

TÜV NORD CERT Standard for the verification of greenhouse gas declarations and the financial contribution of climate protection projects (TN-CC 020)



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Introduction

This standard defines requirements for the verification of greenhouse gas declarations and the financial contribution of climate protection projects through the purchase of certificates for a large number of units by TÜV NORD CERT GmbH.

In addition, steps and requirements for issuing a certificate and a verification mark are covered under this standard.

This standard only applies to greenhouse gas declarations that have been calculated on the basis of internationally recognized standards for the quantitative determination and reporting of greenhouse gases. Therefore, the user of this standard must comply with the requirements specified in this standard and the requirements of the accounting and reporting standard used. In the event of inconsistencies between the respective standards, the approach that produces the more conservative greenhouse gas values shall be applied.

1. Basic requirements for verification

1.1. Level of assurance

The level of assurance applied shall be reasonable.

1.2. Reduction and compensation of greenhouse gas emissions

In general, the aim is to avoid and reduce greenhouse gas emissions. Only when emissions can no longer be avoided and reduced can offsetting in the form of financial support for climate protection projects be considered.

In this standard, the word "offsetting" is used to refer to voluntary financial support for climate protection projects.

While offsetting through investments in climate protection projects (CO_2 certificates) is recognized according to this standard, the following measures of own offsetting (carried out by the subject under consideration) are not recognized:

- Forests including creation and renaturation as well as afforestation measures through land use and land use changes
- Revitalization of forest moors
- Carbon capture and storage (CO₂ sequestration and CCS)
- Sequestration in the soil

The compensation can be done **ex-post**, i.e. after verification of the carbon footprint or **ex-ante**, based on an extrapolation of the available data.

In addition, it must be ensured that the greenhouse gas emissions have been fully offset in the reporting period as soon as historical data and information is available. Even if the contractual basis of the verification between TÜV NORD CERT GmbH and the client is terminated, this is ensured by a retrospective verification before the termination of the contractual relationship.

If the follow-up verification reveals that a lower amount of greenhouse gas emissions was offset than actually emitted, the difference must be offset by further compensation. In the event that a higher amount of greenhouse gas emissions has been offset, this excess of certificates can be credited for the upcoming follow-up verification(s), provided that the requirements for certificates are still met.

1.3 Greenhouse gas or documentation report

The client shall submit a greenhouse gas or documentation report for the verification. The report shall contain the following information:

- name of the organization
- reporting period and accounting standard used
- objective(s) and scope of the verification (including considered emissions sources and emission categories, locations, if applicable, products)
- justification of excluded emissions (if applicable)¹
- methodologies applied (for data gathering/evaluation/ analysis)
- product launch date (if applicable)
- description and justification of the product emission factor (so-called functional or declared product unit, if applicable)
- description of any forecasts and assumptions (if applicable)
- information on secondary data used (e.g. emission factor sources)
- greenhouse gas emission results, shown as one number and shown as emissions broken down by Scope (according to the applied accounting and reporting standard)
- uncertainty assessment (if applicable)
- List and description of the measures to avoid and reduce greenhouse gas emissions (mandatory when preparing the initial balance)
- Description and type of CO₂ compensation (if applicable)

1.4. CO₂ certificates

A large number of CO_2 certificates and climate protection projects for offsetting greenhouse gas emissions are offered in the compliance market. For this standard, only certificates that have verified by an independent third party² and are subject to a quality standard³ are accepted as compensation.

In addition, for certificates with identification of a year (vintage) or assigned serial number, it applies that they shall **not be older than 10 years**, starting from the reporting period claimed (with full years). If there is only a period instead of a fixed year and an allocation to a specific year is not possible, the middle of the period is defined as the corresponding year for the certificate (rounded down if necessary), example: period 2015 to 2020; relevant year according to this standard: 2017.

¹ Emission sources estimated to constitute less than 1 % may be excluded on that basis alone; however,

the quantified carbon footprint shall cover at least 95 % of the emissions from the subject.

² It should be noted that TÜV NORD CERT GmbH does not check the effectiveness of the financially supported climate protection projects. These merely have to meet the requirements of the standard in order to be used

Ensures that the reduction of greenhouse gas is permanent, real, measurable, unique, additional and that double counting is avoided.

For calculation data for the year 2026, the vintages must not be older than 5 years from the reporting period shown.

