



climate

Practical
tools
for
addressing
**climate
change**



Monitoring climate change, quantifying greenhouse gas (GHG) emissions and promoting good practice in environmental management and design are just some of the ways in which ISO International Standards help governments and organizations address climate change. These standards are seen as essential to the GHG markets for cap-and-trade schemes, offsetting credits, carbon neutrality and low-carbon strategies and policies. They also contribute directly to the United Nations Sustainable Development Goal 13 on climate action.

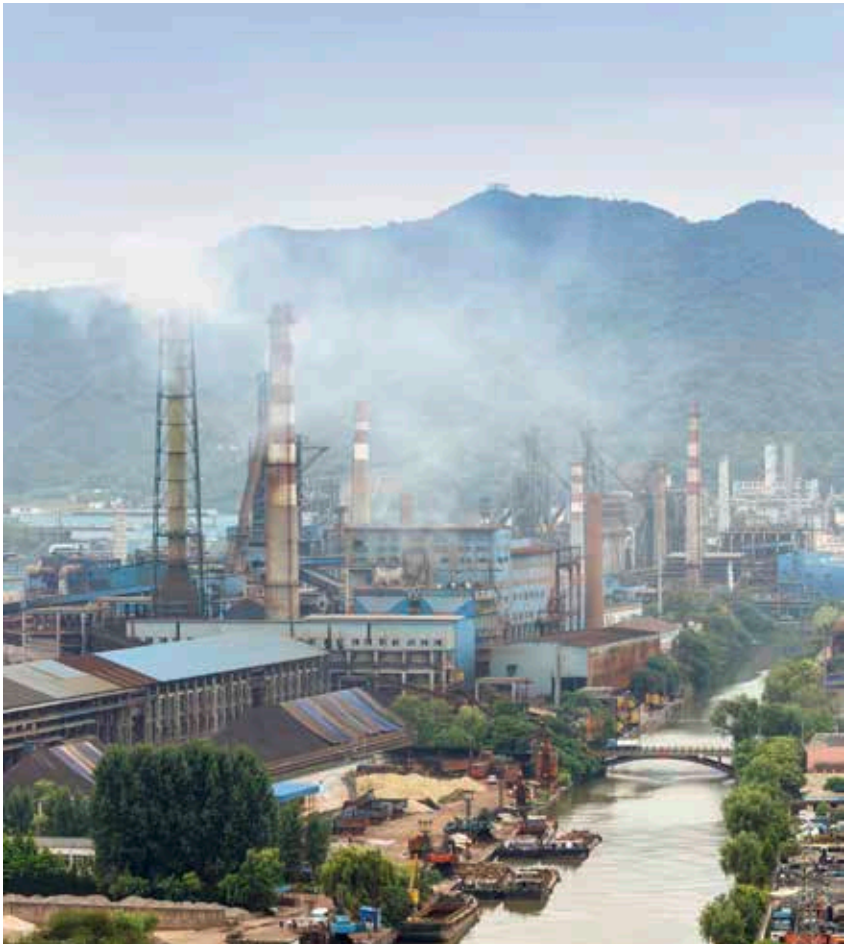
ISO has produced over 600 environment-related standards, including those that help open world markets for clean energy and energy-efficient technologies and support climate change adaptation and mitigation.

ISO standards are designed to be policy-neutral, which gives ISO's GHG standards the flexibility to be applied to many different GHG programmes around the world. The growing use of ISO GHG standards for both regulatory and voluntary purposes is a testament to their versatility and their contribution to linking GHG markets around the world.

Quantifying GHG emissions

ISO's GHG standards do not set targets, but provide a common approach to the assessment, measurement and reporting of greenhouse gases. Carbon markets are based on GHG emissions trading and ISO standards create the international fabric to bring emissions reduction and trading schemes to life.

