

A guide to: ISO 50001:2018 – Energy Management Standard

The standard helping organizations to continually improve their energy performance and management



Who should be interested in the Energy Management Standard?

If you want to continually improve the energy performance of your organization and its supporting management system, then BS EN ISO 50001:2018 is for you.

Regardless of your organization's size, location or industry, this standard can help you reduce energy costs, comply with legislation and increase your sustainability. It does so irrespective of the quantity of energy you currently use or the types of energy you consume.

If you are responsible for managing energy within your organization or are a senior leader looking to integrate better energy management into your business strategy and transform how you manage energy, the revised ISO 50001 Energy Management Standard can help.

Why the interest in energy management – what's the opportunity?

A healthy economy depends on a healthy environment. Energy is essential in the production of goods and services and, as our industries have grown, so has our energy use. The scale of our negative environmental impact, both on our planet and its populations, has never been greater. To ensure our businesses can continue to thrive, it is in everyone's interest to safeguard our environment.

Governments, the world over, need everyone to embrace efficient production and operating processes. That's why organizations are being regulated and encouraged to:

- ✔ improve their energy performance and that of their supply chains
- ✔ reduce greenhouse gas emissions
- ✔ invest in clean energy technologies and infrastructure.

Organizations are now taking increased responsibility to improve how they manage their energy, identify risks and opportunities, and become more resilient. The Energy Management Standard enables you to achieve effective energy management and performance, whilst meeting associated legal requirements.



“A 20% cut in energy costs represents the same bottom line benefit as a 5% increase in sales in many businesses.”

The Carbon Trust

How can energy management benefit my business?

Whether you are legally obligated or simply a responsibly-minded organization, better managing your energy is a great idea that can save you energy and money. A good energy management system gives you a handle on your organization's energy use. It ensures you understand how your organization uses energy for manufacturing, heating, cooling and lighting etc and the various opportunities to reduce your energy usage.

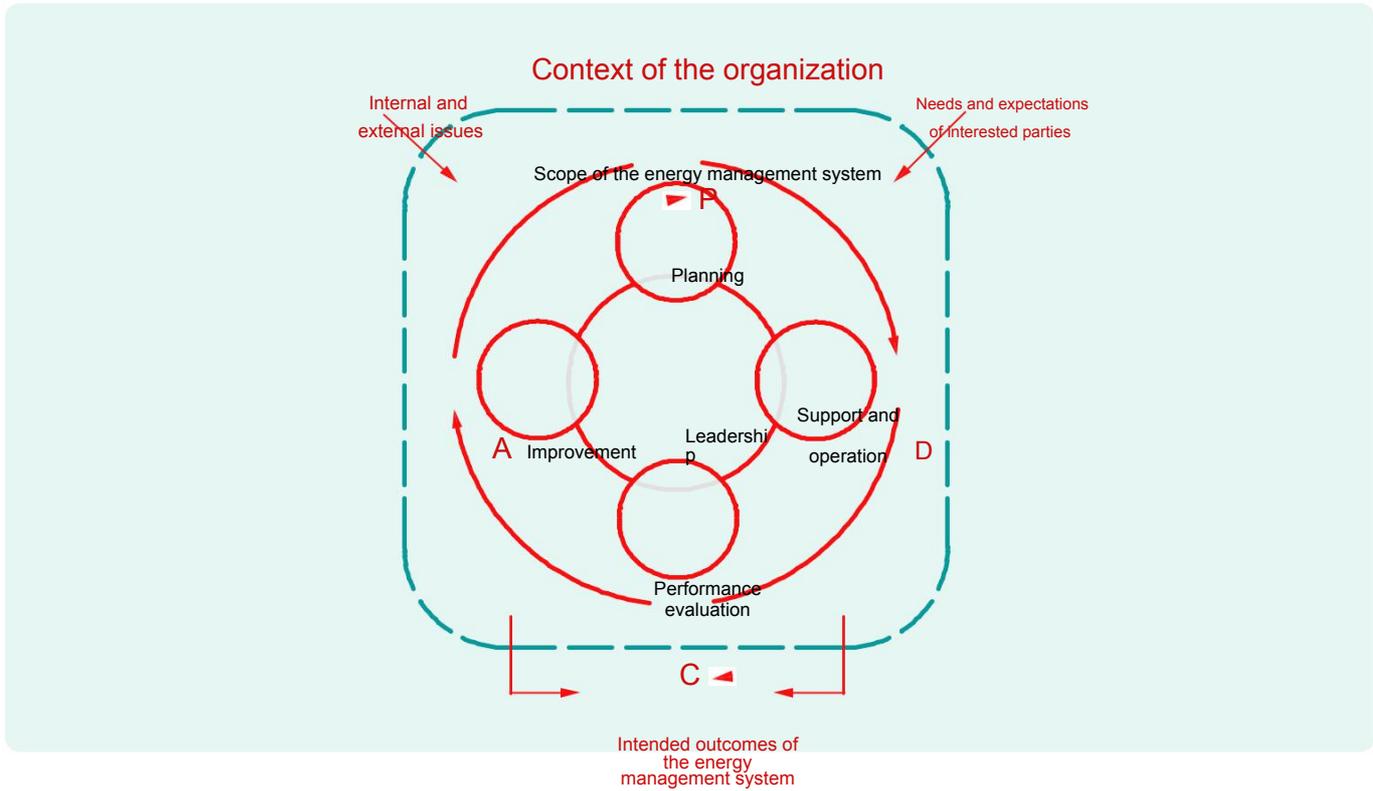
Once you have a list of opportunities, how do you implement them? How do you continually seek to control and improve? The standard's energy management system is all about proactively planning and embedding the right practices and behaviours to continually improve your organization's energy performance. It aligns energy improvements with the strategy of the organization, engaging across the organization to put in place a system to continually seek improvements in energy use, whether in operations, procurement, design or retrofits. Doing this well, through a structured manner, has been demonstrated to save energy, costs and CO₂ emissions.

