

## Executive Summary

Energy is a key topic in the global community; changing energy use contributes to the efforts for reduction in Greenhouse Gas (GHG), achieving net-zero emissions, and improving operational energy efficiency. ISO/TC 301 is positioned to provide guidance to the global community in making the decisions needed to improve energy efficiency, change energy use and transition to a low carbon economy.

As the global community makes that transition, ISO/TC 301 can produce deliverables that facilitate:

- achieving decarbonization results through energy management including setting targets, accelerating, and achieving progress in achieving targets, and demonstrating energy reductions in energy consumption,
- determining, adopting, comparing, implementing, verifying, and validating technology choices,
- providing guidance on competence within organizations giving confidence in the results achieved,
- providing guidance on reducing GHG emissions from energy consumption especially related trade-offs that achieve the overall net -zero energy emissions goals, and
- providing guidance on improving the energy supply chain especially related trade-offs that achieve the overall net -zero energy emissions goals.

ISO/TC 301 is positioned to engage with entities to improve the business processes, provide predictive and actual energy savings through relevant framework(s) for strategic decisions, systematic improvement, energy performance, management of energy data, and validation and verification.

Energy efficiency has a critical role in addressing climate change, and in the improvement of energy-using processes. The International Energy Agency (IEA) has estimated that 40 percent of the world's abatement required to be in line with the Paris Agreement can be achieved with energy efficiency.<sup>1</sup> Improvements through energy efficiency management and related activities reduce both the amount of fuel needed to generate the energy type, such as electricity, and the amount of greenhouse gases and other air pollution emitted from the energy-using activity. ISO/TC 301 provides standards that help organizations develop, implement, and maintain processes to manage energy efficiency, demonstrate energy performance improvement and energy savings based on energy performance improvement actions taken for projects, organizations, regions, and countries.

## Imperatives to Improve Energy Performance through Strategic Energy Management

The circumstance which first led to the formation of ISO/TC 301 to provide an international standard for strategically managing energy was the central and significant role of energy in virtually all organizational activity. Energy use has also been a driver of an organization's costs and frequently an organization's environmental impacts. Managing energy strategically strongly contributes to the entity's success.

By reducing energy consumption and improving energy efficiency and energy performance, an entity can reduce the amount of energy that needs to be produced from energy types with high carbon emissions such as fossil fuels. Achieving the global net zero goals requires a combination of reducing energy consumption,

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<sup>1</sup> <https://www.iea.org/reports/multiple-benefits-of-energy-efficiency/emissions-savings>



improving energy efficiency, and transitioning to a combination of clean and renewable energy types. This can be seen in the ISO's recent development of IWA 42 Net Zero Guidelines designed to give organizations a management framework facilitating achieving very low or "net zero" greenhouse gas emissions. In addition to reducing the effects of climate change, reaching net zero can improve an entity's reputation, credibility, and create new business opportunities. Transitioning to clean energy can also help entities reduce costs, increase energy security, and support the transition to a sustainable future.

Based on the importance of climate change mitigation through decarbonization, the members of ISO/TC 301 presume reducing energy-related emissions to be the primary prioritizing factor in future work. Deliverables that do not provide requirements or guidance in strategically managing energy to address the concerns about the effects on climate of energy use would be undertaken with less urgency and with a lower priority than those deliverables that address the effects of energy use on climate. This would extend to the systematic review process, to ensure that climate change is considered in any revisions to deliverables that are undertaken by ISO/TC 301.

## The Value of ISO/TC 301's work products

Energy management and decarbonization standards are important to policy makers and entities for several reasons. Firstly, standards provide a clear and consistent framework for entities to measure and reduce their emissions. This helps policy makers to set clear goals for emissions reduction and monitor progress towards meeting those goals. Secondly, standards help to level the playing field for entities by establishing a common set of expectations and requirements for reducing emissions. Finally, standards can provide a clear implementation approach which encourages organizations to adopt more sustainable practices and support the transition to a low-carbon economy. ISO/TC 301 aims to encourage entities to adopt or adapt standardized approaches so both can proceed with confidence. Confidence that is supported by the fact that ISO ISO/TC 301 standards have been developed by experts through international consensus processes.

Entities adopting energy management and decarbonization standards receive several benefits, including improved energy efficiency, cost savings, and increased competitiveness. By following these standards, entities can demonstrate their commitment to sustainability and corporate responsibility, which can enhance their reputation and brand image. Additionally, conformance with these standards can also create new business opportunities, such as participating in carbon markets, and support the development of new clean technologies. In short, energy management and decarbonization standards play a critical role in guiding policy makers and entities towards a more sustainable future.