GHG reporting – i.e. the act of disclosing data on the impact of an organization's activities – has to be relevant, complete, consistent, accurate and transparent, otherwise it can lead to lack of trust. As this information has become more



important to investors for managing risk, or making operational improvements in the businesses themselves, GHG emissions validation and verification have played a decisive role in ensuring systems are sound and data are accurate.

Developed by ISO's subcommittee on greenhouse gas management (ISO/TC 207/SC 7), International Standards ISO 14064 and ISO 14065 provide an internationally agreed framework for measuring GHG emissions, verifying claims and accrediting the bodies that carry out such activities to ensure accuracy and completeness.

They provide clarity and consistency between those reporting GHG emissions and their stakeholders. Organized in three parts, ISO 14064 is emerging as the global benchmark on which to base such programmes, while auditing standard ISO 14065 specifies principles and requirements for bodies that undertake validation or verification of GHG assertions. In addition, ISO 14067 provides a framework for measuring the carbon footprint of products.

The Verified Carbon Standard (VCS), a fully-fledged carbon offset standard developed by The Climate Group (TCG), the International Emissions Trading Association (IETA) and the World Business Council for Sustainable Development (WBCSD), specifically integrates the principles of ISO 14064 and uses the validation and verification requirements of ISO 14064-3 and ISO 14065.

Achieving international agreement on the quantification and verification of emissions trading is the key to supporting the development, networking, consistency and fungibility of emissions credit trading schemes. On this premise, the upcoming ISO 19694 series for stationary source emissions of energy-intensive industries will allow some of the heaviest-polluting industries – such as aluminium, iron and steel – to measure and monitor their GHG emissions, a crucial first step towards reducing the pollution they produce.



Climate change mitigation and adaptation frameworks

ISO has partnered with key international stakeholders, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the World Bank, in developing strategic roadmaps for a system of standards on climate change mitigation and adaptation.

ISO 14080 sets out a framework and principles to make adaptation and mitigation schemes more compatible and elaborate on their different approaches. It will also guide the efforts of developed and developing countries in relation to mitigation and adaptation.



In addition, there are a number of standards in the pipeline to support the way organizations and communities adapt and become more resilient to climate change.

These include standards that help create a framework for adaptation (ISO 14090), issue guidance on conducting a vulnerability assessment (ISO 14091) and assist with adaptation planning (ISO 14092).

Financing climate change activities

While many measures to mitigate climate change may result in cost savings for organizations, making the transition to an economy with reduced greenhouse gas emissions requires significant investment. Refurbishing infrastructures to improve energy efficiency and curb emissions is one such example.

Private initiatives and capital will be required to create sustainable solutions in the future. Green bonds are one way of financing climate and environmental investments. Green bonds are debt securities issued to raise capital specifically to support climate-related or environmental projects.¹⁾ ISO is now developing standard ISO 14030 to harmonize the definition of green bonds and specify requirements to evaluate the environmental performance of the assets they finance.

The future ISO 14097 for assessing and reporting investments and financing activities related to climate change will provide a general framework and technical guidance to financial institutions on climate-related metrics.

1) World Bank : <http://documents.worldbank.org/curated/en/400251468187810398/pdf/99662-REVISED-WB-Green-Bond-Box393208B-PUBLIC.pdf>



Communicating on environmental performance


ISO has developed a number of standards to ensure good practice when making environmental claims and communications. These include:

- ISO 14020, *Environmental labels and declarations – General principles*
- ISO 14026, *Environmental labels and declarations – Principles, requirements and guidelines for communication of footprint information*
- ISO 14063, *Environmental management – Environmental communication – Guidelines and examples*
- ISO 21930, *Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services*

In addition, ISO is developing a new standard – ISO 14016 – on the assurance of environmental reports, which will give readers of corporate sustainability reports greater confidence by demonstrating the reliability of the information included.





An aerial photograph of a dense, vibrant green forest. A narrow, dark path winds through the trees. A person wearing a light-colored hat and dark clothing is walking along the path, providing a sense of scale to the vast forest. The lighting is bright, highlighting the rich green hues of the foliage.

