity of the *naturemade* quality label, the maturity of the monitoring audit may be extended to a maximum of 15 months. It may also be reduced to less than 12 months. This flexible timing makes it possible to adjust the interval as desired (e.g. to carry out the monitoring audit at the end of the hydrological year).
Lead auditor / specialist auditor	The lead auditor is responsible for the audit and checking of all certification criteria. The lead auditor must involve a specialist auditor to check regional and local criteria and special requirements for hydro-electric power generation. Specialist auditors are employees of experienced specialist companies which have to be VUE-accredited.

	Conditions concerning overall impact
Overall impact assessment	To assess the overall impact of individual types of power generation, VUE follows a scientifically-backed procedure to draw up life cycle assessment (LCA). Therefore the system EcoIndicator 99[1] is used, an evaluation method of modelling the various types of energy generating plants using type-specific basic data.
LCA threshold values	VUE has set threshold values for existing plants. Electricity: the environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. Heat: the environmental impact caused by audited plants must not exceed half that of a condensing natural gas boiler (> 100 kW). Biomethane: the environmental impact caused by audited plants (generation and injection into a gas supply network or direct to a filling station) must not exceed half of that of natural gas (as fuel for transport or as fuel for heating), incl. generation, transport and injection into a gas supply network). VUE decides individually on plants whose index values in the parameter model are close to the limit (+/-).
Parameter model	An assessment of the ecological impact of individual types of power plant is based on a few, easily obtainable plant parameters. These must be recorded for the plant to be audited. In a 'parameter model' these parameters are used to derive an index level from this data. If the value falls below VUE's defined threshold value, the requirements of the *Overall Criteria* of the audit are deemed fulfilled.
	Specific conditions for the certification of thermal energy
Scope: thermal energy generation plants	Heat from the following thermal energy generating plants can be certified: a) plant collective: a plant collective consists of one or several generating plants supplying more than one end-consumer. The consumers are connected to each other via a supply network. b) single plant: a single plant generates heat locally, directly at the point of physical consumption. The consumption of the ecological added value can take place elsewhere ("virtual net", e.g. contracting).

1 *cf. Goedkoop M., R. Spriensma, 2000. The EcoIndicator 99; A damage oriented method for Live Cycle Impact Assessment, Methodology Report, 2nd revised Edition 17.4.2000, Pré Consultants B.V., Amersfoort.*

Certification of energy generation

To the *naturemade basic* quality standard

	***naturemade basic* certification criteria**
ZK-E1: Energy sources	The energy for certification derives exclusively from plants which use renewable energy sources. For pumped-storage power plants only the amount of energy generated from natural inflow can be certified. For Swiss plants this corresponds to the amount of current allowed for in the guarantee of origin (HKN). For plants abroad the Swiss HKN regulation will be applied likewise. Imported waste vegetable oil has to fulfil the ecological requirements for tax exemption corresponding to the Swiss mineral oil tax regulation.
ZK-E2: No use of genetically modified organisms	It is prohibited to use genetically modified organisms (e.g. plants, micro-organisms) for energy generation.
ZK-E3: Safeguarding soil fertility and productivity	The long-term fertility and productivity of the soil used to grow biomass for fuels must be ensured.
ZK-E4: Declaration of origin	The generated electricity is traceable back to clearly described and identifiable sources (plants or third-party suppliers). The proportion of these sources is clearly stated in the form "declaration for energy generation plants".
ZK-E5: Corporate policy	Sustainability and energy efficiency must be essential parts of the licensees' corporate policy, covering the company as a whole. To satisfy this criterion, VUE can call for the implementation of an environmental management system (independently of the requirements of criterion ZK-E6).
ZK-E6: Environmental management system	Operating companies (licensees) with energy generation facilities employing more than 30 FTE (full-time equivalents) have to establish an environmental management system (ISO 14 000 or EMAS) or equivalent quality management system within five years of the first certification of their production.
ZK-E7: Legal compliance	All technical, legal and other plant operating conditions necessary to generate electricity must be met.
ZK-E8: Energy management	The producer uses an appropriate energy management system to assure its procedures and guarantee suitable measurement and monitoring activities.
ZK-E9: Certification documents	For a certification by VUE, the energy producer must submit to VUE the following documents: – certification application: this contains the main information about the enterprise and the future licensee – declaration for energy generation plants: this contains all important information about the energy generation plants – certification audit report: this confirms compliance with all relevant *naturemade* certification criteria.
ZK-E10: Supplies to end-customers	If the producer also acts as the end-distributor and supplies customers directly a supplier certification must be obtained in order to use the *naturemade* quality label for energy supply.

Electricity and heat from waste incineration plants

	General criteria
AK-KVA1: Energy sources in waste incineration plants	Waste incineration plants which generate energy from waste are admitted for a certification with *naturemade basic*. Only the part of energy which comes from biogenic waste or other biogenic materials can be certified with *naturemade*.
AK -KVA2: Determination of the renewable part of waste	The biogenic proportion of the waste is evaluated by the Federal Government (Swiss energy regulation, Annex 1.5, connection conditions for biomass energy plants) and equates to 50% of the energy content. The biogenic proportion of the waste forms the basis for the quantity of energy which is certified. A higher proportion of biogenic waste can be accepted if it can be shown that additional non-fermentable or compostable biogenic waste is being incinerated.
AK-KVA3: Plant efficiency	Energy from waste incineration plants can be certified if the plant achieves at least the overall performance ratio defined in the Swiss energy regulation for the cost-covering feed-in tariff. If this parameter is adapted in Swiss energy legislation in future, the new performance ratio will also be applicable to the *naturemade* certification.
AK-KVA4: Slag	The price for the disposal of waste in the waste incineration plant is cost-covering and source-related. This prevents the amount of slag being increased for commercial reasons.
AK-KVA5: Separation quota	The plant operator provides evidence of compliance with the regional waste control regulations. The plant operator can produce evidence of endeavouring to inform the public about sorting waste and recycling.

