TÜV SÜD Standard

Industrie Service

Certification of electricity products from renewable energy sources with simultaneous generation and supply

(Abbreviated as: Product EE02

including

Regional Sourcing module “Product EE02 Region”:

TÜV SÜD CMS Standard 82

Version 02/2019

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Content

Change history

07/2015	Individual clarifications were added. Alignment to the requirements of the “Product EE01”, version 01/2019 TÜV SÜD standard Regional sourcing as defined in the HkRNDV is accepted as specification of regional sourcing in corporate policy Inclusion of direct offers and landlord-to-tenant supply Updating/complementing of whitelist of support measures Adding of optional Physical Delivery module.

Terms and definitions

Renewable energy	Hydropower (pumped storage plants minus energy input for pumping operation), wind power, biomass, biogas, landfill gas, solar power/photovoltaics, geothermal power, biogenic content of household refuse and industrial waste.
Biomass	Energy carrier in accordance with the German Biomass Ordinance as amended at the time of certification.
Biogas	Gas defined as biogas in the currently applicable legislation: Biomethane, gas from biomass, landfill gas, sewage gas and hydrogen derived from the electrolysis of water and synthetically produced methane, provided the major part of the electricity used for electrolysis and the major part of the carbon dioxide or carbon monoxide used for methanisation is established as coming from renewable sources as defined in 2009/28/EC. (See also EnWG)
Biomethane	Biogas upgraded to natural-gas quality and injected into the natural gas grid.
Direct electricity supply	Direct electricity supply is produced by a distributed power-generation plant/installation using energy from renewable sources. It is generated in a customer-owned plant/installation and supplied to at least 3 different consumers, mostly tenants or home owners, without making use of the public supply grid.
Trans-European power grid	The Trans-European power grid includes the grid of continental Europe interconnected with the grid of the Scandinavian countries Norway, Sweden and Finland and the Baltic countries and the grid of the United Kingdom and Ireland. The power grids of the countries of Iceland, Malta, and Cyprus, which are not connected to the above interconnected grid, do not form part of the Single European Grid. The grids of these island states must be regarded as separate interconnected grids. The rail power grids, which are technically interconnected with the other grid, are considered to be part of the Trans-European grid.
Region	A continuous territory in a first-level NUTS-1 region defined by the certificate-holder[1]. Deviation from the boundaries of the first-level NUTS regions is acceptable with approval from the Certification Body. Region according to the Implementing Ordinance on Guarantees of Regional Origin for Electricity from Renewable Energy Sources (HkRNDV): Postcode area or municipal district of the end-user and all postcode areas which are fully or partly within a radius of 50 km of the end-user's postcode area.
Simultaneous generation and consumption	Energy from renewable sources is generated and fed into the grid simultaneous to its consumption. Consumers and generators must be in the same interconnected grid. The length of the time unit is defined according to the shortest time unit of the relevant national energy sector.

Abbreviations

CMS	TÜV SÜD Industrie Service GmbH · Carbon Management Service
EEG	Act on the Revision of the Renewable Energy Sources Legislation in the Field of Electricity in the Federal Republic of Germany
EnWG	German Law on Electricity and Gas Supply (Energy Industry Act — EnWG)
GoO	Guarantee of Origin
UBA	German Federal Environmental Agency
HkRNDV	Ordinance of the German Federal Environmental Agency for establishing a regional register of guarantees of origin and further developing the national register of GoO (Herkunfts- und Regionalnachweis-Durchführungsverordnung)

[1] First-level regions of the official EU nomenclature of territorial units for statistics (NUTS) (first-level regions in Germany are the German states (Länder)).

References

- Act on the Revision of the Renewable Energy Sources Legislation in the Field of Electricity in the Federal Republic of Germany (EEG)
- VdTÜV Code of Practice 1304 (10/2014)
- Leitfaden “Stromkennzeichnung” des BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. (“Electricity Labelling” Guidelines published by the German Association of Energy and Water Industries, available in German only)
- ISO/IEC 17065:2012 Conformity assessment – Requirements for bodies certifying products, processes and services

Foreword

Consumers opting for the purchase of a green electricity product seek to buy electricity that is derived completely (100%) from renewable sources of energy, and thus, where possible, to contribute to the expansion of renewables capacity. Given this, green electricity products that offer the aspect of additionality, i.e. additional environmental benefits, are considered to be more valuable.

