

Implementation and operation

4.1. Competence, training and awareness

ISO 50001 (SECTION 4.5.2) DEFINES THAT:

- Competence, training and awareness are fundamental aspects in order to improve LAs' energy performance. Personnel involved in the EnMS should be adequately and periodically trained on specific energy aspects. Training activities could help the LA to avoid deviations in the LA's energy performance.

WHAT DOES IT MEAN IN A PRACTICAL SENSE FOR LAs?

All the members of the Energy Team should have a certain competence. It is up to LA to set the level of the competence and verify that the respective member actually corresponds. For example, LA can decide that Energy Manager should have higher education. This means that LA should be able to prove with respective documentation (i.e. diploma) that the current Energy Manager and/or new person assign to this role corresponds this criterion.

The LA should design and implement a training plan for its personnel dedicated to EnMS. The training plan must comply with both the objectives of the EnMS and the training needs of the personnel involved. The LA should establish in a specific procedure the adopted criteria and responsibilities for defining the energy training needs of the employees of the LA, and to ensure the necessary awareness-raising of both internal staff, and external personnel working on behalf of the LA, whose activities can influence aspects related to significant energy uses.

Training topics can range from the energy management of certain equipment, technical facilities and/or processes, to awareness-raising about legal requirements relevant to energy, to the design and monitoring of energy uses, to exploration of behavioural aspects to energy, etc.

For training, a LA can use online courses dedicated to public administration employees, specific courses which issue training credits or even rely on external professionals for a specialized training course.

HOW IS IT DOCUMENTED IN AN ENMS?

In the manual, a brief description of current training practices could be included and references to relevant procedures and/or databases (i.e. a registry⁹). Procedures should describe in more detail how skill-building relates to specific responsibilities, methodologies, access to the registry, etc., and how they align with requirements already set out within the ISO 50001 standard for building up necessary competences.

SOME IDEAS AND SUGGESTIONS WHERE TO START:

- It is recommended to verify the relevant skills of internal staff working on the EnMS, especially for Management Representatives, the Energy Manager and all members of the Energy Team.
- It can help to start by mapping out the strengths and weaknesses of the Team at large in terms of existing knowledge on energy management and related activities, and then using this information as the basis for a first training plan.
- A specific training path should be created which is coherent with the role and capacities of the personnel involved in the EnMS.

QUESTIONS THAT OFTEN RISE IN THIS RESPECT AND ANSWERS TO THEM?

⁹ Even a table in a spreadsheet or a simple text document can serve as this registry for EnMS purposes.

- Q: WHY DOES ISO 50001 BOTHER TALKING ABOUT COMPETENCES, TRAINING AND AWARENESS?
 - In ISO 50001, continuous improvement is a requirement that applies not only to the LA's energy performance, but also refers to the continually-improved ability of internal personnel to properly address energy management. Therefore, the aspect of training serves an important function for a number of reasons:
 - It helps the LA comply with its own Energy Policy and EnMS procedures;
 - It is a responsibility of the personnel and authorities to ensure fulfilment of the requirements of the EnMS;
 - Properly educated personnel can more easily ensure efficient energy use by the LA's assets to facilitate better and continuous energy performance;
 - Impacts on the energy uses of the LA's activities are more effectively analysed and monitored when done by capable personnel.
- Q: WHY IS IT IMPORTANT?
 - By identifying the training needs associated with the operations and control of the LA's significant energy uses, the way forward becomes much clearer, as the LA is able to maintain its own group of competent people who become better-equipped to achieve positive results from the implementation of the EnMS.
- Q: HOW TO FULFIL TRAINING REQUIREMENTS IF WE HAVE LIMITED STAFF CAPACITIES?
 - ISO 50001 standard does not set requirements about the number of annual trainings. So, the quantity is not the issue, but rather the quality and the real needs for the training. This means that the LA sets its own requirements for the training based on its own needs. Employees often attend different workshops and trainings (e.g. about application of new criteria for green procurement, new energy efficiency requirements for public buildings, etc.). Usually such attendance is not recorded anywhere, but in an EnMS, such a registry is often introduced to keep track of progress made in staff competences and other kinds of awareness-raising.