Certification of energy generation

To the *naturemade star* quality standard

Electricity generation from water power plants

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. Hydroelectric plants achieve this threshold value categorically.
	Regional and local criteria
LK-WK1: Scientifically backed criteria	The regional and local criteria for hydroelectric power plants have a scientific basis. They have been developed in co-operation with the Swiss Federal Institute of Aquatic Science and Technology (EAWAG). The criteria are differentiated for various types of power plants and bodies of water. However, they provide a common standard for the ecological integrity of existing plants. The criteria are published in the documentation "Ökostrom volume 6".[1] Compliance with regional and local criteria guarantees a minimal ecological function for the running waters used and the landscape directly affected by the operation of the power plant. Furthermore, compliance with the criteria aims at attaining the same conditions of water and landscape as are demanded for newly licensed plants. Fulfilment of local and regional criteria is not tied to new licensing, and cannot be a substitute for it. Compliance with local and regional criteria must be checked as part of an expert audit conducted by experienced and accredited specialists.

1 *Ch. Bratrich and B. Truffer (2001): Ökostrom-Zertifizierung für Wasserkraftanlagen, Konzepte, Verfahren, Kriterien, ISBN 3-905484-05-6.*

	Conditions for hydroelectric generation
B-WK1: Power plant extensions and new plants	**New plants** New power plants and power plant extensions can be awarded the *naturemade star* certification if the impact of construction works and operation does not impair additional natural or near-natural habitats, populations or landscapes (prohibition of deterioration) or brings about an improvement. The conceding authority imposes or negotiates any compensatory measures, which VUE can, as a matter of principle, take into account when considering whether the prohibition of deterioration rule is complied with; such measures can also ensure that this rule is fully complied with. The following are classified as **new plants**: – any power plant built after 1.1.2001 that uses previously unutilized bodies of water or gradients; – any renewal/re-commissioning of decommissioned power plants after 1.1.2001. **Extensions of existing power plants** Extensions of existing hydroelectric power plants are classified as new plants if: – existing power plants utilize additional volumes of water (extension of utilizable discharge volumes, new reservoirs) after 1.1.2001; – existing power plants utilize additional gradients after 1.1.2001; – existing power plants extend their water reservoirs after 1.1.2001 (e.g. by increasing dam heights). **Renewals of existing power plants** The more stringent requirements for new plants do not apply where existing water utilization is renewed after 1.1.2001 at the previous or a smaller scale. **Two-phase process** New hydroelectric power plants are awarded the *naturemade star* certification in a two-step process. Applicants first submit an application for preliminary vetting (step 1), which must satisfy the certifying agency of the following before the actual certification process (step 2) can be initiated: a. the listed criteria either do not apply to the project, or b. the project does not impair the listed criteria. An application for preliminary vetting can also be submitted if the concession process for the power plant has been completed.

	Step 1: *Preliminary vetting documentation:* – key data of the power plant (location, plant description, year of construction, output, production, concession) – Evidence of compliance with the prohibition of deterioration rule can be provided using the "Preliminary vetting criteria for *naturemade star* certification of new hydroelectric power plants": - project effects on morphologically and hydrologically intact bodies of water and bodies of water that have been or will be rehabilitated: the description of these factors must be based on an ecomorphological assessment in line with the sequential modular approach and on a description of the hydrological condition of the relevant body of water before and after utilization (part of the concession process), taking into account the statutory obligations regarding water rehabilitation and/or existing rehabilitation plans; - project effects on habitats and populations: the description must refer to spawning areas and crustacean habitats of national significance, in particular fish habitats and habitats of species that are highly endangered or in danger of extinction; - project effects on waterfalls: the description must specify any affected waterfalls and project effects on water volumes in these waterfalls in detail; - project effects on protected areas: the description must set out the objectives of protection and demonstrate that these are not impaired or that the situation is in fact improved; – Opinion on the project by local environmental organizations, to be submitted via an environmental organization represented within VUE. The VUE Board assesses the application. If the Board is not satisfied that a project meets the certification requirements, it notifies the applicant accordingly, providing written reasons. *Step 2:* If the preliminary vetting process is successful, *naturemade star* certification according to GK-1 and LK-WK1 can be initiated. Only projects already built can be certified.
B-WK2: Interim regulations for old plants	Old plants which are in the process of being ecologically upgraded to earn VUE *naturemade star* certification can only receive the *naturemade basic* quality seal until the upgrade is complete. Under certain conditions, which must be agreed in writing with VUE, operators may advise that they are seeking certification as an 'eco-electric power plant' (e.g. 'XY City Electricity is building an eco-electric power plant here.') Evidence of a credible timescale for the interim regulation has to be shown.
B-WK3: Mixed Utilisations	It is possible to certify electricity from separate installations or an independent part of complex systems of several hydroelectric plants (mixed utilisation). The same criteria apply for the certification of mixed utilisations as for hydroelectric plants. Environmental organisations must have an input into the recertification process and into the development of the management concept. Often the interaction of several installations or parts of plants is very complex. The responsibility for the impact on the water ecology and therefore the responsibility for compliance with the green hydro criteria is divided among all plants involved. For this reason, system boundaries

must be established for the power plant or part thereof. First, this entails checking the overall impact of the various power plants/parts thereof. Then the proportionate scope of responsibility of the portion to be certified is deduced, having regard to conformity to the underlying green hydro requirements.

To define a clear framework at an early stage, it is necessary to obtain a preliminary decision by the Board of the VUE which includes the decision on the system boundaries and the relevant green hydro criteria. The preliminary decision of the Board of the VUE refers only to the system boundaries of mixed utilisations and the basic criteria relevant to certification. For mixed utilisations it is always preferable to obtain certification for all plants involved. Provided that the sphere of influence of the certifiable part of the plant conforms to the underlying requirements and that the plant part concerned contributes to improving the ecology of the overall system (e.g. increased, seasonally adjusted residual water supply; mitigation of impacts of water surge/receding throughout the system; improved fish passage and bed load carried per second; etc.), individual power plants/parts thereof in the mixed system may be certified.

