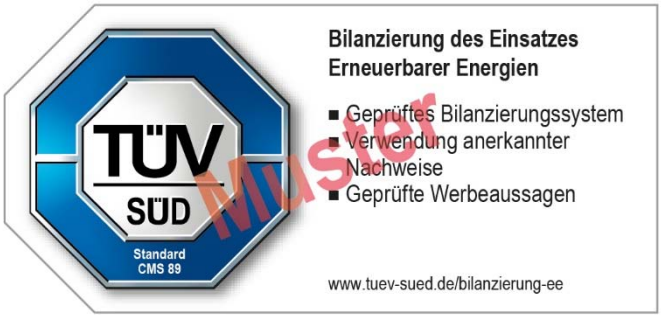
TÜV SÜD standard

Industrie Service

Certification of Accounting Systems for Energy from Renewable Sources

(Abbreviated as: Accounting EE)



Version 08/2018

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1. Scope

This standard applies to the certification of accounting systems for energy from renewable sources. This certification offers companies the opportunity to make their use of renewable energy transparent and verifiable and enable credible communication to third parties.

The standard covers a variety of renewable energy carriers in the form of heat, cold, electricity, hydrogen, biogas/biomethane and mechanical energy.

The certification is suitable for a wide range of different companies, including

- Energy supply companies
- Energy distributors
- Manufacturing companies / service companies
- Wholesale or retail locations
- Suppliers of mobility and transport services or products (electric mobility, EcoMobility, fleet operators)

This standard lays down the process-related requirements that are necessary for the implementation and maintenance of accounting systems and for meeting the data-quality requirements that will be included in accounting.

System certification is performed to verify compliance with the standard. In the event of a positive result, TÜV SÜD issues a system certificate. The certificate shows that the organisation has established a reliable quantity accounting system for renewable energies which ensures that the quantity of energy procured covers the quantity of renewable energy consumed or used. The certificate also confirms whether energy use is fully or partly covered by renewable energy.

For trading transactions with renewable energy, optional product certification can be performed for the traded energy products. Product certification and data verification are performed to verify compliance with the standard.

In the event of a positive result, TÜV SÜD issues a product certificate.

The essential requirements of the standard refer to the quantitative use of renewable energy. If the accounting system includes additional characteristics of renewable energy carriers, these additional qualities can also be verified under the scope of this standard and included in the system certificate. Such additional characteristics can refer to aspects such as greenhouse-gas emissions, certain technologies, origins of or feedstocks used to produce energy carriers.

This certification standard also defines the requirements for advertising messages related to certification. The requirements differentiate between system certification with and without certified characteristics and product certification.

This standard does not enable any advertising statements to be made on the sustainability of the renewable energy used.

Term and validity

This standard *(Version 05/2018)* will come into effect on 01/06/2018.

Following the introduction of a revised standard, certificate holders are granted a transition period of 12 months up to the next re-certification audit, 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.

Justified exceptions to this rule may be accepted on request by the Certification Body for "Climate and Energy" of TÜV SÜD.

2. Normative references

a. Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and its amendments. - hereinafter Renewable Energy Directive

b. International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information

c. ISO 19011:2011: Guidelines for quality and/or environmental management system auditing

d. ISO/IEC 17065:2012 Conformity assessment – Requirements for bodies certifying products, processes and services.

e. Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard / Revised Edition

f. Greenhouse Gas Protocol, Product Life Cycle Accounting and Reporting Standard, September 2011

g. ISO 14067:2013: Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification and communication

h. British Standards Institution et al. PAS 2050:2011: Specification for the assessment of life cycle greenhouse gas emissions of goods and services

i. Life Cycle Analysis LCA (ISO 14040: Environmental management – Life cycle assessment – Principles and framework

j. ISO 14044: Environmental management – (Life cycle assessment – Requirements and guidelines)