4.2. Communication

ISO 50001 (4.5.3) DEFINES THAT:

- The LA should communicate internally with regard to its own energy performance. Any person working for, or on behalf of the LA should receive appropriate communications and be able to make their own comments or suggestions to improve performance. LAs should include also energy suppliers, energy products' suppliers, and any other relevant person or organizations who can positively or negatively affect the LAs' own energy performance.

WHAT DOES IT MEAN IN A PRACTICAL SENSE FOR LAs?

The energy performance of any organization implementing EnMS should always be communicated at pre-established time intervals. This means that the LA should establish its own methods of communication both internally and externally.

The LA should establish and implement a process by which any person working for, or on behalf of, the LA is informed about the EnMS and its objective, can make comments or suggest improvements to the EnMS. Such a mechanism (e.g. internal meetings, special IT/email support, etc.) can help capture perspectives that might otherwise be missed by those deeply involved in the EnMS, such as testimonies of on-site energy performance, observations related to facilities' interventions, suggestions for improvement or even reports of malfunctions or other problems.

It is up to LA to decide on the level of external communication. External communication concerns two types of modes in the EnMS context:

- External passive communications are a response to requests and queries coming from outside the LA, and can include reports of malfunctioning of technical equipment or facilities, requests for interventions, etc. from interested external parties.
- External active communications are carried out on the LA's own initiative to disseminate about its own energy performance or other aspects of its EnMS development, implementation and monitoring. Sometimes LAs combine this with the SE(C)AP communication activities.

HOW IS IT DOCUMENTED IN AN ENMS?

In the manual, a brief description of current communication practices could be included and references to relevant procedures and/or databases, which should describe in more detail how communication relates to LA responsibilities, methodologies, access to the registry, etc., and how they align with requirements already set out within the ISO 50001 standard for communications.

SOME IDEAS AND SUGGESTIONS WHERE TO START:

The first step should be to identify and analyze how communications within and outside the LA are currently done, trying to assess whether any improvements can, and are allowed, to be made. It may prove useful to map out key components of the system by asking yourself the following questions:

- Which kinds content does the LA typically communicate internally/externally? How, when and to whom?
- Which recipients receive active and passive communications?
- Who sends out active communications and/or responds to passive communications?
- What about the EnMS process do you want to communicate internally/externally? How, when and to whom?

QUESTIONS THAT OFTEN RISE IN THIS RESPECT AND ANSWERS TO THEM?

- Q: WHY DO WE NEED TO COMMUNICATE ABOUT ENMS AND ENERGY ISSUES TO OTHER LA STAFF, OR EVEN TO OUTSIDE STAKEHOLDERS?
 - Other people working for the LA, on its behalf or for key external stakeholders of the LA should be informed about their own effects on the LA's energy performance as they are themselves energy users.
 - Opening up such communication channels with them allows the LA to receive from these people suggestions and observations it might otherwise miss for the purpose of improving the energy performance of the LA.
 - The LA may even decide it's worth communicating (e.g. through its website or other tools) about its own energy performance to citizens and types of stakeholders (e.g. to demonstrate a positive example for them to follow).
- Q: WHICH SPECIALISTS FROM THE LA CAN BE INVOLVED IN THE COMMUNICATION ACTIVITIES?
 - There are many channels which the LA could pursue in communicating about its EnMS activities, including school offices (i.e. which are commonly municipal-held assets), the public relations office, the environmental department, the general secretariat office, the quality and evaluation office, etc.

4.3. Documentation

ISO 50001 (SECTION 4.5.4) DEFINES THAT:

- The LA should document a set of EnMS documentation and how the LA ensures control of this documentation.

WHAT DOES IT MEAN IN A PRACTICAL SENSE FOR LAs?