Mixed utilisations are:
Plants which use water at different locations (min. 2) and run several parts of installations together; also plants which use a common diversion section; plants which use the process water from an upstream plant; plants which use a common reach and also cross-flow turbines (=use of the residual flow to generate energy).

The application (to be submitted 6 weeks prior to a VUE Board meeting) must include:

- an overview of all installations and parts of plants making up the overall mixed utilisations system
- a description of all concerned installations, plants and parts of plants incl. the most important data and geographic boundaries (performance, production, concession, day/annual storage etc.)
- names of and relationships to the operators of all plants involved
- a justification why it is not possible to certify the system as a whole (ongoing proceedings, financial reasons, schedule etc.)
- a proposal for the precise system boundaries incl. a substantiated submission stating which green hydro management areas are perceived to be relevant for the certification of the installation or part of a plant and which are not, and the scope of responsibilities of these management areas.
- illustration of all ecological benefits and remaining ecological deficits (e.g. hydropeaking, bedload management, residual water etc.) of the system as a whole.
- a proposal of how to delineate the *naturemade star* certified part of the system from the other parts and how this can be communicated (e.g. by an notice board clearly visible to passersby)
- a proposal of how to involve the local environmental organisations in the certification process

B-WK4: System boundaries for certification

As a rule, electricity production is certified at the transformer terminal (where the electricity is injected into the 'public grid'). Certification at producer terminals (generator) are possible in the following cases:
- micro-hydro power plants and
- plants which affect a reasonably limited area in hydrological terms (e.g. a plant located in a small side valley, as part of a chain of plants).

	Special requirements for hydroelectric power plants:
S-WK1: Fund	Hydroelectric plants where capacity exceeds 100 kW and all cross-flow turbines (even with a capacity < 100 kW) must launch an "ecological improvement fund" to obtain the *naturemade star* quality label. The plant operator has to make regular financial contributions towards measures for ecological improvement.
S-WK2: Input to fund	The ecological improvement fund is financed by the producer. This funding comprises a contribution of CHF 0.009 per sold *certified* kWh and CHF 0.001 per generated *certified* kWh. The contribution of CHF 0.009 is based on the quantity sold **by the producer** under the *naturemade star* quality seal.
S-WK3: Resource management	The plant operator is responsible for managing eco-investments. The annual monitoring audit covers the management and correct use of the money. The accounting period of the ecological improvement fund should correspond to that of the hydroelectric power plant itself. In the event of termination of the licensing agreement, the power plant operator is bound, with the approval of the Fund Steering Committee, to submit a proposal to VUE for appropriation of the balance of the funding.

S-WK4: Measures	Contributions from the ecological improvement fund are used to implement ecological improvement measures. Measures for the ecological improvement of the affected waterbody and in the hydrological catchment area are always top priority (not only in the stretch belonging to the concession).This includes initiatives to communicate the improvements made to the ecology of the waterbody. If no further reasonable ecological measures can be identified in the top priority category, investment may be made in ecological measures for other waters (at regional and national level) and for endangered habitats of non-aquatic life (e.g. marshlands) at local level in the area around the hydroelectric power plant. Measures which can be integrated into overall regional or local improvement plans should take priority. If further information is required to prepare the practical implementation of adopted measures, the fund may, exceptionally, be used for ecological studies of the waterbody.
S-WK5: Agreed implementation of measures	Measures to be financed from the fund have to be negotiated between the power plant operator and the local (and, if necessary, regional) authorities and environmental organizations. A steering committee should also be set up for this purpose. Members should be representatives of the power plant company, the local/regional authorities and environmental organizations active at local/regional level. In addition, specialists in water ecology, representatives of the plant companies' marketing section and representatives of other key stakeholders may also be brought in. The steering committee decides on the definition of the measures and how they will be prioritized in practical terms. Measures should correspond to the ecological state of the art and achieve an optimum cost/benefit ratio. N.B: it is possible to invest explicitly in an increase of residual water quantities. A preliminary list of selected measures must be available at the time of the certification audit. The power plant operator makes the list of measures publically available.

Electricity generation from drinking water power plants

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. Hydroelectric plants achieve this threshold value categorically.
	Local and regional criteria:
LK-T1: Turbines driven by drinking water	Proof is required that only drinking water needed for the local drinking water supply, including the permitted reserves, is used to drive the turbines.
LK-T2: Sources used	As an annual average a maximum of 80 l/s is drawn from each source used. If more than 80 litres per second are drawn from the source, residual water requirements must be met.
LK-T3: Groundwater protection zones	Protection zones safeguard the long-term drinking water quality. The sources used lie within an approved or provisional groundwater protection zone. All protection measures in Protection Zone I are already implemented.
LK-T4: Surplus water	Surplus water from reservoirs and well chambers causes no hydraulic shock or erosion in the receiving watercourse throughout the year. Ratio of input quantity to outflow does not exceed 1:5.
LK-T5: Flushing from reservoirs and well chambers	Flushing from reservoirs and well chambers into the receiving watercourse only takes place at high outflow rates. The water quality requirements are met (Water Conservancy Order Annexe 2).
LK-T6: Point of input to outfall	Input points are integrated into the bank area causing minimum environmental impact.
LK-T7: Machinery maintenance	Machinery and water basins are configured in such a way that there can be no water contamination from hydraulic oil and grease, including during maintenance work.
LK-T8: Integration into the landscape	All parts of the plant are either housed in existing buildings or carefully integrated into the landscape by a suitable choice of material and/or design.
LK-T9: Protection of sensitive biotopes	All parts of the plant are located outside listed or sensitive biotopes or are integrated into them by sensitive choice of material and planting.
LK-T10: Noise protection	The positioning of outlet apertures and acoustic insulation measures reduce noise emissions to a minimum. The Noise Protection Order is observed.