3. Terms and definitions

3.1. Renewable energy

Energy carriers defined as renewable energy in the currently applicable legislation: Hydropower including wave, tidal, salinity gradient and marine current energy; wind energy; solar radiation energy; geothermal energy; energy from biomass including biogas, biomethane, landfill gas and sewage treatment gas, and from the biologically degradable parts of waste from households and industry.[1]

3.2. Biogas

Gas defined as biogas in the currently applicable legislation:
Biomethane, gas from biomass, landfill gas, sewage gas and mine gas as well as hydrogen derived from the electrolysis of water and synthetically produced methane, if the major part of the electricity used for electrolysis and the major part of the carbon dioxide or carbon monoxide used for methanisation are established as coming from renewable sources as defined in Directive 2009/28/EC.[2]

3.3 Green hydrogen

Green hydrogen is hydrogen produced and certified according to TÜV SÜD's GreenHydrogen standard.

3.4 Greenhouse gases

See “Glossary” of the Greenhouse Gas Protocol

3.5. Region

A continuous territory in a first-level NUTS-1 region defined by the certificate-holder[3]. Deviation from the boundaries of the first-level NUTS regions is acceptable with approval from the Certification Body.

[1] Renewable Energy Sources Act
[2] Energy Industry Act

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

3.6 Regional sourcing

At least 50 % of the energy consumed at one point of use in the accounting period is produced in the region where it is consumed.

3.7 Simultaneity for electricity

Electricity from renewable energy is generated and fed into the grid simultaneously with its consumption. Consumers and generators must be in the same interconnected grid. The quantity of electricity generated and fed into the grid per time unit may exceed the electricity consumed in the same time length. Compliance with the principle of simultaneity must be ensured throughout.

3.8 Low-carbon energy / fuel

Low-carbon energy is recognised as such if the carbon load is under 350 g CO_{2e}/kWh[4] in the case of electricity, under 220 g CO_{2e}//kWh in the case of heat, and under 41.9 g CO_2e/MJ[5] in the case of fuels. The upstream chains must be considered. Electricity and heat from waste incineration plants or industrial waste heat are also recognised as low-carbon energy.

3.9. 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.

4. Principles

4.1 Accuracy

The requirements imposed on the measuring system and the degree of compliance with these requirements are documented in the company's quality management system (choice and locations of measuring instruments, regular inspection, e.g. calibration, etc.). The quality management system also covers plausibility checks and actions to be taken to address non-conformities. Where necessary data are missing and the exact determination of such data would involve unreasonably high efforts, conservative estimates of these missing data shall be used.

4.2. Principle of materiality

The principle of materiality is an auditing principle used to classify incorrect information made by an audited company. Information is significant if it may result in consumers making incorrect assumptions about the certified product. According to the principle of materiality, the certification process must be designed in such a manner that all significant non-conformities will be uncovered and that non-reviewed data cannot include any major non-conformities

4.3. 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.

4.4. Conservativity

Conservative assumptions are made to prevent underestimation of the quantity of renewable energy needed with reasonable assurance

[4] Gemis (Version 4.8.1)- specific emissions of a modern gas-fired combined-cycle power station with a capacity of 450 MW.

[5] Corresponds to 50 % of RED 83.8 g/ CO_2e/MJ

5. Requirements for the certification scheme

5.1. General

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

5.2. 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 hold recognition as a certification body under the Renewable Energy Directive).

5.3. Requirements for the certification process

5.3.1 Certification process

The certification process comprises certification audits and surveillance audits. Certification audits focus on the auditing of systems, processes and tools, while surveillance audits primarily assess and/or verify (product certification) quantities and their documentation in the accounting system as well as possible changes compared to the certification audit. The certification cycle comprises a certification audit, a first surveillance audit (depending on the risk involved, at least one audit within 12 months of the certification audit) and a second surveillance audit (depending on the risk involved, 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 (depending on the risk, within 12 months of the 2nd surveillance audit at the latest).