Certification of an electricity product according to the criteria of this standard ensures that clients cover 100% of their annual energy consumption by energy from renewable sources and that at least the same capacity from renewable sources is fed into the grid simultaneously with consumption (principle of simultaneous generation and consumption). Given this, no further power stations will be required to generate electricity according to the consumption profile. In this context, the purchasers of green power and the production facilities are assumed to be in one interconnected grid.

In addition, certification according to this standard contributes to an additional positive environmental impact, as a minimum 75 % of any increase in the price of the green electricity products not justified by higher costs must be invested in the expansion of renewable energy capacity or in the integration of renewable energy in the electricity market.

Another quality criterion of this standard is that it includes TÜV SÜD's net energy principle. This principle differs from other methods by including the entire amount of energy consumed for energy production, which must be covered by energy from renewable energy carriers. In this context, it does not matter whether the amount of electricity consumed has been produced internally or purchased from an external party.

Generally, a pool of power plants and installations is required to meet the criteria of simultaneous consumption and generation. Direct purchasing from producers that meet the requirements of the TÜV SÜD standard “Generation EE”, including the “Generation EE+” module, or the purchasing of power from power suppliers also certified according to “Product EE02“ is particularly suitable for delivering the power for such a green electricity product.

If the delivery of power is organised via brokers, these brokers must also be included in the scope of certification. Alternatively, brokers can be certified according to the TÜV SÜD Standard “Trading EE” for the quality of simultaneous generation and supply.

As an additional contribution to the expansion of energy from renewable sources, this standard also looks at corporate strategy. For certification to be successful, the organisation must have set itself the objective of increasing the share of renewable energy in its total energy mix or total delivered quantity of energy from renewable sources or the share of renewable energy among its private-household and commercial customers.

Given this, the green electricity product purchased by the customer and certified according to this standard is 100% renewable in overall accounting.

Starting from this basis, the standard also offers the additional option of certification of electricity products from regional sourcing, electricity products with CO_2 offsetting or “physically” supplied green electricity products.

Regional consumption and generation of energy from renewable sources strengthens customers‘ relations to generation plants, contributes to value-added in the region and can help to minimise the requirement for “electricity highways”, i.e. supra-regional electricity transmission lines.

Optional CO_2 offsetting takes into account the greenhouse gas emissions caused by power production including the upstream chains.

Certified “physical” supply by TÜV SÜD ensures that the electricity generated and the guarantee of origin will not be marketed and accounted separately from each other.

Compliance with these optional characteristics of the green electricity product is identified separately in the certificate.

1. Scope and general

1.1. Scope

This standard defines the requirements for delivery of electricity from renewable sources to consumers (green electricity product) and forms the basis for the certification of said products. It further offers the options of certification of green electricity products that additionally offer regional sourcing and/or CO_2 offsetting.

1.2. Sources and legal basis

a. Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on promotion of the use of energy from renewable sources (Renewable Energy Directive);

b. Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity (Internal Electricity Market (IEM) Directive)

c. Act on the Revision of the Renewable Energy Sources Legislation in the Field of Electricity in the Federal Republic of Germany (EEG) as amended

d. German Law on Electricity and Gas Supply, Energy Industry Act (EnWG) as amended;

1.3. Term and validity

This standard *(Version 02/2019)* will come into effect on 01/03/2019.

Following the introduction of a revised standard, certificate-holders are granted a transition period of 24 months or up to the next re-certification audit (whichever is the longer), during which they can align their certified system to the requirements of the revised standard. The re-certification audit following the expiry of this period will then be based on the revised standard.

1.4. Communication and use in advertising

Use of the certification in advertising statements must be in compliance with the Testing and Certification Regulations of the TÜV SÜD Group. Certification marks may only be used by the certificate-holder.

2. Requirements for the certification scheme

2.1. General

The certification scheme fulfils the requirements of the ISO/IEC 17065 and EN ISO 19011 standards.