Examples of the leadership and results that organizations achieve with the implementation of ISO 50001 are demonstrated through the Energy Management Leadership Awards and case studies awarded and assembled by the Clean Energy Ministerial <https://www.cleanenergyministerial.org/initiatives-campaigns/energy-management-leadership-awards/>. These case studies show in detail the on-going benefits, that can be achieved by rigorous, continual energy management.

ISO, through the London Declaration (see Annex A.4) and ISO ISO/TC 301, are working to develop additional partnerships and work with consensus-based development of methods, measurement and verification activities, and management approaches that allow our experts to help to ensure our work and the use of ISO standards are recognized in the fast-developing landscape of sustainable climate action plans. This has led to



positive relationships and collaboration with organizations such as Clean Energy Ministerial, SBTi, GRI, and others.

## ISO/TC 301's Updated Mission Statement:

ISO/TC 301 will produce deliverables for managing energy and determining energy savings which enable users to effectively reduce their energy related emissions and demonstrate energy efficiency through improved energy performance, including the methods and approaches for measurement and verification of the energy savings.

ISO/TC 301 will prioritize standards with broad international application and substantial impact on energy related emissions and decarbonization.

A discussion of international standardization, the role of ISO, and the ISO London Declaration for climate change is found in Annex A. A discussion on the representation and participation in ISO/TC 301 can be found in Annex B.

## Objectives of ISO/TC 301

### Overview

The scope of ISO/TC 301 is the standardization of the field of energy management and energy savings.

The deliverables provided by ISO/TC 301 can be used by organizations and entities of all sizes and types, groups, networks, cities, countries, and regions. This scope includes:

- defining, establishing, implementing, and maintaining energy management systems;
- monitoring and measuring energy performance, especially to verify continual energy improvement;
- identifying, quantifying, verifying, validating and reporting energy performance improvements;
- guidance on energy management practices which improve energy security;
- defining and providing guidance on performing energy savings calculations;
- harmonizing energy management and energy savings terminology;
- guidance on energy and related greenhouse gas emissions management for scope 1 (direct) and scope 2 (indirect) emissions to improve performance both in an organization and in its supply chain;
- establishing competency criteria and conformity assessment for the tasks in this field.

### Topics of interest to ISO/TC 301 for upcoming development activities:

ISO/TC 301 has developed a group of topics that are intended to provide the starting point for prioritizing and initiating future work that focuses on decarbonization and climate change mitigation:

- Decarbonization management system – applying the ISO 50001 process to decarbonization.
- Identification of decarbonization opportunities through energy data analysis (e.g., analyze energy data, determine the potential carbon reduction from potential energy savings opportunities).
- Relationship of energy performance improvement and reduction of emissions (Scope 1 and Scope 2).
- Carbon – energy relationship in the processes for product manufacturer and service provider.



- Determine which schemes are available – develop guidance that allows entities to select the correct scheme for their needs.
- Clarify the relationship between carbon emissions, in terms of energy performance and carbon inventories.
- Energy based carbon performance improvement – (This is not a carbon inventory).-
- Product Energy footprint - like carbon footprint but focused on energy – to support carbon footprint activities for products.
- Quantification of Energy performance improvement and reduction of emissions (Scope 1 and Scope 2) – including the relationship between normalized energy performance improvement and non-normalized/absolute emission reduction results.
- Deliverables that relate to the fair share relationship for the energy component of a carbon reduction, that resulted from an improvement affecting energy use.
- Deliverables that relate to carbon reduction that are not energy efficiency related, such as fuel switching, as well as the broader topic of renewables, to support net-zero targets.
- Develop deliverables for an organization’s energy and carbon goals and their relationship to an international goal – how to help map the goal, e.g. how does an organization set a goal to help achieve, or is consistent with, the 1.5 degree international goal for 2050.

Note: this could be guidance for the organization at the governance level (e.g. a national government) or operational level (e.g. a company producing chemical products).

- Develops deliverables for an energy transition plan to more sustainable, socially responsible (fair), and renewable energy types.
- Develop deliverables that outline elements and processes of energy and carbon audits for identification and quantification of carbon reduction opportunities from energy efficiency and energy performance improvements.
- Guidance and information on technologies that can accelerate energy performance improvement e.g., Integrated District Energy System (IDES).
- Developing deliverables that address the issues related to energy performance improvement normalized indicators and carbon absolute reduction indicators.
- Developing measurement and verification approaches linking carbon reduction indicators based on energy performance management.