Below is an overview of the quality standards, certificates and project types that are accepted for compensation, including any restrictions:

STANDARD	CERTIFICATE	PROJECT TYPE	ACCEPTANCE	
VCS Gold Standard	VCU renewable energies, en		without restrictions	
CDM ⁴	CER	renewable energies, energy efficiency, fuel switching, agriculture, transport		
		forests/forestry	only if biodiversity and stakeholder participation analogous to VCS and GS	
EU-ETS	EUAs	N/A	without restrictions	
PlanVivo	PVC	forests/forestry	only ex-post PVCs	

A combination of the aforementioned quality standards with so-called additional standards such as Climate, Community and Biodiversity (CCB) is possible and is also accepted. The following project types to offset greenhouse gas emissions, however, will not be accepted:

nuclear energy

- Iand use and land use change
- destruction of industrial gas (HFKW-23, N20)
- palm oil sector and geological CO₂ sequestration

In order to address the risk of double counting of emission reductions or CO₂ certificates, the compensation shall be proven by cancellation of certificates in the relevant registers⁵ or by means of decommissioning confirmations.

1.5 CO_2 compensation in the supply chain

A CO_2 compensation in the supply chain can reduce the amount of emissions to be offset. The prerequisite is that the compensation is recognized by the verifier. The compensation has no influence on the quantification of a carbon footprint.

⁴ May be replaced by another standard in a post-Kyoto phase by the Paris Agreement.

⁵ E.g. Environmental Registry, Gold Standard Impact Registry, Verra Registry, UN Carbon Offset Platform, Union Registry

2. Specific requirements for verification



2.1 Verified Carbon Footprint and financial climate contribution: Organization

In order for an organization to receive the certification mark, at least 95% of the total greenhouse gas emissions of the selected system boundaries must be taken into account when quantifying the Carbon Footprint. Direct emissions and indirect emissions of the organization (Scope 1 and 2) are mandatory.

2.2 Verified Carbon Footprint and financial climate contribution: Product

To obtain the certification mark for a product, the Carbon Footprint must be quantified by selecting one of the following reporting limits:

- cradle-to-gate
- cradle-to-grave

Within the selected reporting boundary, only those emission sources are to be accounted for that are directly related to the product and are considered to be material, provided that **at least 95%** of the greenhouse gas emissions are taken into account.

The product carbon footprint must be calculated based on a **product emission factor**. In principle, the factor **has to be recalculated** in the course of each verification. An exception to this principle of recalculation is possible if there are **no sig-nificant changes** in the input parameters, the methodologies used and the allocation process for the product-specific inputs and outputs.

2.3 Verified Carbon Footprint and financial climate contribution: Service/ Event

The requirements for a service are similar to those defined for products, see Chapter 2.2.

In order to claim the certification mark for an event, at least 95% of the total greenhouse gas emissions of the event must be taken into account. Direct and indirect emissions as well as at least the arrival and departure of participants, material requirements (e.g. flyers, brochures, posters) and outsourced services (e.g. accommodation, meals) must be taken into account, if applicable.

If the certification mark for holding the verified event is to be used for marketing purposes before the event actually takes place, verification must be carried out before the date of the event. Therefore, a forecast of the event's carbon footprint must be calculated using reasonable and conservative assumptions. If this forecast is assessed as reasonable and comprehensible by TÜV NORD during the pre-verification, 120% of the calculated CO_2 emissions must be accounted for. If pre-verification is successful, the certification mark is awarded to the organizer or client. After the event, the CO_2e footprint must be recalculated and submitted for verification in order to ensure that the actual CO_2e footprint of the event is verified.

2.4 Verified Carbon Footprint and financial climate contribution: Gas product/ Combustion

In order to claim the test mark for a gas product, the corresponding carbon footprint must be determined by **selecting one of the following** reporting boundaries:

- gas combustion: Quantification of all emissions with respect to the gas combustion
- gas product: Quantification of all emissions with respect to the gas combustion as well as all relevant previous emissions caused by exploration, extraction, processing, transport, storage and distribution

In the event that a "rolling system" is used for the annual reading of the consumption meters by the gas supplier, the final consumption figures are only available one year after the end of the reporting period. Therefore, as part of the verification, in addition to the date from the previous reporting period and the forecast for the upcoming period, the final consumption figures for the penultimate reporting period must also be checked. If the gas customer wishes to terminate the contract with the gas supplier, the gas supplier must ensure that the final consumption figures for the respective reporting period can be checked.

2.5 Verified Carbon Footprint and financial climate contribution: Building

There are four types of verifications for the building sector. The table below contains an overview of the verification cycle for each verification and the associated reporting boundaries.

	VERIFICATION CYCLE	REPORTING BOUNDARY	
Verified Carbon Footprint and financial climate contribution: building construction	one-time after construction	production of materials	
Verified Carbon Footprint and financial climate contribution: building operation	annual verification	operation of a building over a period of one year	
Verified Carbon Footprint and financial climate contribution: building	see "Carbon neutral building construction" and "Carbon neutral building operation"		
Net-Zero-Emission-Building	one-time verification after completing the detailed design or operated over one year	power maintenance of a planned building that operates as carbon neutral over a period of 1 year	

In the following subchapters, the different verification schemes are described in detail.