2.2. Requirement for certification bodies

The certification body must maintain valid accreditation for the certification of products, processes or services (e.g. according to the EN 45011:1998 or ISO/IEC 17065:2012 standards, or recognition as a certification body under the Renewable Energy Directive).

2.3. Certification process

The certification process comprises certification audits and surveillance audits. While the certification audit focuses on the assessment of systems, processes, tools etc., the surveillance audit verifies compliance with the requirements of the standard in the past accounting period and reviews possible changes in the system compared to the certification audit. The certification cycle comprises a certification audit, a first surveillance audit (at least one audit within 12 months of the certification audit) and a second surveillance audit (at least once within 12 months of the first surveillance audit). The second surveillance audit is followed by either a re-certification process that is analogous to the certification process, or a closing audit (within 12 months of the 2nd surveillance audit at the latest).

2.4. Secondary certificates

In case of additional optional product certification, “secondary certificates” – based on a basic certificate – for identical products can be offered and issued to additional distribution points, distributors or shareholders of the certificate-holder. Requirements for the issue of secondary

certificates include a valid certification contract concluded between the certificate-holder and the certification body, and successful initial certification including verification of the acceptability of secondary certification and the establishment of the required processes. To maintain the validity of the secondary certificate, the certification body must regularly (on the basis of the risk involved, at least every 12 months) review the accounting and communication of the holder of the secondary certificate. Secondary certificates are valid for a maximum of three years; their validity is linked to the validity of the basic certificate.

Certified energy products are considered identical if their marketed characteristics are identical. If the characteristics of a product are changed, the requirements for a secondary certificate are no longer fulfilled and the organisation must obtain independent certification if it seeks to use certification or the certification mark in communication and advertising. The decision as to whether secondary certification is acceptable or not is made by the responsible certification body in consultation with the holder of the basic certificate.

2.5. Risk evaluation

Certification bodies must maintain a risk management system for auditing, evaluation and decision-making. The risk management system must analyse the risk of the certificate-holder's non-conformity with the requirements of this standard. Risk assessment must take into account the following indicators as a minimum requirement:

a) Availability and quality of an internal quality management system

b) Number, scope and complexity of the products included in certification

c) Number and characteristics of energy carriers

d) Non-conformities identified in previous audits

e) Number of sub-contractors

The quantity and the level of thoroughness of the audit must be defined based on the results obtained in risk assessment. This concerns, as minimum requirements,

a. Audit type

b. Review of the measured data and original documentation

c. Review of business transactions (purchase / sale)

In addition, when establishing the audit intervals the Certification Body must define whether additional interim checks will be required in the 12-month period.

2.6. Materiality

The materiality of data is defined as follows: information is significant if the omission or incorrect statement or reporting of said information could lead to a different result of the evaluation. In light of the above, this standard defines the materiality level at 5 % of the quantity of energy sold or purchased.

2.7. Confidence level

Certification is based on a decision made with reasonable assurance in accordance with ISEA 3000. Certifications that are based on a decision with limited assurance are not accepted within the scope of this standard.

3. Requirements for certificate holders

3.1. Certification scope

The scope of certification must be documented in writing by the certificate-holder and forms the basis of the certification contract. Any change in the scope of certification must be applied for in writing. In this case, the application must include the following data:

- Product name(s);
- Customers (e.g. private households, business customers, special-contract customers)
- Sales region
- Option of support component

- Optional modules. For the “Regional sourcing” module, the region must be specified.

In this context, certificate-holders can also name further companies that they wish to include in the scope of the certification, such as:

- Electricity suppliers that sell the certified product (holders of sub-certificates);
- Power stations that do not hold own certifications;
- Service providers that carry out certification-relevant functions

To be included in the scope of certification, these companies must maintain contractual relationships with certificate-holders and comply with the relevant certification requirements.

3.2. Support of renewable energy

The organisation has set itself the objective of continuously increasing the share of renewable energy in its total energy mix or total delivered quantity of energy from renewable sources or the share of renewable energy among its private-household and commercial customers. The organisation has documented this objective either in its corporate policy or in an overall plan for increasing the share of renewable energy in its energy mix, which covers at least a 3-year period.

Organisations which already have a share of renewable energy exceeding 80 % in the energy they deliver to end-consumers are already in compliance with the above requirement.