Promoting good practice in environmental management and design

The ISO 14000 family of standards for environmental management developed by ISO technical committee ISO/TC 207, *Environmental management*, is firmly established as the global benchmark for good practice in this area.

ISO 14001, *Environmental management systems – Requirements with guidance for use*, contributes to any organization's objectives to operate in an environmentally sustainable manner. In 2016, more than 346 000 certificates of conformity to ISO 14001 had been issued to private- and public-sector organizations across two hundred countries and economies.

The ISO 14000 family also includes supporting tools for environmental management and the design of environmentally friendly products and services:

- ISO 14004, *Environmental management systems – General guidelines on implementation*
- ISO 14006, *Environmental management systems – Guidelines for incorporating ecodesign*
- ISO 14040, *Environmental management – Life cycle assessment – Principles and framework*
- ISO 14044, *Environmental management – Life cycle assessment – Requirements and guidelines*

Opening world markets to clean energy and energy-efficient technologies

International Standards can also be the vehicle for the dissemination of innovative technologies, particularly for alternative and renewable energy sources, by reducing time to market, creating global interest and developing a critical mass of support to ensure the economic success of such technologies.

ISO standards are among the leading objective tools that assist policy makers in decisions related to public incentives, regulations and use of standards, thus encouraging the judicious and widespread adoption of such innovative technologies. ISO 14034, *Environmental management – Environmental technology verification (ETV)*, can assist companies developing innovative environmental technologies in reaching new markets. It provides independent verification of the performance of new environmental technologies, helping manufacturers prove the reliability of their performance claims and technology purchasers identify the innovations that suit their needs.





More generally, ISO 50001, *Energy management systems – Requirements with guidance for use*, helps organizations of all kinds and sectors manage their energy performance and use energy more efficiently, while other standards in the ISO 50000 range provide specific guidance in areas such as auditing, measurement and energy savings.

What's more, ISO has already developed many other standards that have an impact on climate change in areas such as nuclear energy, solar energy, hydrogen technologies, intelligent transport systems, building environment design, and sustainability in building construction.

ISO's proactive stance on climate change topics has resulted in the initiation of ISO work on biofuels, energy management systems and the examination of new opportunities in energy efficiency and renewable energy sources. To this end, ISO maintains its close cooperation with the International Electrotechnical Commission (IEC) and has additionally partnered with the OECD's International Energy Agency (IEA) and the World Energy Council (WEC) in joint initiatives related to this field.

Monitoring climate change

ISO technical committee ISO/TC 211, *Geographic information/Geomatics*, deals with standardization in the field of digital geographic information. It collaborates, among other partners, with the:

- United Nations Food and Agriculture Organization (FAO) on standards for satellite mapping and data acquisition and processing
- World Meteorological Organization (WMO) on standards for meteorological and climatological data



Benefits of ISO standards for climate change

Developed under a consensus process by experts from all around the world, ISO standards are leading climate action in a variety of ways by:

- Offering transparent and comparable GHG reporting
- Providing a foundation of best practices upon which to build a GHG reductions programme
- Providing opportunities for improved consistency, increased flexibility and decreased effort associated with voluntary GHG inventories
- Offering a consistent technical approach that simplifies verification and facilitates emissions trading
- Decreasing transaction costs
- Building greater confidence in GHG inventory and improving stakeholder credibility

What's more, since standards are policy- and sector-neutral, they also allow linking with other programmes.

More information

ISO Website: www.iso.org

ISO Website section on **climate change**:
www.iso.org/iso/climate_change

ISO 14001 information and resources:
www.iso.org/iso/iso14000

ISOfocus magazine:
www.iso.org/isofocus

About ISO

ISO (International Organization for Standardization) is an independent, non-governmental international organization with a membership of 161* national standards bodies. Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant International Standards that support innovation and provide solutions to global challenges.

ISO has published more than 22 000* International Standards and related documents covering almost every industry, from technology to food safety, to agriculture and healthcare.

For more information, please visit www.iso.org.

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