Electricity generation from photovoltaic plants

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for photovoltaic plants. Photovoltaic plants with poly- or mono-crystalline cells which are constructed later than 31.12.2000 and/or have an annual energy outcome of at least 500 kWh per kWp achieve this threshold value categorically.
	Local and regional criteria:
LK-P1: Protection of surroundings	Photovoltaic power plants can be certified if located in areas approved for building development. They can also be certified outside those areas if constructed on, or attached to, buildings, protective structures (e.g. avalanche and noise barriers) or on building or plant sections firmly attached to the ground. The main use of the plant or structure must be guaranteed in the long term. Secondary use by the photovoltaic plant must not predominate. There must be no lasting impairment of landscapes or habitats meriting protection or, if there is, their reinstatement must be possible. This also applies to the erection and operation of the ancillary plants necessary to obtain the energy.

Electricity generation from wind turbines

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for wind turbines.
	Local and regional criteria:
LK-W1: Protection of surroundings	For wind turbines there must be a guarantee that the surrounding area remains under protection. As a voluntary restriction, the Suisse Eole association has undertaken only to build wind farms in areas which qualify as environmentally compatible in the terms of the study "Wind Power in Switzerland[2]" It can therefore be assumed that, in principle, this criterion is met in Switzerland.

2 *Published by the Swiss Federal Office of Energy; Federal Office for Environment, Forestry and Countryside; Federal Office for Spatial Development: Konzept Windenergie Schweiz, Grundlagen für die Standortwahl von Windparks, Bern 2004.*

Electricity generation from green waste composting plants

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by from audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for fermentation plants.
	Local and regional criteria:
LK-G1: No impairment of landscape	VUE assumes that a valid building permit for the construction of plants for the generation of energy from biogenic fuels in Switzerland includes the obligation to avoid any negative impact on the landscape.
LK-G2: Safeguarding biodiversity and compliance with IP Guidelines	If biogenic material is cultivated specifically for energy purposes the Integrated Production (IP) Guidelines must be observed.
LK-G3: Odour	The emission of odour which may occur during receipt, preparation and composting of materials should be avoided as far as possible. All possible measures to reduce odour emissions must be the state of the art.
LK-G4: Exhaust gas emissions	Exhaust gas emissions may occur during receipt and preparation of materials. Flue gas may also be emitted when firing a BTTP. Both types of emission must satisfy the criteria of the Swiss Clean Air Order 1985.
LK-G5: Noise	Noise emissions may occur during mechanical post-processing, post-composting, at the BTTP and during the distribution of the end-product. Such noise emissions must comply with the requirements of the Swiss Noise Abatement Order 1986.
LK-G6: Energy sources for a biogas plant	Plants which generate electricity from biogas, using both biogenic waste and other energy sources are eligible for *naturemade star* certification if: – the plant is demonstrably designed for generating power from renewable energy sources – biogenic waste accounts for at least 66 percent of the plant's total energy consumption, as an annual average. The individual proportions of the plant's total energy consumption must be constantly recorded using appropriate measurement techniques. Only the quantity of electricity which derives from the biogenic waste portion of the plant's total energy consumption is eligible for certification. This rule is applicable especially to plants where admixture of natural gas is necessary to increase the biogas quality.

Electricity generation from agricultural biogas

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for fermentation plants.
	Local and regional criteria:
LK-LB1: Farm fertilizer management	Ammonia emissions are controlled via a farm fertilizer management system. This includes measures recommended by the Swiss Federal Institute for Agricultural Economics and Engineering (ART) to reduce ammonia losses.[3]
LK-LB2: Avoidance of ammonia emissions	Ammonia emissions must be reduced by covering the liquid manure pit and conveying emissions through a drag hose.
LK-LB3: Lighting-up oil consumption	Lighting-up oil in a BTTP ignition jet must not exceed 10 percent of the total energy input.
LK-LB4: Co-substrate restriction	Agricultural biogas production is based on an upper limit of 50 percent co-substrate (based on raw material).
LK-LB5: Energy sources for a biogas plant	Plants which generate electricity from biogas, using both biogenic waste and other energy sources are eligible for *naturemade star* certification if: – the plant is demonstrably designed for generating power from renewable energy sources – biogenic waste accounts for at least 66 percent of the plant's total energy consumption, as an annual average. The individual proportions of the plant's total energy consumption must be constantly recorded using appropriate measurement techniques. Only the quantity of electricity which derives from the biogenic waste portion of the plant's total energy consumption is eligible for certification. This rule is applicable especially to plants where admixture of natural gas is necessary to increase the biogas quality.

3 *Cf. Frick, F. and Menzi, H. (1997): Hofdüngeranwendung: Wie Ammoniakverluste vermindern? Auch einfache Massnahmen wirken. FAT reports, no.. 496.*

Biomethane generation from green waste composting plants and agricultural biogas plants