## The Work of ISO/TC 301

ISO/TC 301 has several different types of work to manage. It uses the following organizational forms to best use its limited resources:



- Future or new work begins as the need for deliverables emerges and is identified either by ISO/TC 301, one of the national member bodies or liaison members. When approved, this work is assigned to a working group (WG) based on the topic and needs of the Technical Committee. The process follows the new work item proposal (NWIP) process from the ISO/IEC Directive 1 and the agreement of ISO/TC 301 members based on Appendix C – new work item process review flow and criteria.
- Existing portfolio is the completed work of ISO/TC 301. ISO requires routine review of the portfolio of work by a technical committee. ISO TC/301 has assigned Task Group 5 the responsibility of providing recommendations to ISO/TC 301 for systematic reviews for existing deliverables as their review date approaches.
- The TC develops Task Groups (TGs) which are assigned specific actions. These task groups address a specific task which is expected to continue for an indeterminate period of time. Examples include but are not limited to: communication, harmonizing terminology or translation.
- Ad Hoc Groups assigned to development work or special tasks based on a specific term of reference (TOR). These usually exist for a specific period of time. Examples include but are not limited to the development of a specific NWIP, or revisions to ISO/TC 301's Strategic Plan.

Additional details on the means used to manage work in ISO/TC 301 is provided in Annex C.



## ANNEX A

### A.1 ISO technical committees and business planning

The extension of formal business planning to International Organization for Standardization (ISO) Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends. This allows ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

### A.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade. Three bodies are responsible for the planning, development and adoption of International Standards: ISO is responsible for all sectors excluding electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union). ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 167 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland. The principal deliverable of ISO is the International Standard and associated guidance and technical documents. An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee, representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Publicly Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO deliverables represent lower levels of consensus and therefore do not have the same status as an International Standard. ISO also offers the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national body. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

### A.3 ISO and the sustainable development goals (SDGs)

ISO has published more than 22 000 International Standards and related documents that represent globally recognized guidelines and frameworks based on international collaboration. Built around consensus, they provide a solid base on which innovation can thrive and are essential tools to help governments, industry and consumers contribute to the achievement of every one of the SDGs. Additional information on how ISO standards help to achieve the SDGs can be found at <https://www.iso.org/sdgs.html>.

ISO/TC 301 focuses on several key SDGs including:

SDG Goal	SDG Title
1	No poverty



7	Affordable and clean energy
8	Decent work and economic growth
9	Industry, innovation, and infrastructure
11	Sustainable cities and communities
12	Responsible consumption and production
13	Climate action

An example of how some of the ISO/TC 301 documents address these SDGs is shown below.

ISO/TC 301 Standard	SDG
ISO 50001:2018 Energy management systems- Requirements with guidance for use	Affordable and clean energy Sustainable cities and communities Responsible consumption and production Climate action
ISO 50046:2019 General methods for predicting energy savings	Affordable and clean energy Sustainable cities and communities Responsible consumption and production Climate action
ISO PAS 50010:2023 Energy management and energy savings – Guidance for net zero energy in operations using an IOS 50001 energy management system.	No poverty Affordable and clean energy Decent work and economic growth Industry, innovation, and infrastructure Sustainable cities and communities Responsible consumption and production Climate action
ISO 17742:2015 Energy efficiency and savings calculation for countries, regions and cities	Affordable and clean energy Sustainable cities and communities Responsible consumption and production Climate action

How the ISO deliverables from ISO/TC 301 serve the market is shown in Annex D.

#### A.4 London Agreement

International Standards play a crucial role in underpinning the global economy, creating trust in all aspects of international trade. ISO has a number of standards that are essential in supporting the climate agenda; they help adapt to climate change, quantify greenhouse gas emissions, and promote the dissemination of good practices in environmental management. Science is clear: the need for urgent measures to reduce emissions and help adapt to climate change is overwhelming.

Without up-to-date International Standards, industry and other stakeholders will be unable to achieve what is necessary. ISO hereby commits to work with its members, stakeholders and partners to ensure that International Standards and publications accelerate the successful achievement of the [Paris Agreement](#), the [United Nations Sustainable Development Goals](#) and the [United Nations Call for Action on Adaptation and Resilience](#).



