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White Paper

ISO 14068-1

Trust and transparency: Verifying your carbon neutrality pathway

Executive summary

Achieving carbon neutrality is a growing priority for businesses worldwide. This is driven by increasing environmental concerns, regulatory pressures, and consumer demand for sustainable practices.

The ISO 14068-1 standard, released in 2023, provides a structured framework to help achieve carbon neutrality. This international standard outlines a systematic approach for organisations to become carbon neutral by reducing greenhouse gas (GHG) emissions, enhancing GHG removals, and offsetting residual emissions through credible projects.

The journey toward carbon neutrality is accompanied by many challenges such as tackling supply chain emissions, providing the necessary funds, budgets and infrastructure, as well as avoiding misleading green claims. However, companies that prioritise sustainability and accept these challenges not only contribute to climate change mitigation, they also enhance their brand reputation, gain competitive advantages, and improve financial performance. Additionally, compliance with carbon neutrality standards helps companies align with future regulations, build investor confidence, and avoid greenwashing claims.

The ISO 14068-1 standard sets out clear principles, such as the prioritisation of emission reductions over offsets and the requirement for life-cycle assessments to consider the entire value chain. It provides businesses with a comprehensive management plan for achieving short and long-term emission reduction targets, with regular progress monitoring and third-party verification to ensure transparency.

TÜV SÜD has the expertise and tools required to navigate the complexities of carbon neutrality, from supplier audits to infrastructure transitions. TÜV SÜD can support businesses in obtaining independent verification, ensuring compliance and credibility while positioning them for long-term success in a low-carbon economy.

Contents

01	03 – 03	Introduction
02	04 – 04	Growing awareness and concern about climate change
03	04 – 06	ISO 14068-1 unveiled: Framework, principles, and reporting
04	08 – 08	Key steps to achieving carbon neutrality
05	08 – 08	Carbon neutrality verification
06	09 – 09	Key challenges to achieving carbon neutrality
07	10 – 10	Validation and verification: TÜV SÜD's role in achieving carbon neutrality
08	10 – 10	Conclusion

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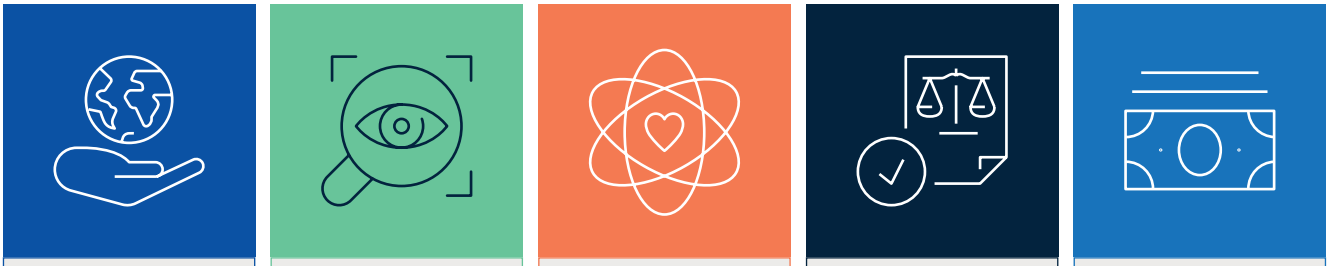
Introduction

What does it mean for organisations to become “carbon neutral”? According to the ISO 14068-1 standard it is: “a condition in which, during a specific period of time, the carbon footprint has been reduced as a result of greenhouse gas (GHG) emission reductions or GHG removal enhancements and, if greater than zero, is then counterbalanced by offsetting.”

In other words, the concept of carbon neutrality means any CO_2 released into the atmosphere by a company’s activities is balanced by an equally high amount being removed. To operate carbon neutrally, a company must reduce all its GHG emissions as far as possible and compensate the remaining amount through carbon offset projects or other mechanisms.

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Carbon neutrality is highly relevant for companies and organisations for several reasons:



Sustainability and environmental impact:

Reducing greenhouse gas emissions to the greatest extent possible is vital for combating climate change. This not only mitigates environmental risks but also contributes to green economic growth.

Reputation and brand image:

Companies that commit to carbon neutrality enhance their credibility and brand reputation as they can differentiate themselves and attract climate-conscious customers.

Innovation and competitive advantage:

The carbon neutrality journey drives innovation, and the development of new products and services. This creates a competitive advantage in an increasingly eco-conscious market.