	naturemade star certification criteria
	The first requirement for award of the naturemade star quality seal is that all basic certification criteria must be met.
	Global criteria:
GK-G1: LCA threshold value	Environmental impact caused by biogas plants for auditing (generation of gas and injection of biomethane into a supply network or directly to a filling station) must not exceed half that of natural gas (fuel for transport, fuel for heating), incl. extraction, transport and injection into a supply network. This is checked with a standardised parameter model for fermentation plants.
	Local and regional criteria:
LK-GG1: No impairment of landscape	VUE assumes that a valid building permit for the construction of plants for the generation of heat from biogenic fuels in Switzerland includes the obligation to avoid any negative impact on the landscape.
LK-GG2: Safeguarding biodiversity and compliance with IP Guidelines	Compliance with the Integrated Plant Production (IP) Guidelines is a minimum requirement for targeted cultivation of biogenic fuels.
LK-GG3: Odour	The emission of odour which may occur on intake, preparation and composting of biogenic materials should be avoided as far as possible. All possible measures to reduce odour emission must be state of the art.
LK-GG4: Avoidance of ammonia emissions	For agricultural biogas plants, ammonia emissions are controlled and minimised via a farm fertilizer management system (by covering the liquid manure pit and conveying emissions through a drag hose or other prevention measures e.g. a biofilter). This includes measures recommended by the Swiss Federal Institute for Agricultural Economics and Engineering (FAT) to reduce ammonia losses.[4]
LK-GG5: Methane emissions	During rated operation, the emission of defined offgas at the treatment facilities may not contain more than 1% of the methane contained in the raw gas. Proof of compliance with the limit value is governed by the requirements of SVGW Guideline G209.
LK-GG6: Avoidance of gas emissions during operation interruptions	An operation log has to be kept to document all operational interruptions. To avoid gas emissions, escaped gas during operational interruptions must be burned off (e.g. by flame or gas burner).

4 *Cf. Frick, F. and Menzi, H. (1997): Hofdüngeranwendung: Wie Ammoniakverluste vermindern? Auch einfache Massnahmen wirken. FAT reports, no.. 496.*

LK-GG7: Energy sources for a biogas plant	Plants which generate biomethane from biogas, using both biogenic waste and other energy sources are eligible for *naturemade star* certification if: – the plant is demonstrably designed with a view to generating power from renewable energy sources; and – biogenic waste accounts for at least 66 percent of the plant's total energy consumption, as an annual average. The individual proportions of the plant's total energy consumption must be constantly recorded using appropriate measurement techniques. – for the improvement of the fuel value it is permitted to add propane gas up to a maximum of 10%. Only the quantity of biomethane which derives from the biogenic waste portion of the plant's total energy consumption is eligible for certification (only the part of biomethane without propane gas, if applicable).

Electricity generation from sewage gas

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for sewage gas.
	Local and regional criteria:
LK-K1: Waste gas emissions	Waste gas is emitted during the use of biogas in a BTTP. In all cases, these emissions must satisfy the criteria of the Swiss Clean Air Order 1985. The gas emissions from transport of co-substrate must be taken into account for the LCA.
LK-K2: Noise	These noise emissions must meet the requirements of the Swiss Noise Protection Order 1986. The noise emissions from transport of co-substrate must be taken into account.
LK-K3: Odour	The emissions of odour which may occur at receipt and during preparation of co-substrates should be avoided as far as possible. All possible odour reduction measures must be state of the art (e.g. paved places with wastewater catchment).
LK-K4: Energy strategy	An energy strategy must provide specific proof of energy. The planning of measures should show which activities are to be planned and implemented, and when (cf. also special requirements S-K4).
	Special requirements for plants generating power from sewage gas:
S-K1: Sponsorship fund	Wastewater purification units larger than 50,000 resident equivalents must set up a fund for ecological and energy-saving improvement measures in order to receive the *naturemade star* quality label. This fund is raised by regular financial contributions from the certified electricity generation plant.
S-K2: Input to fund	This funding comprises a contribution of CHF 0.009 per kWh electricity sold and CHF 0.001 per kWh electricity generated. The contribution of CHF 0.009 is based solely on the quantity sold under the *naturemade star* quality seal.
S-K3: Resource Management	Resource management is a matter for the WPP plant operator. The management and correct use of the money is checked as part of the annual monitoring audit. In the event of termination of the licensing agreement, the power plant operator is bound, with the approval of the Fund Steering Committee, to submit a proposal to VUE for appropriation of the balance of the funding.
S-K4: Use of resources	Contributions are channelled into a package of measures for the ecological and energy-related improvement of the wastewater treatment plant. Neighbours and environmental organizations are involved in deciding these measures. A list of possible measures must be provided at the time of the audit.

Certification of biomethane generation from sewage gas

	naturemade star certification criteria
	The first requirement for award of the *naturemade star* quality seal is that all basic certification criteria must be met.
	Global criteria:
GK-G1: LCA threshold value	The environmental impact caused by plants applying for certification (generation, treatment and injection into a supply network or direct to a filling station) must not exceed half that of natural gas (fuel for transport, fuel for heating), incl. extraction, transport and injection into a supply network. This is checked with a standardised parameter model for sewage gas.
	Local and regional criteria:
LK-GK1: Gas emissions	In the co-fermentation of organic waste, the related exhaust gas emissions from lorry traffic must be taken into account.
LK-GK2: Odour	The emissions of odour which may occur on intake and preparation of co-substrates should be avoided as far as possible. All possible measures to reduce odour must be state of the art.
LK-GK3: Energy plan	An energy plan must provide specific proof of energy. The planning of measures should show which activities are to be planned and implemented, and when (cf. also special requirements S-K4).
LK-GK4: Methane emissions	In rated operation, the emission of defined offgas at the treatment facilities may not contain more than 1% of the methane contained in the raw gas. Proof of compliance with the limit value is governed by the requirements of SVGW Guideline G209

Electricity generation from wood fuels and waste timber

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for wood fuels and waste timber.
	Local and regional criteria:
LK-H1: Annual efficiency	Plants for generating electricity from wood fuel and waste timber can be certified *naturemade star* if they achieve an annual overall efficiency which meets the minimum requirements shown in the graph on page 36.
LK-H2: Energy strategy	The plant has an energy strategy to reduce its electricity and thermal energy requirements.
LK-H3: Origin of waste timber	The operator of the plant for generating electricity from wood fuel and waste timber provides a self-declaration stating the origin of the wood fuels.
LK-H4: Multicyclone	Plants with multicyclone and no other cleaning filter use only untreated (freshly cut) wood or wood residues from first-level processing. This will be checked during the annual monitoring audit based on the declaration.
LK-H5: Tropical wood	Tropical wood used comes from FSC-certified cultivation.
LK-H6: Untreated wood	The origin of untreated wood meets a standard equivalent to the FSC label.