5.3.2 Secondary certificates

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

5.3.3 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, production sites and branches included in the certification
c. Number and characteristics of forms of energy or energy carriers

d. Non-conformities and minor non-conformities from previous audits
e. Number of subcontractors

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, the certification body must establish the audit intervals and define whether additional interim checks are required.

6. General requirements for the certificate-holder's organisation

6.1. Certification scope

Certificate-holders must document the scope of certification in writing, append the scope to the application for certification and submit it to the certification body.
The certification scope can be restricted to production sites, production lines, branch offices and clearly definable product and service segments.
The certification scope can be restricted to those forms of energy (electricity, heat/ cold, mechanical energy) that cover more than 75% of the entire energy demand of the subject-matter of the certification.
To change the scope of certification, a new application must be submitted to the certification body. Based on materiality and confidence level, the certification body then decides on a case-by-case basis whether, and if so to what extent, a new on-site audit will be necessary.

6.1.1 Products and services

All products and services included within the scope of certification must be specified.

6.1.2 Certification statements

The statements that the organisation wishes to communicate in the context of certification must be specified.

6.1.3 Organisation

All subsidiaries, premises, production units, other related companies or external service providers involved in the implementation of the standard must be identified, documented and involved in the certification process. This applies in particular to:

- Purchase and transport of renewable energy
- Accounting
- Account management
- Data recording
- Retail / sales
- Generation of renewable energy
- Consumption of energy

Documentation of the certification scope must include the following information as a minimum requirement:

- Name(s) of the company/companies included in the scope
- Functions
- Role within the scope of implementation of the standard
- Roles and responsibilities

6.1.4 Accounting area

The boundaries of the accounting area must be defined.
EXAMPLES Natural-gas grid – Germany, natural-gas grid – Germany + Denmark, railway grid – Germany

6.2. Contractual integration of third parties

The certificate-holder has concluded contractual agreements governing this standard with the companies included in the scope of the certificate (see 6.1.3) The contractual agreements include an obligation to implement and ensure compliance with this standard and the written consent to provide the personnel of the certification body with access to all necessary premises and ensure provision of the necessary documents and information.

7. Requirements for the accounting system

7.1. Accounting period

The accounting period must be defined in the run-up to conformity assessment. 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. A positive balance may be carried forward to the next accounting period, taking into account the maintenance of characteristics (see 8.3).

7.2. Ensuring a positive balance / monitoring

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. The certificate-holder further maintains processes or contracts which ensure that the right quantities of renewable energy in a sufficient volume will be procured and/or produced in line with the forecast sale.

7.3. Accounting system

7.3.1 General

The quantities of energy purchased and the quantities of energy delivered and/or consumed must be documented in an accounting system. Entries are based either on bills (trade) or meter readings (consumption). Principle 4.1 “Accuracy” must be observed when using meter readings (consumption).

7.3.2 Credit entries

Renewable energy credit entries in the certificate holder’s accounting system are effected on receipt of the energy in the relevant accounting grid. If certification differentiates between various product qualities, 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 (trade) and/or meter values (generation). One credit entry may summarise the quantities received or generated during a maximum of one month.

7.3.3 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 accounting grid 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 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).

7.3.4 Allocation

If renewable energy or its characteristics are allocated to selected customers, products or services and if recording of these quantities is impossible, allocation may be performed on the basis of conservative calculations.

7.3.5 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 and not on the same date, the above entries can also be effected on the basis of conservative forecasts.

7.3.6 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. Differences between the forecast and actual value must be corrected in the following accounting period at the latest.

7.4. No double counting

7.4.1 General

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

7.4.2 Recognition of subsidised energy

Consideration of the renewable energy in energy quotas (e.g. biofuel quotas) is not permitted.
Electricity from renewable sources subsidised by production support schemes is not recognised.
Heat from renewable energy or biogas subsidised by production support schemes can only be recognised if the certificate-holder spends at least 0.4 eurocent/kWh for every type of energy used on the support of renewable energy. This does not affect the right to make use of tax reliefs.