Regulatory compliance and investor confidence:

As the world increasingly focuses on climate change, future regulations will favour carbon-neutral businesses. Investors are showing a preference for companies with strong environmental commitments, especially when verified by a third-party.

Financial benefits:

Regulatory requirements, such as the EU taxonomy and European emissions trading, or funding schemes, such as CCfD support companies that ensure their production is more sustainable compared to their fossil fuel competitors.

Growing awareness and concern about climate change

In the European Union, several regulations have been put in place to encourage companies to take carbon neutrality action.

The European Climate Law (2021/1119) enshrines the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050. The law also sets the intermediate target of reducing net greenhouse gas (GHG) emissions by at least 55% by 2030, compared to 1990 levels.

At the same time the Empowering Consumers Directive and the Proposal for a Directive (2024/825) on Green Claims (2023/0085) are key EU initiatives that indirectly pressure companies towards carbon neutrality. The Empowering Consumers Directive enhances consumers' rights and promotes transparency about products' ecological and social impacts. This empowers consumers to make eco-friendly choices.

Therefore, companies that demonstrate a commitment to carbon neutrality can enhance their appeal to consumers and potentially increase market share, while at the same time comply to European laws.However, it's important to note that the transition to carbon neutrality should be genuine and not just a marketing strategy, as consumers and society at large are becoming more discerning and aware of "greenwashing" practices.

The Proposal for a Directive on Green Claims sets stringent requirements for environmental declarations, ensuring consumers receive trustworthy information about a product's environmental impact. This prevents greenwashing and encourages companies to genuinely reduce their carbon footprint, which is the starting point to achieve carbon neutrality.

ISO 14068-1 unveiled: Framework, principles, and reporting

ISO 14068-1 "Climate change management — Transition to net zero — Part 1: Carbon neutrality" was released in November 2023. This standard provides a consistent approach to achieving and demonstrating carbon neutrality. It sets out principles, requirements and guidelines for achieving and demonstrating the carbon neutrality of organisations and products. The standard explicitly contains the requirement for a value chain (for organisations) or a life-cycle approach (for products). This means that not only company-controlled processes have to be assessed, but also all upstream and downstream processes.

Extending ISO 14060 series' principles

ISO 14068-1 builds on existing international standards that address the quantification, reporting, validation and verification of greenhouse gases, such ISO 14064-1, ISO 14064-3 and ISO 14067. The relationship of ISO 14068-1 to other standards in the ISO 14060 series as well as to other international standards is graphically shown in Figure 1 of the standard.