The ISO London Declaration of 2021, ensures that the ISO will:

- Foster the **active consideration of climate science and associated transitions** in the development of all new and revised International Standards and publications.
- Facilitate the **involvement of civil society and those most vulnerable to climate change** in the development of International Standards and publications.
- Develop and publish an **Action Plan and Measurement Framework** detailing concrete actions and initiatives and a reporting mechanism to track progress.



## Annex B: Background Resources

Background on the membership, activities and accomplishments of ISO/TC 301 can be found at the following web sites:

The participation and members of ISO/TC 301 can be found at  
<https://www.iso.org/committee/6077221.html>.

The work programme for ISO/TC 301 can be found at  
<https://www.iso.org/committee/6077221/x/catalogue/p/0/u/1/w/0/d/0>.

The membership of ISO/TC 301 can be found at  
<https://www.iso.org/committee/6077221.html?view=participation>.

## Annex C: Work Management Practices

### C.1 New Work

To use the TC's resources most effectively the TC has adopted a process for developing the business and use case of new activities. The process relies on an Ad Hoc Committee to develop materials, and the Chairman's Advisory Committee (CAG) for reviewing and approving new work. Detailed steps are, first, to make a recommendation on new work an Ad Hoc Committee develops the ISO Form 4 and any related materials which are provided to the Committee Manager of ISO/TC 301, and then are sent to the CAG. The CAG reviews the materials and decides if the work is related to an existing working group and should be reviewed by that group or if one of the existing working groups represents the experts that are needed for the proposed work and should be reviewed by the working group, or if the proposed work should be reviewed by an ad hoc. (See Figure C.1)

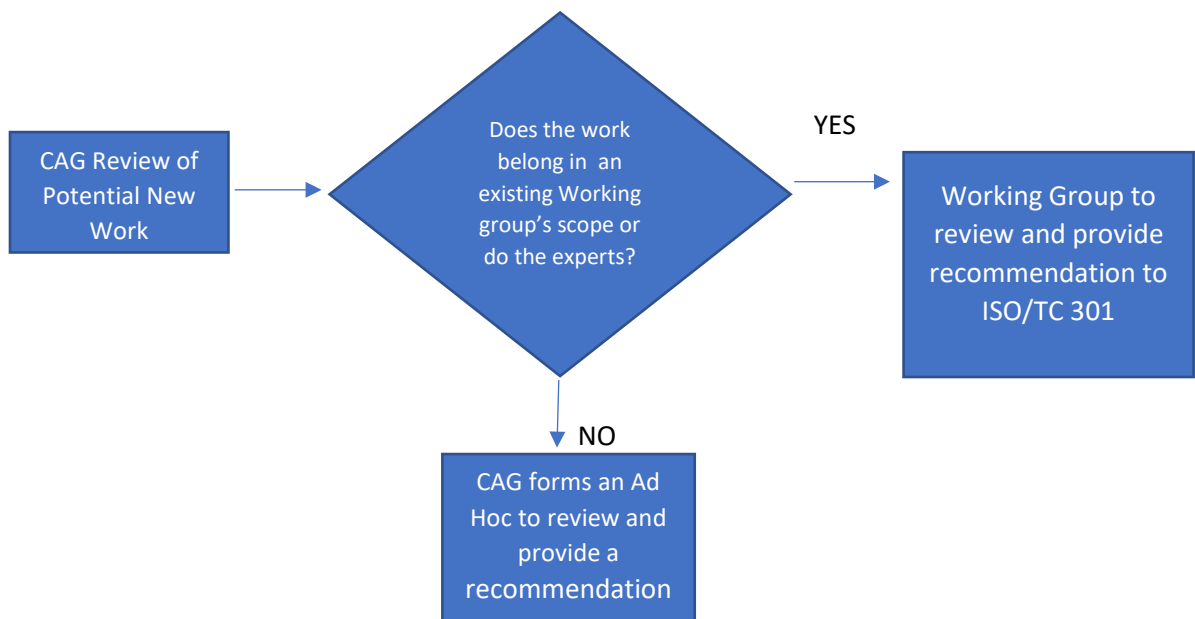


Figure C.1 New Work Process Flow

When the working group or ad hoc receives the proposed new work they review the information for the following characteristics:

- ❖ proposal fits within the scope of ISO/TC 301,
- ❖ if it is a topic that is included within the ISO/TC 301 Strategic Plan,
- ❖ if it is a topic that has at least five (5) countries which have agreed to commit resources for the work,
- ❖ if the leadership has agreed to use the ISO/TC 301 harmonized definitions, and
- ❖ are there any technical issues or questions that are not currently addressed that would help the P and O members of ISO/TC 301 make a decision to commit resources to the project.