Thermal energy generation from wood fuels and waste timber Combined Heat and Power plants

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-W1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a condensing natural gas boiler (> 100 kW). This is checked with a standardised parameter model for wood fuels and waste timber.
	Local and regional criteria:
LK-WHK1: Annual efficiency	Combined heat and power (CHP) plants for generating thermal energy from wood fuel and waste timber must achieve an annual overall efficiency which meets the minimum requirements shown in the graph on page 36.
LK-WHK2: Energy strategy	The plant has an energy strategy to reduce its electricity and thermal energy requirements.
LK-WHK3: Origin of wood fuels	The operator of the plant for generating thermal energy from wood fuel and waste timber declares the origin of the wood fuels.
LK-WHK4: Waste wood	Waste wood from tropical wood comes from FSC-certified cultivation. Mixed wood which includes tropical wood may not be used in certified plants.
LK-WHK5: Untreated wood	The origin of untreated wood meets a standard equivalent to the FSC label.

Thermal energy generation from wood fuels and waste timber combustion > 70kW

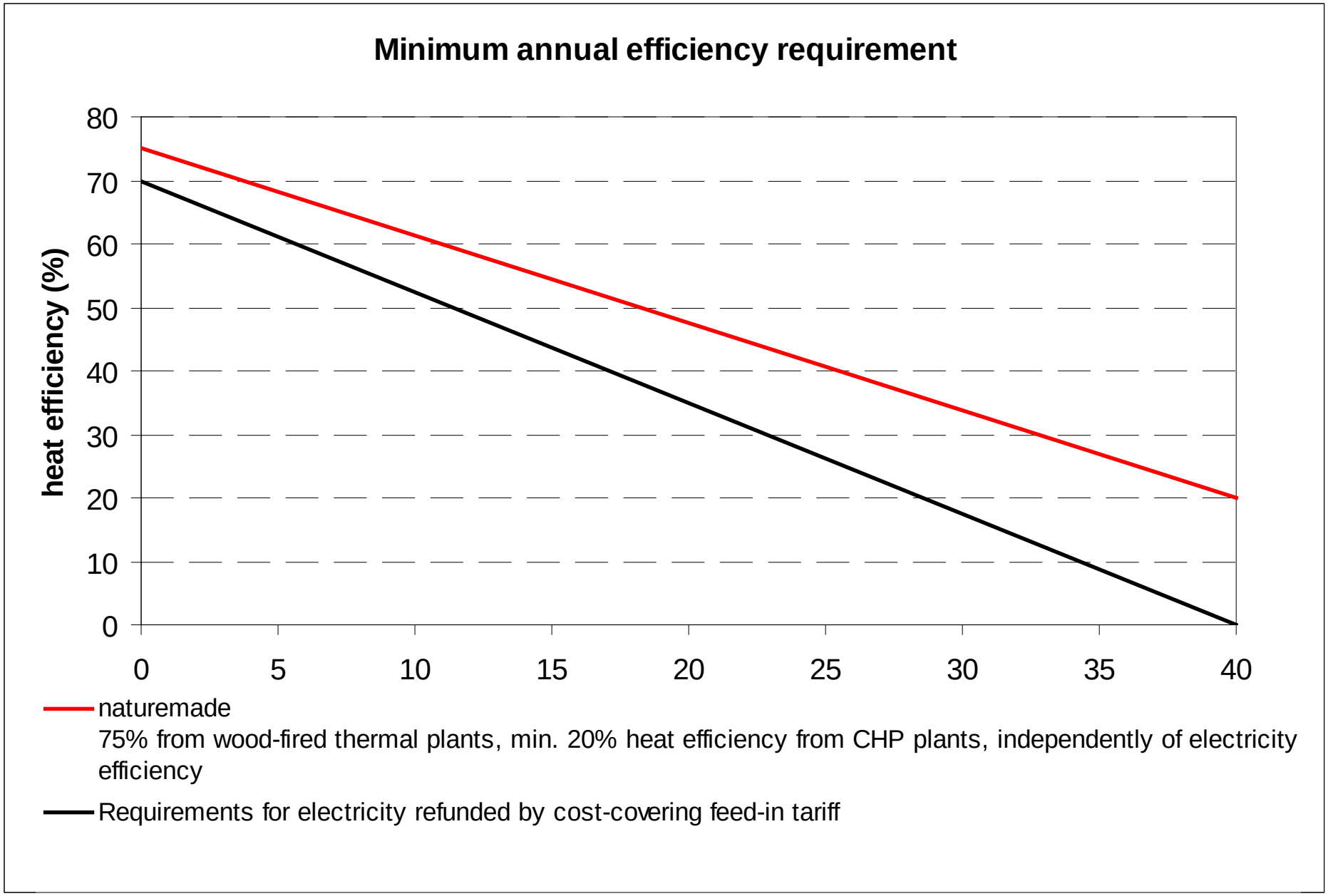
	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-W1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a condensing natural gas boiler (> 100 kW). This is checked with a standardised parameter model for wood fuels and waste timber combustion.
	Local and regional criteria:
LK-WHF1: Plant capacity	Plants for generating thermal energy in a wood fuel and waste timber combustion can be certified if the plant has a capacity of at least 70 kW.
LK-WHF2: Quality management	The plant was constructed and optimised based on the quality management standards for wood-fired thermal plants, including the completion of a feasibility study. This must contain reference to the framework conditions for energy planning and the situation and condition of the building.
LK-WHF3: Annual efficiency	The overall system (plant and thermal supply network) must achieve an annual overall efficiency of at least 75% (see graph on page 36).
LK-WHF4: Origin of wood fuels	The operator of the plant for generating thermal energy from wood uel and waste timber declares the origin of the wood fuels.
LK-WHF5: Waste wood	Waste wood from tropical wood comes from FSC-certified cultivation. Mixed wood which includes tropical wood may not be used in certified plants.
LK-WHF6: Untreated wood	The origin of untreated wood meets a standard equivalent to the FSC label.