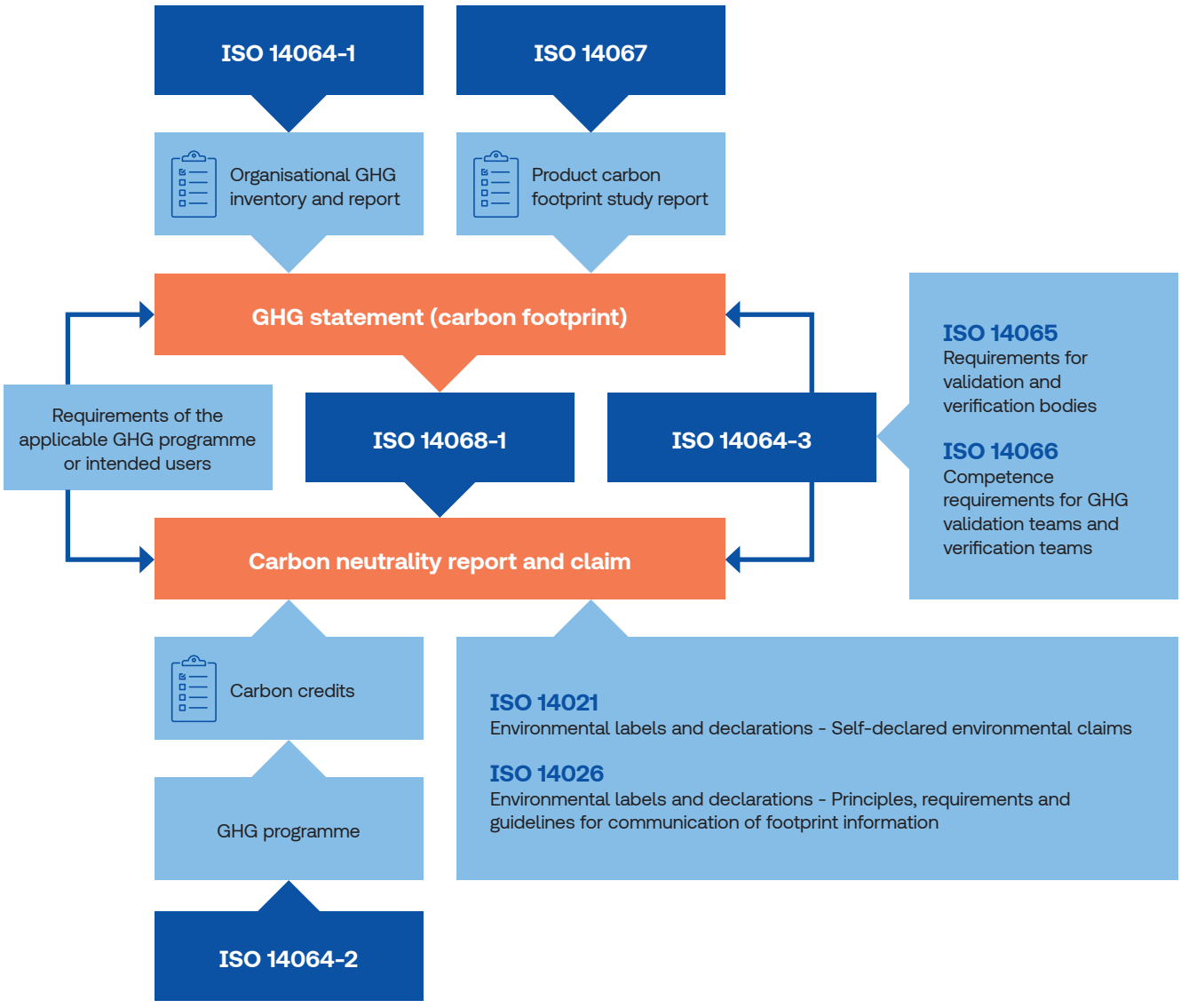


Fig. A Relationship of the different international standards (based on Fig. 1 ISO 14068-1)

ISO 14068-1 extends the principles already included in the ISO 14060 series of standards to integrate the concepts of "ambitioned goals", "urgency of action" and "science-based approach" for the creation and implementation of carbon neutrality management plans.

Carbon neutrality framework

The standard's Framework for Carbon Neutrality provides a structure for achieving and demonstrating carbon neutrality (reporting). The framework requires companies to first define their reporting boundaries, and quantify GHG emissions, followed by the development and implementation of a carbon neutrality management plan, including setting short- and medium-term targets and a target year for achieving those targets. The framework also includes requirements for progress reports in successive reporting periods.

For setting the boundaries of the carbon neutrality framework, ISO 14068-1 refers to the corresponding standards of the ISO 14060 series. Other principles and requirements which are consistent with these ISO standards are acceptable, provided the chosen criteria is explained and justified.

In addition, ISO 14068-1 sets specific requirements for the documentation of each individual framework step (the steps mentioned in Fig. B). It also specifies requirements for the recognition of the achieved GHG emission reductions, the increase in GHG removals, and for the application of compensation measures. (see steps mentioned in Fig. B)

The hierarchy of achievement

The standard outlines clear principles for achieving carbon neutrality. It emphasises the importance of prioritising GHG emission reductions first, as these are often the most cost-effective method for lowering a carbon footprint and can help avoid the expense of carbon credits.

The standard sets up a hierarchy that guides the creation of a carbon neutrality pathway, which includes setting both short-term and long-term targets for reducing carbon emissions. Additionally, it details how this pathway informs the development of a comprehensive carbon neutrality management plan, offering precise guidance for those tasked with implementing carbon neutrality measures.

According to ISO 14068-1 carbon neutrality is achieved using the following hierarchy:

1. Firstly, and primarily through GHG emission reductions.
2. Secondly by increasing the removal of GHGs within the boundaries of the subject.
3. Only then can emissions be offset in other ways (e.g. through "offsetting", "carbon credits").