Based on the review there are four possible outcomes:

1. The proposal is ready to move to ISO/TC 301 for formal NWIP (NP, Form 4) ballot to begin the development process.
2. The proposal is a good concept but should be further developed in an ad hoc prior to ballot by ISO/TC 301
3. The proposal needs to address additional information and should be returned to the proposer for those issues to be addressed.
4. The proposal is not within the current strategic plan or scope of ISO/TC 301 and should not move forward.

## C.2 Managing the current work portfolio

ISO/TC 301 reviews the existing work portfolio on a routine basis, and through the ISO systematic review process. ISO/TC 301 has assigned Task Group 5 Maintenance the responsibility to review the existing portfolio and provide recommendations to ISO/TC 301. ISO/TC 301 members may use the recommendation and related information in their mirror committee review process. If a project does proceed to revision, the project commits to using the harmonized definitions of ISO/TC 301.

## C.3 Task Groups and Ad Hocs

Task groups are established by ISO/TC 301 as needed typically for topics that are horizontal within ISO/TC 301 examples include terminology, maintenance, and communication. These groups are established as needed and disbanded when they have completed their activities. Ad Hoc groups are used to address specific topics or explore potential new work. These are managed through a term of reference (TOR) that defines the membership, deliverables, and timeframe.

## C.4 Resources for Working Groups and Ad Hocs on writing standards

ISO provides several resources to members to assist with the writing process. Some of the resources are provided as links below:

- <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100440.pdf><https://www.iso.org/developing-standards.html>
- <https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/guidance-for-writing-standards-for-smes.pdf>
- [https://www.iso.org/files/live/sites/isoorg/files/developing\\_standards/docs/en/how-to-write-standards.pdf](https://www.iso.org/files/live/sites/isoorg/files/developing_standards/docs/en/how-to-write-standards.pdf)
- <https://www.iso.org/publication/PUB100429.html>
- <https://www.iso.org/publication/PUB100438.html>

Additional resources can be found on the [www.iso.org](http://www.iso.org) site. Should experts in ISO/TC 301 need assistance with locating resources, they may request assistance from the Committee Manager.

## Annex D

The current portfolio of ISO/TC 301 is very diverse and represents several different key areas see figure D.1. However, the focus agreed by ISO/TC 301 is to provide additional support in decarbonization and climate mitigation of energy emissions.

### Currently Available ISO/TC 301 Standards and Other Resources:

Title and links to the ISO website and On-Line Browsing Platform	Scope (partial)
ISO 50001 Energy management systems — Requirements with guidance for use  <a href="https://www.iso.org/standard/69426.html">https://www.iso.org/standard/69426.html</a> <a href="https://www.iso.org/obp/ui#iso:std:iso:50001:ed-2:v1:en">https://www.iso.org/obp/ui#iso:std:iso:50001:ed-2:v1:en</a>	This document specifies requirements for establishing, implementing, maintaining and improving an energy management system (EnMS). The intended outcome is to enable an organization to follow a systematic approach in achieving continual improvement of energy performance and the EnMS.
ISO 50002 Energy audits — Requirements with guidance for use  <a href="https://www.iso.org/standard/60088.html">https://www.iso.org/standard/60088.html</a> <a href="https://www.iso.org/obp/ui#iso:std:iso:50002:ed-1:v1:en">https://www.iso.org/obp/ui#iso:std:iso:50002:ed-1:v1:en</a>	This International Standard specifies the process requirements for carrying out an energy audit in relation to energy performance. It is applicable to all types of establishments and organizations, and all forms of energy and energy use.
ISO 50003 Energy management systems — Requirements for bodies providing audit and certification of energy management systems  <a href="https://www.iso.org/standard/77575.html">https://www.iso.org/standard/77575.html</a> <a href="https://www.iso.org/obp/ui/#iso:std:iso:50003:ed-2:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50003:ed-2:v1:en</a>	This document specifies requirements for competence, consistency and impartiality in the auditing and certification of <a href="#">ISO 50001</a> energy management systems (EnMS) for bodies providing these services. In order to ensure the effectiveness of EnMS auditing, this document addresses the auditing process, the competence requirements for the personnel involved in the certification process for EnMS, the audit time and multi-site sampling.
ISO 50004 Energy management systems — Guidance for the implementation, maintenance and improvement of an ISO 50001 energy management system  <a href="https://www.iso.org/standard/74863.html">https://www.iso.org/standard/74863.html</a> <a href="https://www.iso.org/obp/ui/#iso:std:iso:50004:ed-2:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50004:ed-2:v1:en</a>	This document gives practical guidelines and examples for establishing, implementing, maintaining and improving an energy management system (EnMS) in accordance with the systematic approach of <a href="#">ISO 50001:2018</a> . The guidance in this document is applicable to any organization.