Fluctuations in the share of renewable energy based on tendered deliveries or delivery quantities to special contract customers exceeding 50 GWh or 2 % of total sales to end-consumers are excluded from the determination of the share of renewable energy.

3.3. Organisation

The certificate-holder has appointed an Audit Representative. The Audit Representative submits all information needed for certification and is responsible for communicating the certification requirements within the company.

The organisation has established and documented the processes, roles and responsibilities for the provision of the product.

3.4. Purchase and acceptance process

The purchase process must ensure that suppliers provide a contractual guarantee that their energy carriers meet all the requirements specified for the green electricity products and that they can supply the documentation required to establish this fact. The acceptance process must ensure that suppliers provide the documents agreed in the delivery contract and that these documents are retained as specified.

3.5. Qualified electricity disclosure

The information and presentation provided for the electricity labelling of the green electricity product is in line with the law and consumer-friendly.

4. Requirements for the accounting system

4.1. Accounting period

The accounting period must be defined in the run-up to certification. The permitted accounting period must not exceed 12 months. At the end of these 12 months the energy account must not show a negative balance.

4.2. Ensuring a positive balance

100% of the electricity supplied to green-electricity customers must be covered by energy from renewable sources. The certificate-holder maintains a reliable procedure for ongoing monitoring and ensuring of a positive balance of the quantities purchased, stored and delivered. This procedure also considers possible deviations of the actual values from the forecasts and ensures that such deviations will not lead to a negative balance.

4.3. Simultaneous generation and consumption

Energy from renewable sources is generated and fed into the grid simultaneous to its consumption. Consumers and generators must be in the same interconnected grid. Compliance with the principle of simultaneous generation and consumption must be ensured throughout the entire process.

As a matter of principle, the shortest possible time unit must be selected, depending on the standard time unit of the national energy industry in the country of generation. If no data is available for the shortest time unit or the shortest time unit is not suitable for trading, compliance with the load profiles must be ensured at a minimum of hourly intervals. By way of exception, simultaneous generation and consumption is still considered fulfilled if power consumption exceeds the power supply in no more than three periods of a maximum total duration of 18 hours per year. Unforeseeable events which are beyond the certificate holder's control (force majeure) are excluded from the requirement of compliance with the principle of simultaneous generation and consumption.[2]

In addition, evidence of compliance with the principle of simultaneous generation and consumption must be provided for the entire supply chain.

If the simultaneously generated power is not purchased directly from TÜV SÜD certified power producers with the “Simultaneous generation and consumption” module (generation EE+), the brokers must either be included in the certification scope or certified according to the TÜV SÜD standard “Trading EE” including the module of “Simultaneous generation and supply”.

4.4. Maintenance of characteristics

The maintenance of renewables characteristics complies with the legal requirements.

4.5. Accounting system

4.5.1. General

The quantities of energy generated and/or purchased and the quantity of energy supplied and/or consumed must be documented in an accounting system. Entries are based either on bills (e.g. trade) or meter readings (e.g. consumption).

4.5.2. Credit entries

Renewable-energy credit entries in the certificate holder’s accounting system are effected on receipt of the energy and/or the relevant documentation within the boundaries of the accounting system. If certification differentiates between various qualities of the product (e.g. regional sourcing), the renewable-energy credit entry in the accounting system must also be differentiated according to these qualities. The quantities of the credit entries depend on the final bills and/or meter values. One credit entry may summarise the quantities received or generated during a maximum of one month.

4.5.3. Debit entries

Debit entries from the certificate-holder’s accounting system are effected upon the sale of the electricity product and its entry in the energy accounting system and/or consumption of the renewable energy. One debit entry may summarise the quantities sold or consumed during a maximum of one month. Various product qualities (e.g. regional sourcing) require quality-specific documentation of debit entries. The quantities of the debit entries depend on the final bills (trade) and/or the meter values (consumption).

4.5.4. Use of forecast values

If no final billing data are available in the accounting period or if reading of electricity meters is only performed once a year, the above entries can also be effected on the basis of conservative forecasts.

[2] E.g. within this certification, rare flooding (HQ_{10}) is considered an unforeseeable event.