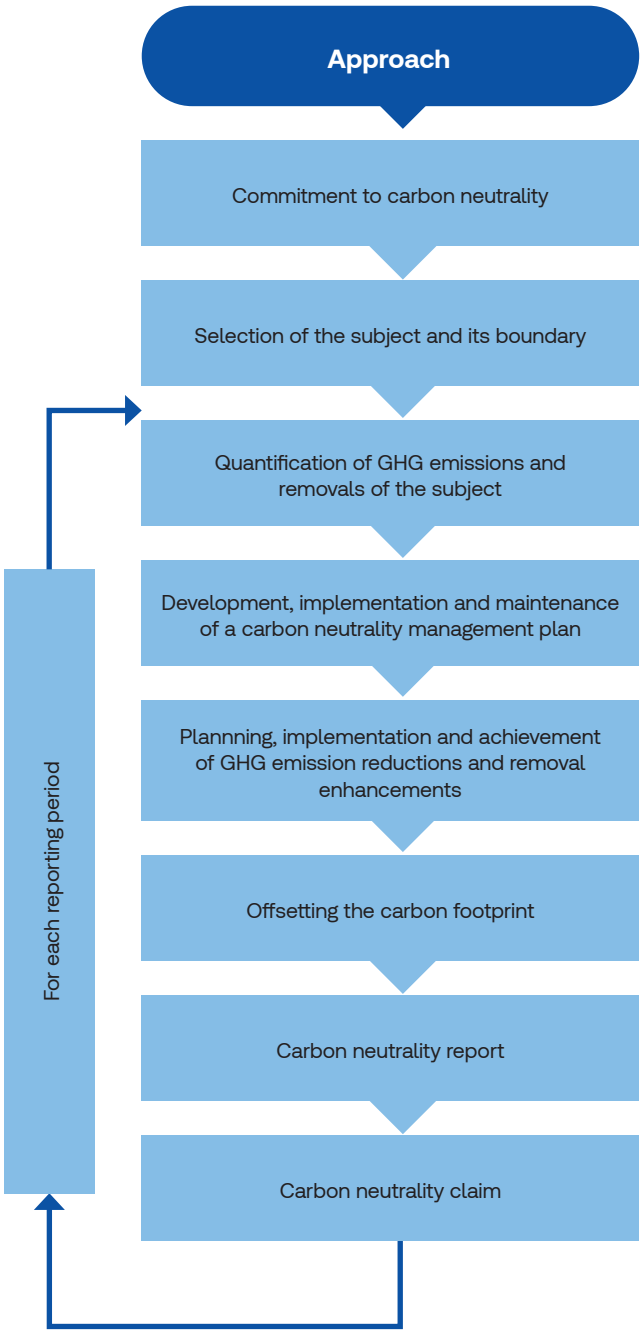


Fig. B ISO 14068-1 Framework for carbon neutrality (based on Fig. 2 of ISO 14068-1).

In other words, the hierarchy approach prioritises actions to reduce direct and indirect GHG emissions and improve the subject's GHG removal, with compensation only allowed to be used for the CO_2 footprint that remains after these measures (based on Fig. 2 of ISO 14068-1).

ISO 14068-1

The road to carbon neutrality.



Key steps to achieving carbon neutrality

The ISO 14068-1 requires companies to follow multiple steps for achieving and demonstrating carbon neutrality:

Step: 01

Understanding scope and context:

The scope of carbon neutrality efforts must be defined. The context in which the organisation operates must also be understood.

Step: 02

Establishing a carbon management framework:

The framework should include policies, objectives, and a management structure for achieving carbon neutrality.

Step: 03

Conducting a GHG inventory:

GHG emissions must be identified and quantified - both from direct and indirect sources. Emissions shall be reported according to the corresponding ISO standards for organisations (ISO 14064-1) or products (ISO 14067).

Step: 04

Carbon neutrality management plan:

A detailed management plan must be created, outlining the actions, responsibilities, timelines, and resources for achieving and maintaining carbon neutrality.

Step: 05

Setting reduction targets:

Short-term and long-term targets for reducing GHG emissions must be established.

Step: 06

Implementation of emission reduction strategies:

Implementation of emission reduction strategies:

Step: 07

Monitoring and measuring progress:

Effectiveness of the implemented strategies must be monitored and measured to track progress.

Step: 08

Offsetting remaining emissions:

Once all feasible reduction strategies have been applied, any remaining emissions are calculated, and carbon offsets purchased if necessary.

Step: 09

Reporting and verification:

Document and report processes and achievements. Any carbon neutrality claims shall be verified in accordance with ISO 14064-3 or an equivalent verification standard.

Step: 10

Continuous improvement:

Review and update the carbon neutrality plan and practices to react to changes in the organisation and to adapt to technological developments.