7.4.3 Customer communication

In the case of allocation to selected customers, communication of a total quantity of used or sold renewable energy is only permitted if it does not give rise to the impression that every product sold contained a certain amount of renewable energy.

7.4.4 Double counting for electricity and gas/heat supplies

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 qualified electricity disclosure (electricity labelling) is not mandatory will only be recognised if the supplier can furnish proof of a recognised and valid method of qualified electricity disclosure (electricity labelling) certified by a third party and in which the feedback of the certificate-holder‘s electricity mix (without guarantee of origin) is included.
As a matter of principle, guarantees of origin that are obtained separately from the gas supply are only permissible if steps are taken in the country of origin to ensure that the renewable characteristics have not already been allocated to consumers via another route (e.g. via the national gas accounting system broken down by energy carrier).
In a district or local heating system, renewable energy may only be allocated to certain consumers in line with the applicable national regulations. The remaining quantity of heat for the other consumers must be corrected accordingly and identified (e.g. the primary energy value).

8. Requirements for the renewable energy in the accounting system

8.1 General requirements

The characteristics of the renewable energy must be documented by means of recognised verification systems or checked within the scope of certification.
At least 50% of the energy carriers used must come from renewable energy. The remaining part, except for fuels, must come from low-carbon energy.

8.1.1 Verification systems for electricity from renewable sources of energy

The characteristics of the consumed / traded renewable electricity are documented in the legally recognised register of guarantees of origin in each case.
If there are no legally recognised registers of guarantees of origin in a country of origin or if the registers of origin cannot be used in a case of application, other evidence (e.g. qualified electricity disclosure plus green electricity product or green electricity product certification) must be presented which prove that the relevant characteristics have been verified by an environmental verifier or accredited certification body.

8.1.2 Verification systems for biomethane or synthesised methane

Availability of excerpts from the biogas register or other evidence which furnish proof of verification of the relevant characteristics by a verifier or recognised certification body. Compliance with the principle of dual control (four-eyes principle) is taken for granted.

In addition, reviewed greenhouse-gas accounting) must be available for CO_2 emissions of under 150.8 g CO_2e/kWh,[6] taking upstream chains into account.

8.1.3 Proof for heat from renewable energy

Availability of legally regulated evidence of heat/cold from renewable sources of energy or other suitable proof that furnish evidence of the verification of the energy-carrier mix by a verifier or an accredited certification body.

8.1.4 Verification system of additional characteristics

Additional characteristics of the traded and/or consumed energy from renewable sources can be identified in the audit documentation and the certificate. The decision on the matter rests with the certification body. The prerequisite is the submission of an expert report by a recognised and competent verifier or of a certificate that furnishes evidence of compliance with these characteristics.

EXAMPLES

- Electricity produced in power plants/installations certified by TÜV SÜD according to the “Generation EE” standard.
- GreenMethane from waste
- Electricity production according to the TÜV SÜD standard Generation EE, including compliance with the new-plants/installations requirement
- Regional sourcing
- Simultaneity

8.1.5 Verification system for fuels

The use of fuels requires availability of sustainability certificates as defined in the Renewable Energy Directive and identification of at least 50% carbon reduction and/or the savings regulated in the RED compared to the fossil reference value.

8.1.6 Evidence of generation in the scope of certification

Alternatively to 8.1.1 - 8.1.3, energy production and the characteristics of renewable energies can be considered in the scope of certification. The relevant TÜV SÜD standards must be considered in this context[7]. Controls must be performed at regular intervals (risk-based, at least once annually).

8.2. Purchase and acceptance process

The purchase process must ensure that suppliers provide a contractual guarantee that their energy carriers meet all the characteristics specified in the scope of the certificate 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.

8.3. Maintenance of characteristics

The maintenance of renewables characteristics complies with the legal requirements.