4.5.5. Updating of forecast values

When entries are based on forecast values, the conservative nature of these forecast values must be verified once the final data are available. If necessary, the calculation of the forecast values must be changed to ensure that differences between forecast values and actual values can be corrected in the next accounting period at the latest.

4.5.6. No double counting

The accounting system must be suitable for excluding double counting of renewable energy as a general principle.

5. Requirements for renewable energy

5.1. Verification systems

If a national register of guarantees of origin as defined in Directive 2009/28/EC has been placed into service, proof that the delivered electricity originates from renewable sources of energy must be provided through cancelled guarantees of origin from the respective national register.

The quantity of cancelled guarantees of origin from a month of production must equal the consumption in the preceding month (monthly cancellation).

If no such national register exists, the origin from a renewable source of energy must be established through:

a. Assessment of generation within the scope of certification of the green electricity product according to the TÜV SÜD standard "Generation EE"; or

b. Certification of electricity according to the TÜV SÜD standard "Generation EE" or a similar standard.

5.2. Net energy principle

Only quantities of energy from renewable sources that were verifiably generated according to TÜV SÜD's net energy principle are recognised. This criterion is fulfilled if the purchased power has been certified according to TÜV SÜD Standard Generation EE including module EE+. If there are no data on the power demand of the power station, a flat-rate consumption of 2 % of the amount of power delivered for the power product must be assumed. If the flat-rate percentage is applied to the power station's own power consumption, the corresponding guarantees of origin must be obtained in addition and cancelled for the green electricity product.

5.3. No double counting

5.3.1. Double counting based on support schemes

Quantities of electricity subsidised to support expansion of energy from renewable sources cannot be certified. Given this, electricity for which feed-in remuneration is paid and/or its guarantees of origin cannot be accepted. Electricity derived from plants supported by investments and/or the guarantee of origin of this electricity are accepted. Unsubsidised electricity which is sold directly from plants eligible for subsidies can be taken into account. Subsidised quantities of electricity that are physically allocated to the consumers can be recognised on a pro-rata basis and need not be purchased otherwise.

5.3.2. Double counting at the supplier

As a matter of principle, guarantees of origin that are obtained separately from the delivery of electricity are only accepted from countries of origin where qualified electricity disclosure (electricity labelling) is mandatory. Guarantees of origin from countries where electricity labelling is not mandatory will only be recognised if the supplier can furnish proof of a valid method of electricity labelling certified by a recognised third party and in which the feedback of the certificate holder's electricity mix (without guarantee of origin) will be included.

5.3.3. Double counting in qualified electricity disclosure (QED)

If green electricity of different qualities was supplied, specific cancellation of the guarantees of origin must be ensured. Either the relevant electricity tariff / green-electricity offer or the relevant end-consumer / supply quality of green-electricity supply must be named explicitly as the purpose of cancellation. Unspecified cancellations

of guarantees of origin must be assigned to the residual mix and cannot be used as evidence of green-electricity certification.

5.4. Additional support requirement

At least 75% of any increases in the price of the green electricity product compared to conventional electricity products and/or increases in price of the green electricity product that are not justified by the purchase, support or costs of generation and certification of energy from renewable sources must be spent on climate-change projects, in particular the expansion of energy from renewable sources (subsidies).

Other support models are also possible following a case-by-case review, provided they meet the support criteria outlined above.

5.5. Use of subsidies

Subsidies must be invested promptly. Appropriate support projects must be implemented at 1- to 3-year intervals depending on the amount of annual subsidies. The use of subsidies must be governed both by support regulations and a support plan regulating how and when to invest and in which projects. The support plan must be updated annually. Section 5.6 includes a whitelist of support measures.

Proper accounting of the subsidies received and spent must be ensured.

Subsidies realised during certification must be used in accordance with the certification standard even after expiry of the certification.