<p>ISO 50005          Energy management systems — Guidelines for a phased implementation</p> <p><a href="https://www.iso.org/standard/76428.html">https://www.iso.org/standard/76428.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50005:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50005:ed-1:v1:en</a></p>	<p>This document gives guidance for organizations on establishing a phased approach to implement an energy management system (EnMS). This phased approach is intended to support and simplify the implementation of an EnMS for all types of organizations, in particular for small and medium-sized organizations (SMOs).</p>
<p>ISO 50006          Energy management systems — Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) — General principles and guidance</p> <p><a href="https://www.iso.org/search.html?q=ISO%2050006">https://www.iso.org/search.html?q=ISO%2050006</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50006:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50006:ed-1:v1:en</a></p>	<p>This International Standard provides guidance to organizations on how to establish, use and maintain energy performance indicators (EnPIs) and energy baselines (EnBs) as part of the process of measuring energy performance.</p>
<p>ISO 50007 Energy services — Guidelines for the assessment and improvement of the energy service to users</p> <p><a href="https://www.iso.org/standard/51870.html">https://www.iso.org/standard/51870.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50007:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50007:ed-1:v1:en</a></p>	<p>This document addresses the relevant elements of energy service provided by energy suppliers to users. It envisages energy service as including two broad categories:</p> <ul style="list-style-type: none"> <li>• — energy supply/generation and distribution;</li> <li>• — advice on and improvement to energy efficiency.</li> </ul> <p>This document provides best practice guidelines for energy service providers in order to continually improve their practices and quality of interaction with users.</p>
<p>ISO/TS 50008 Energy management and energy savings — Building energy data management for energy performance — Guidance for a systemic data exchange approach</p> <p><a href="https://www.iso.org/standard/51871.html">https://www.iso.org/standard/51871.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:ts:50008:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:ts:50008:ed-1:v1:en</a></p>	<p>This document gives guidelines for how the energy management team (EnMT) in an organization can define, request and regularly access the data and information needed to implement an energy management system (EnMS) designed to continually improve energy performance in buildings.</p>
<p>ISO 50009 Energy management systems — Guidance for implementing a common energy management system in multiple organizations</p>	<p>This document gives guidelines for establishing, implementing, maintaining and improving a common energy management system (EnMS) for multiple organizations.</p>
<p>ISO/PAS 50010 Energy management and energy savings — Guidance for net zero energy in operations using an ISO 50001 energy management system</p>	<p>This document gives guidance on the use of an energy management system (EnMS) in accordance with <a href="#">ISO 50001:2018</a> to achieve net</p>

