

Key changes in ISO 50001:2018 compared with the 2011-edition

These are some of the changes to consider:

1) Changes due to the adoption of HLS

- **New clause for understanding the organization and its context (4.1)**
An organization shall determine external and internal issues relevant to its purpose and that affect its ability to achieve the intended outcomes of its energy management system (EnMS) and improve its energy performance. This can be considered as a high level understanding of influential factors affecting, negatively or positively, energy performance and the EnMS of the organization.
- **New clause for systematic determination of the needs and expectations of interested parties (4.2)**
The intent is to use the contextual information to identify the interested parties relevant to energy performance and the EnMS, and their needs and expectations (requirements) from a high-level perspective.
- **Strengthened emphasis on leadership and top management commitment**
Chapter 5.1 includes new demands to actively engage and demonstrate leadership for the effectiveness of the energy management system.
- **Risk and opportunity management**
Chapter 6.1 requires to determine, and where necessary, take action to address any risks or opportunities that may impact (either positively or negatively) the ability of the management system to deliver its intended results. Note that considerations of risk and opportunities are part of the high-level strategic decision-making in an organization. By identifying risks and opportunities when planning the EnMS, an organization is able to anticipate potential scenarios and consequences so that undesired effects can be addressed before they occur. Similarly, favourable considerations or circumstances that could offer potential advantages or beneficial outcomes can be identified and pursued. This process can be regarded as complementary to 6.3 “Energy review”, which is a more detailed operational review in order to control and improve the energy performance.
- **Competence (7.2)**
Requires an organization to determine the necessary competence of person(s) doing work under its control and that affects its energy performance and EnMS. In addition to evaluate effectiveness of actions taken to acquire necessary competence.
- **Extended requirements related to communications (7.4)**
 - Includes also external communication, not solely internal communication.
 - It is more prescriptive in respect of the “mechanics” of communication, including determination of what, when, how and who to communicate and with whom to communicate.
 - Requires that communicated information shall be consistent with information generated within the EnMS.

- **Operational planning and control (8.1)**

Some add-ons in the requirements to be noted:

- Control of changes and review the consequences of unintended changes (from HLS)
- Ensuring the control of outsourced significant energy uses (SEU) or processes related to SEUs
- Documented information to be kept to the extent necessary to have confidence that processes have been carried out as planned (from HLS)

- **Monitoring, measurement, analysis and evaluation of energy performance and the EnMS (9.1)**

Additional requirements:

- required to determine methods for monitoring, measurements, analysis and evaluation
- unambiguous requirements for documented information, both from investigation and response after deviations in energy performance as well as from results from monitoring and measurements

- **Management review (9.3)**

Some additional inputs and outputs to be considered for the energy management review

2) Changes that are specific to energy management

- **The Scope (4.3)**

- Explicit that energy types within the scope and boundaries of the EnMS shall not be excluded.
- Organizations shall ensure that it has the authority to control its energy efficiency, energy use and energy consumption within the scope and boundaries

- **Energy review (6.3)**

Clarified process related to significant energy uses (SEU) to make a more logic “flow” and connected criteria: Identify SEUs => For each SEU define the relevant variables, current energy performance and identify persons that influence or affect the SEU

- **Energy performance indicators (6.4)**

Some amendments:

- Determined energy performance indicators (EnPIs) shall enable the organization to demonstrate energy performance improvement
- When the organization has data indicating that relevant variables significantly affect energy performance, such data shall be considered to establish appropriate EnPI(s) to make sure the EnPI is “fit for purpose”

- The EnPI value(s) shall be retained as documented information. (Note: As also required in 2011, the method for determining and updating the EnPIs shall be documented)

- **Energy baseline (6.5)**

Changes to be noted:

- Where the organization has data indicating that relevant variables significantly affect energy performance, the organization shall carry out normalization of the EnPI(s) and corresponding energy baseline to compare energy performance changes.
- New definitions for “static factor”, “relevant variable” and “normalization” (3.4.8-3.4.10)
- The baseline shall be revised when there are “major changes to the static factors”.

- **Planning for collection of energy data (6.6)**

This term replaces the “energy measurement plan” in the 2011-edition. Add-ons are:

- Explicitly states that “The plan shall specify the data which is necessary to monitor the key characteristics and state how and at what frequency the data shall be collected and retained”.
- Explicitly addresses for what “areas” data shall be collected: “Data to be collected (or acquired by measurement as applicable) and retained as documented information shall include:
 - ✓ the relevant variables related to SEUs;
 - ✓ energy consumption related to SEUs and to the organization;
 - ✓ operational characteristics related to SEUs;
 - ✓ static factors, if applicable;
 - ✓ data specified in action plans.
- The energy data collection plan shall be reviewed at defined intervals and updated as appropriate

Some other changes to be noted

- **Design (8.2)**

This is to large extent similar to 4.5.6 in the 2011-edition, but the following amendment should be noted: Explicitly states that performance over the planned or expected operating lifetime shall be looked at when considering energy improvement opportunities and operational control in the design of new, modified and renovated facilities, equipment etc. that can have a significant impact on its energy performance.

- **8.3 “Procurement”**

This is to large extent similar to 4.5.7 in the 2011-edition, but the following amendment should be noted:

It is explicitly required that specifications are defined (as applicable) for the procurement of equipment and services, but now also for purchasing of energy.

- **Chapter 3 Terms and definitions:**

- 40 terms are defined vs 28 in the 2011-edition.
 - 18 terms are new. 13 of the new terms are adopted from the HLS, while 5 are new energy specific terms
 - The 5 energy specific terms are: “energy performance improvement”, “static factors”, “relevant variables”, “normalization” and “energy performance indicator value (EnPI value)”. These should be noted as they help provide clarity.
 - 5 terms from 2011-edition have been discontinued. These are: “energy services”, “correction”, “preventive action”, “record” and “procedure”
- The HLS does not include a specific clause for or refer to the term “Preventive action”. However, the concept of preventive action is considered to be implicitly embedded in the standards (e.g. through 4.1, 4.2, 6.1)
 - “Documented information” is now the term used as replacement of ‘Documents’ and ‘Records’
 - The term “Management representative” is no longer used, however all responsibilities addressed to this role in the 2011-edition is now addressed to the energy management team