9. Communication and use in advertising

Advertising statements in the context of certification must communicate the share of renewable energy explicitly if under 100%. Compliance with the Testing and Certification Regulations of the TÜV SÜD Group must be ensured in all cases. Certification marks may only be used by the certificate holder.

[6] corresponds to 50% of the RED reference value related to kWh (lower calorific value)

[7] Generation EE, Generation EE+, Generation GM, Generation GH

10. Optional certification of greenhouse-gas accounting

Greenhouse-gas accounting of a defined product, service and/or energy must meet the requirements of life-cycle assessment (LCA) according to ISO 14040 and ISO 14044. The LCA requirements can be considered fulfilled if accounting was performed according to GHG Protocol, ISO 14064, ISO 14067 or PAS 2050.

Certification of GHG accounting is not permissible if the product or service to be certified used allocation in line with Section 7.3.4 hereunder.

The greenhouse gas emissions inventory of a company, organisational unit or other type of organisation and its determination and documentation must meet all principles and requirements defined in the version of the GHG Protocol (Corporate Standard) as amended at the time of certificate issue.

Accounting, particularly all assumptions and allocations carried out for calculation purposes in GHG accounting, must be documented in writing.

11. Optional certification of regional sourcing

At least 50% of the energy used in the certification scope and in the accounting period is produced and consumed in the same region. In this context, it is irrespective whether this quantity of electricity is generated in new plants or not.

12. Optional certification of simultaneity of generation and consumption

Certification of simultaneity is only possible if 100% of electricity consumption is covered by energy from renewable sources.

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, simultaneity 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) [8], are excluded from the requirement of compliance with the principle of simultaneity.

In addition, evidence of compliance with the principle of simultaneity must be provided along the entire chain of custody.

If the simultaneously generated power is not purchased directly from TÜV SÜD certified power producers, the brokers must either be included in the certification scope or certified according to the TÜV SÜD standard "Trading EE" including the module of simultaneity.

13. Optional certification of greenhouse-gas offsetting

Certified emission reductions (CERs) from recognised climate-change projects in the field of renewable energy must be used to compensate for accounted GHG emissions. The CERs used for offsetting have a validity of up to 10 years following on the calendar year of emission reduction. The CERs used to compensate for the emissions must be retired in the respective reg-

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

istry. Climate-change projects are always considered recognised if certified in the CDM, JI, Gold Standard or VCS schemes. However, according to Article 11 a (1 - 5) EHRL, the following certificates are not recognised:

- CERs and ERUs from HFC-23 and adipic acid projects, and
- ERUs generated after 30 April 2013 which refer to emission reductions from 2008-2012 and originate from JI projects with activities that have been newly added to the EU-ETS in 2013, and
- ERUs generated from 1 January 2013 which refer to emission reductions from 2008-2012 and were generated by a country that did not enter into any Kyoto obligations from 2013-2020 if, further, the project was not verified by an Accredited Independent Entity according to the track-1 method.

Beyond the restrictions outlined above, CERs and ERUs of the 2nd Kyoto commitment period from 2013 to 2020 can be recognised if the CERs or ERUs originate from projects that had been registered before 1 January 2013 or projects in Least Developed Countries (LDC) registered from 2013 onwards.[9]

The purpose of CER or ERU retirement must refer as clearly as possible to the certificate holder, the product, the final customer and the associated accounting period. Where this is not ensured, the certificate-holder must maintain an accounting system for CER and ERU retirement which rules out without any doubt that retired certificates may be used twice.

[9] The current versions of the positive and negative lists of international projects published by the EU Commission shall also be taken into account.

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Annex: Change history

- Inclusion of further forms of energy, e.g. heat, hydrogen
- Permissibility of covering 50 to 100% of energy use by renewable energy.
- Inclusion of greenhouse-gas accounting
- Inclusion of optional qualities, such as simultaneity, regional sourcing, greenhouse-gas offsetting
- Additional terms and definitions
- Changes regarding recognition of energy subsidised by support schemes.