<p><a href="https://www.iso.org/standard/51873.html">https://www.iso.org/standard/51873.html</a>  <a href="https://www.iso.org/obp/ui#iso:std:iso:pas:50010:ed-1:v1:en">https://www.iso.org/obp/ui#iso:std:iso:pas:50010:ed-1:v1:en</a></p>	<p>zero energy (NZE), and supports the achievement of net zero carbon (NZE) and other sustainability goals. It describes how to establish an enhanced EnMS designed to achieve:</p>
<p>ISO 50015        Energy management systems — Measurement and verification of energy performance of organizations — General principles and guidance</p> <p><a href="https://www.iso.org/standard/60043.html">https://www.iso.org/standard/60043.html</a>  <a href="https://www.iso.org/obp/ui#iso:std:iso:50015:ed-1:v1:en">https://www.iso.org/obp/ui#iso:std:iso:50015:ed-1:v1:en</a></p>	<p>This International Standard establishes general principles and guidelines for the process of measurement and verification (M&amp;V) of energy performance of an organization or its components. This International Standard can be used independently, or in conjunction with other standards or protocols, and can be applied to all types of energy.</p>
<p>ISO 50021        Energy management and energy savings — General guidelines for selecting energy savings evaluators</p> <p><a href="https://www.iso.org/standard/67850.html">https://www.iso.org/standard/67850.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50021:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50021:ed-1:v1:en</a></p>	<p>This document gives guidelines for selecting energy savings evaluators to determine ex-post (realized) energy savings for projects, organizations and regions. It gives general principles and identifies the key factors to consider. It also defines roles and responsibilities, recommends the required competence and provides key elements for assessing the knowledge and skills of energy savings evaluators.</p>
<p>ISO/TS 50044        Energy saving projects (EnSPs) — Guidelines for economic and financial evaluation</p> <p><a href="https://www.iso.org/standard/67789.html">https://www.iso.org/standard/67789.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:ts:50044:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:ts:50044:ed-1:v1:en</a></p>	<p>This document gives guidelines for how to compare and prioritize energy saving projects (EnSPs) before implementation, using economic and financial evaluation. It includes a common set of principles.</p>
<p>ISO 50045 Technical guidelines for the evaluation of energy savings of thermal power plants</p> <p><a href="https://www.iso.org/standard/67849.html">https://www.iso.org/standard/67849.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50045:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50045:ed-1:v1:en</a></p>	<p>This document gives general technical guidelines for evaluating energy savings of thermal power plants before and/or after implementing energy performance improvement action(s) (EPIAs). It includes evaluation, unit component efficiency, indexes calculation, analyses and reporting.</p>
<p>ISO 50046 General methods for predicting energy savings</p> <p><a href="https://www.iso.org/standard/67790.html">https://www.iso.org/standard/67790.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50046:ed-2:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50046:ed-2:v1:en</a></p>	<p>This document specifies general methods for the calculation of predicted energy savings (PrES), using measure-based calculation methods, also known as bottom-up or energy performance improvement actions (EPIAs)-based methods (see <a href="#">ISO 17742</a>). Indicator-based methods (see <a href="#">ISO 17742</a>) and total-consumption-based methods (see <a href="#">ISO 50047</a>) are not included in the scope of this document.</p>

<p>ISO 50047          Energy savings — Determination of energy savings in organizations</p> <p><a href="https://www.iso.org/standard/51910.html">https://www.iso.org/standard/51910.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:50047:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:50047:ed-1:v1:en</a></p>	<p>This International Standard describes approaches for the determination of energy savings in organizations. It can be used by all organizations, whether or not they have an energy management system, such as <a href="#">ISO 50001</a>.</p>
<p>ISO/IEC 13273-1 Energy efficiency and renewable energy sources — Common international terminology — Part 1: Energy efficiency</p> <p><a href="https://www.iso.org/standard/62606.html">https://www.iso.org/standard/62606.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso-iec:13273:-1:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso-iec:13273:-1:ed-1:v1:en</a></p>	<p>This part of ISO/IEC 13273 contains transverse concepts and their definitions in the subject field of energy efficiency. This horizontal standard is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 108.</p>
<p>ISO/IEC 13273-2 Energy efficiency and renewable energy sources — Common international terminology — Part 2: Renewable energy sources</p> <p><a href="https://www.iso.org/standard/62607.html">https://www.iso.org/standard/62607.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso-iec:13273:-2:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso-iec:13273:-2:ed-1:v1:en</a></p>	<p>This part of ISO/IEC 13273 contains transversal concepts and their definitions in the subject field of renewable energy sources. This horizontal standard is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 108.</p>
<p>ISO 17741          General technical rules for measurement, calculation and verification of energy savings of projects</p> <p><a href="https://www.iso.org/standard/60373.html">https://www.iso.org/standard/60373.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:17741:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:17741:ed-1:v1:en</a></p>	<p>This International Standard specifies the general technical rules for measurement, calculation and verification of energy savings in retrofits projects or new projects.</p>
<p>ISO 17742 Energy efficiency and savings calculation for countries, regions and cities</p> <p><a href="https://www.iso.org/standard/60374.html">https://www.iso.org/standard/60374.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:17742:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:17742:ed-1:v1:en</a></p>	<p>This International Standard provides a general approach for energy efficiency and energy savings calculations with indicator-based and measure-based methods for the geographical entities countries, regions, and cities.</p>
<p>ISO 17743 Energy savings — Definition of a methodological framework applicable to calculation and reporting on energy savings</p> <p><a href="https://www.iso.org/standard/60376.html">https://www.iso.org/standard/60376.html</a>  <a href="https://www.iso.org/obp/ui/#iso:std:iso:17743:ed-1:v1:en">https://www.iso.org/obp/ui/#iso:std:iso:17743:ed-1:v1:en</a></p>	<p>This International Standard establishes a methodological framework that applies to the calculation and reporting of energy savings from existing (implemented) and prospective measures and actions which intend to save energy. This framework standard will be applicable to other standards in the field of energy saving determination.</p>