Carbon neutrality verification

Having carbon neutrality claims independently verified in accordance with ISO 14064-3 is a critical step for businesses for following reasons:

- **Accuracy and transparency:** ISO 14064-3 provides a framework for evaluating both organisational and product carbon footprints. This ensures that these footprints contain accurate information and provide transparency to stakeholders.
- **Avoiding greenwashing:** Reliable, internationally accepted standards, like the ISO standards, are increasingly important in light of legislation aimed at protecting consumers from greenwashing and misleading environmental claims.
- **Scientific validity:** The standard ensures that carbon neutrality efforts are true, fair, scientifically valid, and communicated transparently.
- **Stakeholder confidence:** Independent verification gives stakeholders confidence in the organisation's commitment to reducing climate change.

According to the standard's framework, the organisation must report at regular intervals on quantification and compensation measures. This report covers the progress made in the Carbon Neutrality Pathway and helps organisations to clearly communicate their efforts and progress in achieving carbon neutrality.

Key challenges to achieving carbon neutrality

Achieving carbon neutrality might seem like a huge challenge at first glance. However, with a strong partner and a good plan, it is realisable.

In the following we present some key challenges and how TÜV SÜD can support organisations on their way to carbon neutrality:





Challenge	How we can support you
Supply chain emissions Companies have complex global supply chains that span multiple business units and functions. These upstream emissions often account for the majority of a company's overall climate impact. However, tackling these emissions presents an additional layer of complexity, including opaque carbon-accounting and tracking practices.	**Supplier audits** TÜV SÜV audits suppliers according to the required standards so that companies' own calculations are based on reliable supply chain data.
Competences and skills Acquiring and maintaining the relevant competences and skills for the creation and maintenance of your carbon neutrality plan	**Professional training** Professional training from TÜV SÜD empowers your people with the knowledge they need to face the challenge.
Costs and infrastructure The transition to low-carbon technologies and infrastructure can be costly. Companies need to provide not only the budget, but also human resources.	**Project Management Office (PMO) at TÜV SÜD** TÜV SÜD's competent PMO has international experience in handling large scale projects with the aim of implementing projects on time and budget.
Greenwashing Companies need to avoid making misleading claims about the environmental benefits of their products or services or about their environmental performance as organisations. This is a key part of the Green Claims Initiative.	**Verification or certification by TÜV SÜD** TÜV SÜD supports organisations with verification and certification so that your sustainability efforts are confirmed to be authentic and compliant with requirements.

It is crucial to have a comprehensive and strategic approach to achieving carbon neutrality, one that considers the entire life cycle and value chain of a company's operations.

Validation and verification: TÜV SÜD's role in achieving carbon neutrality

Validation and verification of conformity assessments authenticate the reliability of information provided by customers in the form of claims. The carbon neutrality audit according to ISO 14068-1 will help you to demonstrate the carbon neutrality of your operations and products in compliance with the requirements of the standard.

TÜV SÜD offers accredited carbon footprint verifications for organisation and their products, including the validation of the systematic approach for product carbon footprint quantification. We ensure that the quantification step required by ISO 14068-1 is according to the standard which helps you to have more confidence in your decision making.

Conclusion

Carbon neutrality not only supports global sustainability goals, it also enhances a business's financial performance, risk management, and market position.

ISO 14068-1 provides a structured framework for businesses to achieve and demonstrate carbon neutrality. This enables organisations to adopt a broad and dependable approach to successfully achieving carbon neutrality.

TÜV SÜD supports you to align your efforts with international best practices, and enhance environmental and social responsibility. Not only can you demonstrate your commitment to achieving carbon neutrality, but you also prove your compliance with internationally recognised standards. Using the ISO 14068-1 framework gives you a structured and measurable method of managing your environmental impact effectively and improving sustainability performance.



Glossary

Glossary of acronyms

ECD	Empowering Consumer Directive
ESS	European Social Survey
GCD	Green Claims Directive
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
SDGs	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change

Footnotes

1. Pew Research Center, In Response to Climate Change, Citizens in Advanced Economies are Willing to Alter How They Live and Work, 14 September 2021. https://www.pewresearch.org/global/2021/09/14/in-response-to-climate-change-citizens-in-advanced-economies-are-willing-to-alter-how-they-live-and-work/
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3. European Attitudes to Climate Change and Energy, European Social Survey Issue 9, September 2018 https://www.europeansocialsurvey.org/sites/default/files/2023-06/TL9_Climate-Change-English.pdf
4. Consumers want it all: Hybrid shopping, sustainability, and purpose-driven brands, January 2022 https://cdn.nrf.com/sites/default/files/2022-01/Consumers%20want%20it%20all.pdf

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www.tuvsud.com/en/services/auditing-and-system-certification/carbon-footprint-verification

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