Electricity generation from wood fuels and waste timber with gas cogeneration with fixed bed gasifier and dry gas cleaning

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a modern combined-cycle gas-turbine power plant. This is checked with a standardised parameter model for wood fuels and waste timber with gas cogeneration with fixed bed gasifier and dry gas cleaning.
	Local and regional criteria:
LK-HV1: Annual efficiency	CHP plants for generating electricity from wood fuel and waste timber must achieve at least 60% overall efficiency. In any case they must achieve at least 20% heat efficiency.
LK-HV2: Energy strategy	The plant has an energy strategy to reduce its electricity and thermal energy requirements.
LK-HV3: Origin of wood fuels	The operator of the plant for generating electricity from wood fuel and wood timber declares the origin of the wood fuels.
LK-HV4: Multicyclone	Plants with multicyclone and no other cleaning filter use only untreated (freshly cut) wood or wood residues from first-level processing. This will be checked during the annual monitoring audit based on the declaration.
LK-HV5: Tropical wood	Tropical wood used comes from FSC-certified cultivation.
LK-HV6: Untreated wood	The origin of untreated wood meets a standard equivalent to the FSC label.
LK-HV7: Wastewater	Wastewater as a by-product is treated in a special disposal plant by wet oxidation. If another method of wastewater treatment is used, evidence of an appropriate disposal and/or treatment system must be provided.

Thermal energy generation from wood fuels and waste timber with gas cogeneration with fixed bed gasifier and dry gas cleaning

	***naturemade star* certification criteria**
	The first requirement for award of the *naturemade star* quality seal is that all *naturemade basic* certification criteria must be met.
	Global criteria:
GK-W1: LCA threshold value	The environmental impact caused by audited plants must not exceed half that of a condensing natural gas boiler (> 100 kW). This is checked with a standardised parameter model for wood fuels and waste timber combustion with gas cogeneration with fixed bed gasifier and dry gas cleaning.
	Local and regional criteria:
LK-WHV1: Annual efficiency	Plants for generating thermal energy from wood fuel and waste timber can be certified *naturemade star* if they achieve an annual overall efficiency level which meets the minimum requirements shown in the graph on page 36.
LK-WHV2: Energy strategy	The plant has an energy strategy to reduce its electricity and thermal energy requirements.
LK-WHV3: Origin of wood fuels	The operator of the plant for generating thermal energy from wood fuel and waste timber declares the origin of the wood fuels.
LK-WHV4: Waste wood	Waste wood from tropical wood comes from FSC-certified cultivation. Mixed wood which includes tropical wood may not be used in certified plants.
LK-WHV5: Untreated wood	The origin of untreated wood meets a standard at the level of the FSC label.
LK-HV6: Wastewater	Wastewater as a by-product is treated in a special disposal plant by wet oxidation. If another method of wastewater treatment is used, evidence of an appropriate disposal and/or treatment system must be provided.


Minimum annual efficiency requirement
heat efficiency (%)
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
naturemade
75% from wood-fired thermal plants, min. 20% heat efficiency from CHP plants, independently of electricity efficiency
Requirements for electricity refunded by cost-covering feed-in tariff

Certification of electricity supply

To the *naturemade star* and *naturemade basic* quality standards

	***naturemade basic* and *naturemade star* certification criteria**
ZK-L1: Origin of energy	The origin of the energy product for certification is traceable back to clearly described and identifiable sources (own plants or third-party suppliers). Sources must be clearly indicated in the form "declaration for energy products". In the case of third-party suppliers, the proof must be in the form of an energy supply contract. If no physical delivery takes place, or if only the "ecological added value" of the energy is obtained, proof must be provided through an appropriate quality management system (e.g. a certificate trading system). Evidence must also be provided that there is no double sale of 'ecological added value'.
content of *naturemade* certified energy products	*naturemade* certified energy products guarantee to the end-customer the full ecological added value. Single parts of the ecological added value (esp. CO2-emission reductions) must not be traded separately from the *naturemade* certified product. This applies equally to physical supplies and certificates.
naturemade star energy products	An energy product for which the supplier applies for certification with the *naturemade star* quality label must only consist of *naturemade star*-certified energy from new renewable sources.
naturemade basic energy products	An energy product for which the supplier applies for certification with the *naturemade basic* quality label must only consist of *naturemade star*-certified or *naturemade basic*-certified energy. If an energy product contains even a small proportion of non-certified energy (e.g. as little as 0.1%), it cannot be designated a *naturemade basic*-certified product.
Inclusion of electricity refunded by the cost-covering feed-in tariff	In exceptional cases, for the purposes of legal compliance, it is possible to include electricity refunded by the cost-covering feed-in tariff into a *naturemade*-certified product. This applies in particular to suppliers whose sales only take the form of electricity products. The inclusion must be approved by the Board of the VUE.
ZK-L2: Sponsorship and improvement	Maintaining and promoting the sustainable and efficient supply of energy must be an essential part of the licensees' corporate policy.
ZK-L3: Legal compliance	All technical, legal and other conditions necessary to supply energy must be met.
ZK-L4: Energy management	The supplier uses an appropriate energy management system to assure its procedures and conducts suitable measurement and monitoring activities.
ZK-L5a: Availability and synchronization	The end-customer only pays for the supplied energy when the corresponding capacity is available. Within an annual accounting period, the energy supplier must achieve a balance of certified energy procured and sold. Annual synchronization of procurement and consumption (sales) applies, as ongoing synchronization would be very demanding in terms of regulatory mechanisms and monitoring.