## Standards and Other Resources Proposed or Currently Under Development

Title (at present)	Scope (Draft)
ISO 50002-1 Energy audits — General Requirements with guidance for use <a href="https://www.iso.org/standard/83645.html">https://www.iso.org/standard/83645.html</a>	Revision of current scope of 50002: This International Standard specifies the process requirements for carrying out an energy audit in relation to energy performance. It is applicable to all types of establishments and organizations, and all forms of energy and energy use.
ISO 50002-2 Specific Requirements with guidance for use for buildings <a href="https://www.iso.org/standard/83662.html">https://www.iso.org/standard/83662.html</a>	Under development
ISO 50002-3 Specific Requirements with guidance for use for processes <a href="https://www.iso.org/standard/83663.html">https://www.iso.org/standard/83663.html</a>	Under development
ISO TS 50011 – Assessing energy management using ISO 50001:2018 <a href="https://www.iso.org/standard/81286.html">https://www.iso.org/standard/81286.html</a>	This document gives guidance based on ISO 50001:2018, on a way to measure the status of energy management in an organization. The measurement results are described by using three scores: structure management score (SMS), operation management score (OMS) and target achievement score (TAS). This document presents methodologies on how the basic and advanced scores can be calculated.

## ISO Standards by Key Market Needs

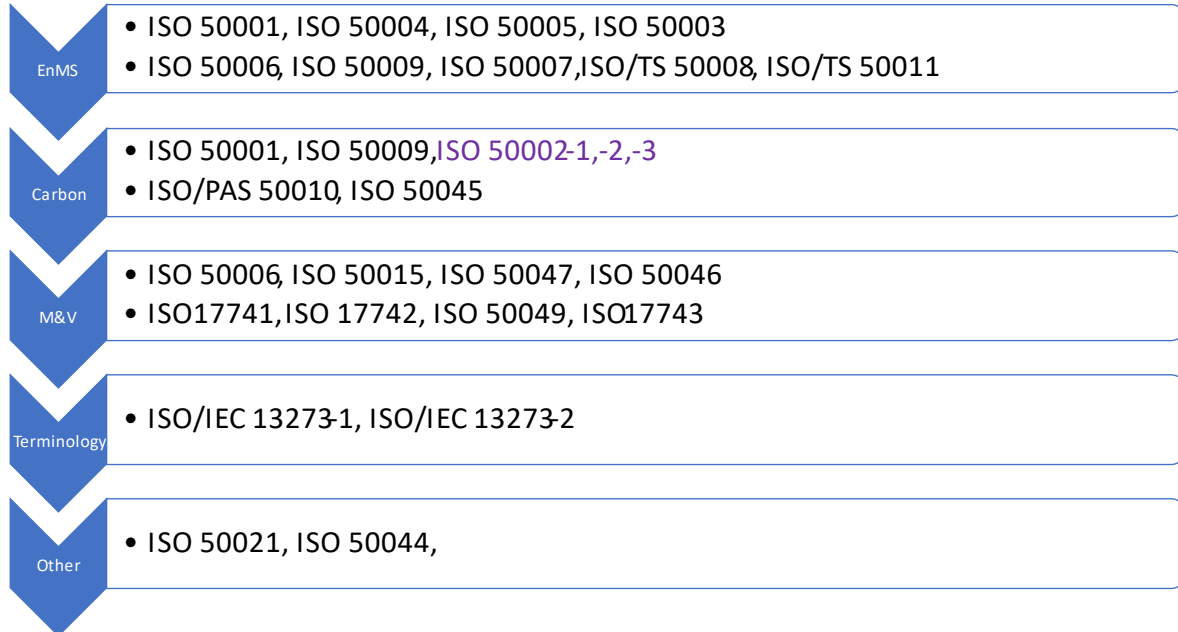


Figure D.1 ISO/TC 301 Standards by Key Market Need