5.6. Whitelist of support measures

The following support measures meet the requirements of this TÜV SÜD standard as a general principle:

- Establishment of new plants/installation for power generation from renewable sources. These plants/installations may be subsidised by the government, provided the subsidies received minus the ongoing costs of operation are reinvested as subsidies; income from potential extra charges for landlord-to-tenant electricity supply is excluded;
- Establishment of new plants/installations for heat generation using energy from renewable sources;
- Rehabilitation of plants that meet the criteria of the TÜV SÜD “Generation EE” standard, “EE new" module;
- Purchase and retirement of certificates from recognised climate-change projects (e.g. CER, ERU, Gold Standard, VCS) including plants/installations for the generation of renewable energy; retirement of the certificates required for offsetting must be done by naming the purpose and the period;
- Support schemes for heat pumps following energy consultancy;
- Support schemes for solar thermal energy;
- Support schemes for distributed power-storage systems under 50kWh;
- Support schemes for charging systems for electric vehicles (e.g. wall boxes);
- Support schemes for the installation of smart metres at point-of-energy accounts (PoEAs) with an annual consumption of under 30,000 kWh;
- Establishment of new distributed power-storage systems, provided any share financed by public or other funding bodies accounts for less than 30% of the investment sum;
- Establishment of new electromobility charging points, provided any share financed by public or other funding bodies accounts for less than 50% of the investment sum;
- Research projects in technologies of the future aimed at supporting the further integration of energy from renewable sources in the electricity market (e.g. new storage technologies, intelligent networking/control of generators and consumers). The funding of research projects must be reviewed and approved in advance by the “Climate and Energy” certification body of Industrie Service GmbH.

Subsidies from support measures may also be spent on government-subsidised plants/installations (e.g. feed-in tariffs according to the EEG, KEV or Oemag, El-Cert).

However, the plants/installations financed by subsidies must re-invest as subsidies

- income from the subsidised plants (minus the ongoing operating costs), or
- the invested subsidies within 15 years with a nominal annual interest rate of 3%, or,
- in the event that the plant was rented out, the amount of rent earned, as reasonable.

6. Optional modules

The following modules are optional. Compliance with these modules is identified separately in the certificate.

6.1. Regional Sourcing module

6.1.1 Regional Sourcing Option 1 – Power generation in NUTS-1 region:

To meet the requirements of the optional Regional Sourcing module, at least 50 % of the quantity of energy from renewable sources used for the electricity product in the accounting period must have been produced in the same NUTS-1 region where it is consumed. This must be proved by furnishing appropriate guarantees of origin. Compliance with the "Regional Sourcing" module is not required for every quarter of an hour.

6.1.2 Regional Sourcing Option 2 – Power generation as defined in HkRNDV

To meet the requirements of the optional Regional Sourcing module, at least 50 % of the energy from renewable sources used for the electricity product in the accounting period must have been produced in the same region according to HkRNDV where it is consumed. This must be proved by furnishing appropriate guarantees of origin. Compliance with the "Regional Sourcing" module is not required for every quarter of an hour.

6.2. CO_2 Offsetting module

100 % of the greenhouse gases caused by the production of electricity from renewable sources are offset by carbon emission reductions (CERs) from recognised climate-change projects. The greenhouse gas emissions caused must be calculated by recognised methods that also take upstream chains into account. The certificates of emission reduction (CERs) for CO_2 offsetting must be contractually assured in advance on the basis of plausible and conservative forecasts. The CERs needed to compensate for the emissions must be retired in the respective registry. This must be done within 3 months after the end of the accounting period at the latest. The retirement must be clearly referenced to the green electricity product and the relevant accounting period. Climate-change projects are considered recognised if certified in the CDM, JI, Gold Standard or VCS systems.

6.3. Physical Delivery module

The “Physical Delivery” module is based on the assumption that the power plants/installations feed the generated power into a power-balancing group comprising only plants/installations for energy from renewable sources. If this power is sold or passed on to traders or distributors, they too need to be entered into a power-balancing group which only includes electricity from renewable sources. Green-electricity customers thus must be supplied from a green-power-balancing group. Only offsetting energy of up to 15% of the total annual supply quantity is permitted. However, this does not affect the requirement that total electricity supply to green-electricity customers must be covered by adequate amounts of renewable energy as set forth in Section 4.2 and that the requirement of simultaneous generation and consumption as set forth in Section 4.3 must be satisfied for the entire amount of energy delivered.
In contractual terms, the electricity and the guarantees of origin for renewable energy must be marketed together. The total supply chain of power generation plants/installation up to the end-consumer forms part of the certification scope. Swap transactions are not permitted for the “physical” delivery of electricity.