Key aspects of the Energy Management Standard

ISO 50001:2018 outlines the energy management processes considered to be the current best practice globally. It provides a shortlist of activities for establishing policies, processes, procedures and specific energy-tasks to meet your organization's energy objectives. It requires the organization to define the desired energy performance, and work towards achieving the stated objective.

As with other ISO management system standards, the energy management system in ISO 50001 is based on the Plan, Do, Check and Act framework.

It outlines what to think about and implement at each stage, to incorporate energy management into existing organizational processes, such as:



How to: Implement an energy management system

- Secure critical leadership commitment
- Put the right expertise and support in place to secure success
- Establish a data-driven and facts-based process that drives continual improvement
- Evaluate compliance with legal and other requirements
- Align and review policies, procedures and action plans
- Put structures in place to identify system non-conformity and rectify it



How to: Improve your energy performance

- Identify risks and opportunities related to your energy performance
- Determine your current performance
- Set energy objectives and targets - and plans to achieve them
- Identify and gather data to track your ongoing performance
- Measure changes to your energy performance
- Credibly demonstrate measurable improvements

Clause Mapping Guide ISO 50001: 2011 to ISO 50001: 2018

ISO 50001:2011		ISO 50001:2018	
Introduction			Introduction
Scope	1	1	Scope
Normative references	2	2	Normative references
Terms and definitions	3	3	Terms and definitions
		4	Context of the organization
		4.1	Understanding the organization and its context
Energy management system requirements	4		
General requirements	4.1	4.3	Determining the scope and boundaries of the energy management system
		4.4	Energy management system (EnMS)
Management responsibility	4.2	5.1	Leadership and commitment
Top management	4.2.1	4.3	Determining the scope and boundaries of the energy management system
		5.1	Leadership and commitment
		7.1	Resources
Management representative	4.2.2	5.1	Leadership and commitment
		5.3	Organization roles, responsibilities and authorities
Energy Policy	4.3	5.2	Energy policy
Energy planning	4.4	6	Planning
General	4.4.1	6.1	Actions to address Risks and Opportunities
Legal requirements and other requirements	4.4.2	4.2	Understanding the needs and expectations of interested parties
Energy review	4.4.3	6.3	Energy review
		6.1	Actions to address Risks and Opportunities
Energy baseline	4.4.4	6.5	Energy baseline
Energy performance indicators	4.4.5	6.4	Energy performance indicators