ZK-L5b: Demand excess	The certified energy sold each year must not exceed the certified energy generated in the same year. **Electricity:** The supply or demand excess must be settled similarly to the method prescribed for the validity of proofs of origin (Proofs of Origin Regulation Article 2.4). Accordingly, the naturemade certificate expires 12 months after the end of the issuing interval. For production quantities in the months January to May, the certificate is tradeable until no later than May the following year. In this case, the years of production and of consumption must be identical. The issuing interval for plants with connected power greater than 30 kVA is one calendar month. For other plants, the interval is one calendar month, one calendar quarter or one calendar year. **Heat and biomethane:** A demand excess in one year may exceptionally equal a maximum of 15% of the quantity sold in the same year. It can either be offset against unsold certified energy from the previous year, or reduced in the course of the following year. Exceptionally, VUE will allow a supply surplus of purchased but unsold energy to be carried forward into the following year. This carry-forward may not exceed 15% of the energy sold in the year of procurement.
ZK-L6: Termination	Withdrawal from an electricity supply contract must be contractually governed, and without risk to the customer.
ZK-L7: Supply guarantee	The energy supplier must guarantee that the contracts for the procurement of energy from renewable sources (i.e. the maximum period of validity of the licence) exceed the duration of the energy supply contracts concluded.
ZK-L8: Product information	The energy supplier must provide the end-customer with consistent product information supplementing the certificate. This information must contain certain data prescribed by VUE and be issued to the customer on sale of the certified energy. The product information must cover at least the following points: – percentage composition of energy sources used – origin of energy sources used – location of energy generating plant(s) and/or production premises for renewable energy – the logo of *naturemade* of the according quality in an appropriate form and possibly the following, voluntary information: – certificate number and – overall environmental impact as per EcoIndicator ,99.
ZK-L9: Certification documents	For a certification by VUE, the energy supplier must submit to VUE the following documents: – certification application: this contains the main information about the enterprise and the future licensee – declaration for energy products: this contains all important information about the energy product, including name and declaration of origin – certification audit report: this confirms compliance with all relevant *naturemade* certification criteria.

ZK-L10: Implementation of support model	All suppliers of *naturemade*-certified energy (star/basic) to end-customers must implement the *naturemade* support model. Proof of implementation of the naturemade support model is provided annually by the following documents: – energy accounting: a compilation of all figures on energy procurement and sales relevant to the naturemade support model, and – a marketing plan or similar management tool detailing specific marketing efforts for the naturemade-certified energy products (star/basic), with timetable for implementation.
ZK-L11: Compliance with communication principles	All suppliers of *naturemade*-certified energy products must follow the communication and configuration guidelines defined by VUE, as issued with the certificate.

	***naturemade* support model**
	Basic conditions
FM-1: Implementation of support model	The *naturemade* support model in the form described here must be implemented by all electricity suppliers selling *naturemade star* or *naturemade basic* licensed electricity products to end-customers.
FM-2: Interim	The *naturemade* support model in the form described here must be implemented within three years. This means that an interim period of three years applies. The necessary actions for this must be listed in the form of a marketing plan or similar management tool during the interim itself (see also FM-7 "marketing obligation").
FM-3: Rules for resellers and traders	For electricity suppliers which also supply *naturemade (basic/star)* electricity to resellers and traders, implementation of the support model depends only on the proportion of certified electricity which is sold directly to end-customers.
	Conditions for mandatory quota
FM-4: Basis of calculation	The *naturemade* support model relates to all certified electricity products of the supplier. It is linked to the **quantity** of *naturemade (star/basic)* electricity **actually sold** to end-customers (corresponding to 100 percent).
FM-5a: Mandatory Quota	The *naturemade* support model comprises the following mandatory quota: a) Referring to the **quantity** of certified electricity **actually sold to end-customers** (corresponding to 100 percent), at least 5 percent must be procured from *naturemade star*-certified electricity. b) Referring to the **quantity** of certified electricity **actually sold to end-customers** (corresponding to 100 percent), at least 2.5 percent must be *naturemade star*-certified electricity from **energy sources of the future**. VUE defines electricity from the following energy systems as *naturemade* energy sources of the future (as at 1.1.2005): – electricity generated from wind power – electricity generated from photovoltaic processes – electricity generated from green waste composting – electricity generated from agricultural biogas and – electricity generated from wood fuels and waste timber.

FM-5b *naturemade basic* products	For all electricity certified with *naturemade basic* (valid from 1 January 2005), the part of the *naturemade* mandatory quota must be sold as a component of the product. The electricity product therefore has to be sold as a mixed product, including at least 5 percent *naturemade star* electricity. Out of this, at least 50 percent of the *naturemade star* electricity must derive from *naturemade star* certified energy sources of the future.
FM-6 Building of additional plants	In order to fulfil the 2.5 percent from *naturemade* energy sources of the future, electricity suppliers can include all plants constructed since 1.1.1995 which generate electricity from *naturemade*-energy sources of the future. New plants in the terms of the support model are also plants where at least 50% of the equivalent new value is new investment in plant improvement. When evaluating new investments, only system-related renovation work can be considered, such as the replacement of solar panels or current inverters, but not expenses for operation and maintenance.
	Marketing conditions
FM-7: Marketing obligation	Every electricity supplier which has to implement the support model because it sells *naturemade*-certified electricity products is obliged to submit a marketing plan or equivalent management tool detailing specific marketing efforts for *naturemade*-certified electricity products (star/basic), with a timetable for their implementation.
	Support model and foreign countries
FM-8: Inclusion of foreign plants	The electricity quantities required for the *naturemade* support model can be procured from foreign generation plants. The following framework conditions apply: – electricity procured for the *naturemade* promotion model from abroad must be certified *naturemade star* – no more than 49 percent of the necessary quantity of electricity from *naturemade star* energy sources of the future and *naturemade star* water power may be procured from ENTSO-E (European Network of Transmission System Operators for Electricity) – the supplier must prove that there is no double set-off of the ecological value-added. Foreign plants which have been dropped from the promotion and additions programmes of the relevant country on grounds of age cannot count towards the *naturemade* support model.