To avoid environmental impacts other than greenhouse gas emissions and to guarantee a maximum level of guality and user acceptance, in addition to the general requirements in this standard a certified building needs to meet the following conditions:

- 1. Reduction or avoidance of materials, mixtures and products that contain or release substances with a potential risk to the environment (groundwater, surface water, soil and air).6
- 2. Preferred use of wood from national or sustainable forestry.
- 3. Reduction of water demand and the disturbance of the natural water cycle.
- 4. Indoor hygiene, taking into account the prevention of formation of volatile organic compounds and the reduction of hazardous fire gases and indoor air quality.
- 5. Minimization or avoidance of adverse environmental impacts through the construction process.7

To avoid a reduction of emissions through a disproportionate use of insulation materials, the greenhouse gas emissions for the production of the insulation material must be lower than the forecast emissions saved during the future construction use period.

2.5.1 Verified Carbon Footprint and financial climate contribution: Building construction

Greenhouse gas emissions include: all materials within building construction and building technical installations8, the building without external plants and installations, including their production and installation or deconstruction and utilisation or recycling processes on construction-site including excavation works.

2.5.2 Verified Carbon Footprint and financial climate contribution: Building operation

Greenhouse gas emissions include: heating, hot water, auxiliary energies, ventilation, air conditioning and lighting including auxiliary energy for renewable energy production

E.g. halogenated or partially halogenated refrigerants and foaming agents, heavy metals, organic solvents, and substances and mixtures according to Biocide Directive and CLP-/REACH-Regulation

including domestic power use. If applicable, maintenance and repair of equipment and technical installations9 should be included additionally.

2.5.3 Verified Carbon Footprint and financial climate contribution: Building

This verification comprises Carbon neutral building construction and Carbon neutral building operation.

2.5.4 Net Zero Emissions building

Greenhouse gas emissions include: heating, hot water, auxiliary energies, ventilation, air conditioning and lighting including domestic power use and auxiliary energy for renewable energy production.

If the verification is carried out before the building has been in operation for a year, the households' energy consumption will be determined according to local regulations. In order to avoid that the calculations forecast a high proportion of energy sold in order to increase their emission sinks, the coverage of the energy demand of certain consumers must be based on conservative assumptions¹⁰, unless other figures can be considered as appropriate. The reduction of emissions from operation to 0 kg/a is only possible through avoidance (energy efficiency) and substitution (own production of renewable energy = purchase or share of wind energy or photovoltaics, etc.).

A verification of a "Net Zero Emissions Building" taking into account the purchase of CO2 certificates from emission reduction projects is not possible.

With reference to local laws such as KrW-/AbfG, BlmSchG and BBodSchG

⁸ E.g. DIN 276: KGR 300 and KGR 400

 $^{^9\;\,}$ E.g. DIN 18960: KGR 310, 330, 350, 410 and 420 $\,$

¹⁰ E.g. coverage of the entire electricity demand by self-generated electricity is to be assumed to be at least 90%

Annex A – Overview of test marks

For the below listed test marks, the General Conditions for Test Marks and Certificates ISO 14064-3, TN-CC 020 apply.¹¹

TUVNORD	TUVNORD	TUVNORD
TÜV NORD CERT GmbH	TUV NORD CERT GmbH	TUV NORD CERT GmbH
Verified Carbon	Verified Carbon	Verified Carbon
Footprint and	Footprint and	Footprint and
Financial Climate	Financial Climate	Financial Climate
Contribution	Contribution	Contribution
Verified Organization	Verified Product	Verified Gas Product
acc. to TN-CC 020	acc. to TN-CC 020	acc. to TN-CC 020
TUVNORD	TUVNORD	TUVNORD
TUV NORD CERT GmbH	TÜV NORD CERT GmbH	TUV NORD CERT GmbH
Verified Carbon	Verified Carbon	Verified Carbon
Footprint and	Footprint and	Footprint and
Financial Climate	Financial Climate	Financial Climate
Contribution	Contribution	Contribution
Verified Combustion	Verified Service	Verified Event
acc. to TN-CC 020	acc. to TN-CC 020	acc. to TN-CC 020
TUVNORD	TÜVNORD	TÜVNORD
TÜV NORD CERT GmbH	TÜV NORD CERT GmbH	TÜV NORD CERT GmbH
Verified Carbon	Verified Carbon	Verified Carbon
Footprint and	Footprint and	Footprint and
Financial Climate	Financial Climate	Financial Climate
Contribution	Contribution	Contribution
Verified Building Construction	Verified Building Operation	Verified Building
acc. to TN-CC 020	acc. to TN-CC 020	acc. to TN-CC 020

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