Energy objectives, energy targets and energy management action plans	4.4.6	6.2	Objectives, energy targets and planning to achieve them
Implementation and operation	4.5	7	Support
		8	Operations
General	4.5.1		
Competence, training and awareness	4.5.2	7.2	Competence
		7.3	Awareness
Communication	4.5.3	7.4	Communication
Documentation	4.5.4	7.5	Documented information
		7.5.1	General
		7.5.2	Creating and updating
		7.5.3	Control of documented information
Operational control	4.5.5	8.1	Operations planning and control
Design	4.5.6	8.2	Design
Procurement of energy services, products, equipment and energy	4.5.7	8.3	Procurement
Checking	4.6	9	Performance evaluation
Monitoring measurement and analysis	4.6.1	9.1	Monitoring, measurement, analysis and evaluation of energy performance and the EnMS
		6.6	Planning for collection of energy data
Evaluation of compliance with legal requirements	4.6.2	9.1.2	Evaluation of legal and other requirements.
Internal audit of the EnMS	4.6.3	9.2	Internal EnMS audit
Nonconformities, correction, corrective action and preventive action	4.6.4	10.1	Nonconformity and corrective action
Control of records	4.6.5	7.5	Documented information
Management review	4.7	9.3	Management review
		10.2	Continual improvement
		10	Improvement

How will the Energy Management Standard benefit my organization?

Implementing this standard provides a systematic way to continually improve your organization's energy performance and energy management system. Drawing on the knowledge and experience of energy management experts globally, the standard does not dictate what your organization's energy targets should be or how your energy performance improvement will be

demonstrated. It will help you reduce your energy costs, grow more sustainably, become more resilient and comply with legislation.

Many UK organizations use the standard as a tool to assess and improve their energy management, others choose to formally achieve certification to the standard.



Improved financial performance

- Increases your understanding of: what types of energy you use; how much you are using/wasting, and; how much it's costing
- Gives you the tools to reduce energy use and energy consumption, and/or increase energy efficiency, thus lower your energy bills and become more competitive
- Enhances resilience by reducing your reliance on fossil fuels and energy supply



Improved business integration

- Enables you to take a structured approach to integrating energy management into your business practice
- Takes a business-orientated approach to identify and manage energy as a risk to the organization.



Improved compliance

- Improves your compliance with energy legislation, regulation and overall climate change mitigation goals
- Certification to this standard continues to be an approved compliance route to meeting the requirements of Energy Savings Opportunity Scheme Regulations (ESOS)



Improved reputation

- Establishes a process for continual energy performance improvement
- Helps you meet your environmental and carbon reduction targets

How does the 2018 revision differ from the 2011 standard?

The intended outcome of this standard – achieving continual improvement of energy performance and the energy management system – has not changed. However, since the 2011 standard was first published, knowledge, technology and regulations have evolved. The revised standard reflects learnings from 7 years of use in companies of all sizes, across the UK and globally, and enhances strategic alignment within organizations.

Key changes in the 2018 Energy Management Standard:

- Improved compatibility with other ISO management system standards (e.g. **ISO 14001**, **ISO 9001**, **ISO 45001**) as the revised standard is based on ISO's Annex SL, the high-level structure (HLS)
- Provides greater clarification of existing concepts and includes new definitions including energy performance improvement
- Improved sections on collecting data and normalization
- Stronger emphasis on the responsibility of leadership

How can standards benefit my organization?

Standards are knowledge. They are agreed ways of doing things. They are based on the collective wisdom of those with expertise in their subject matter. Standards are powerful tools – they help make Organizations more successful.

A standard can be about making a product, delivering a service, supplying materials or managing a process. Standards, in essence, act as 'a guide to good practice'. Standards cover a huge range of activities and QMSCERT's portfolio extends to more than 10,000 of them! We are world leaders in standards.

Our expertise at QMSCERT / QMS ITALIA is developing standards solutions that help organizations perform better and deliver value. Every standard we design is for voluntary use. But, the advice and guidance contained within our standards can help your organization embed excellence, improve performance, reduce risk and achieve sustainable growth.

“Adopting this standard is now seen as an important aspect of engaging with staff, customers, stakeholders, etc. The message being that ‘working to this standard shows we are committed to avoiding energy wastage and reducing our greenhouse gas emissions’. The updated version has been refined to include input from the experience of existing users and the energy management profession, in relation to the earlier version. We look forward to the ongoing uptake of ISO 50001.”

“Effective energy management is an essential aspect of any successful business. It is indispensable in helping to improve efficiency, save money and reduce carbon emissions. ISO 50001 is widely considered as the benchmark standard for energy management worldwide and the Energy Institute sees the revised ISO 50001:2018 version as a crucial tool for energy management professionals working in this sphere.”

“ISO 50001 can help organizations contribute to the UN’s Sustainable Development Goal 7 on Affordable and clean energy and the UK Government’s 25-year Environment Plan.”

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