The LA should define the format and modality with which it issues and records its own documentation relating to the EnMS, as well as defining the staff responsible for these activities. The issue of internal documentation of the EnMS takes place throughout its preparation, verification and approval phases. As a rule, the preparation of such a document is entrusted to a functionary with the necessary competence, while its verification is assigned to one or more people whose involvement ensures compatibility with every pre-existing organizational aspect and its approval stages are overseen by someone mandated with the authority necessary to make binding its application.

For some documents, such as the Energy Policy, the internal audit or the training plan, only a signature of approval is generally sufficient, and this type of decision is usually given to the Management Representative(s).

HOW IS IT DOCUMENTED IN AN ENMS?

In the manual, a brief description of current documentation practices could be included and references to relevant procedures and/or databases (i.e. a registry) prepared and approved. Procedures should describe in clear detail how documentation relates to specific responsibilities, methodologies, access to the registry, etc., and how they align with requirements already set out within the ISO 50001 standard for documentation.

SOME IDEAS AND SUGGESTIONS WHERE TO START:

- It is recommended to first investigate current documentation practice and flow in the LA and then define/update and use it in all EnMS documents.
- Internal roles and responsibilities on document modification, management and diffusion should be clearly defined, including the creation of a central “List of Documents” registry.
- Whenever any EnMS documents are updated and/or revised, such changes should also be reflected in the registry “List of Documents”.

QUESTIONS THAT OFTEN RISE IN THIS RESPECT AND ANSWERS TO THEM?

- Q: WHY DO WE NEED EVEN MORE PAPERWORK?
 - EnMS documentation (i.e. procedures, manual, policy, etc.) defines and clarifies the functionality of an EnMS in terms of assigned responsibility and operation. Through its documentation, the LA is able demonstrate the adequacy of its own EnMS with respect to its internal structure and the energy management objectives of its assets, as well as of its own technical and human resources. By documenting such things in a suitable manner, it ensures clarity for all staff. Moreover, when new employee starts working in the LA, there is all necessary documentation already available.
- Q: HOW WE CAN MINIMIZE THE RESOURCES NEEDED FOR DOCUMENTATION?
 - Using a digital version of the manual and other documentation can reduce the need for actual paper, but it also makes it less time-consuming to update them.
 - Establishing streamlined procedures, for example by integrating EnMS procedures/manual with other management systems already in place, can make documentation more efficient.

4.4. Operational control

ISO 50001 (SECTION 4.5.5) DEFINES THAT:

- LAs should identify and plan those O&M activities which are related to significant energy uses and that are consistent with the energy policy, objectives, targets and action plans.
- Operating and maintaining facilities, processes, systems and equipment could help the organization to avoid energy performance deviations or even deterioration.
- Checking the efficiency of boilers, air-conditioners, lamps and RES power/thermal plants are typical operational control activities.

WHAT DOES IT MEAN IN A PRACTICAL SENSE FOR LAs?

Operational control is the most technical part of an EnMS. To comply with the criterion of continuously improving energy performance, it is necessary to have expert personnel able to:

- verify the correct functioning of structures and systems (e.g. the efficiency of boilers);
- establish criteria for the analysis and management of events that generate or may generate deviations in energy performance; and
- ensure proper maintenance of structures and systems with significant energy use.

In order to comply with EnMS requirements of operational control, the LA either should involve its own O&M personnel in these activities or use competent external personnel. Usually O&M is based on the existing practice and several important aspects like deviations, non-conformities are introduced. Operational control also extends to all suppliers of energy goods and services that work for, or on behalf of, the LA.

HOW IS IT DOCUMENTED IN AN ENMS?

In the manual, a brief description of current O&M practices could be included and references to relevant procedures, action plan and/or monitoring plan is given. Procedures should describe in clear detail how documentation relates to specific responsibilities, methodologies, access to the monitoring plan, etc., and how they align with requirements already set out within the ISO 50001 standard for O&M.

SOME IDEAS AND SUGGESTIONS WHERE TO START:

- Identify the current O&M practice in each sector of the EnMS (i.e. how the energy matters are organised in public buildings, public lighting network etc.).
- Start with the first sector and describe who and how often will ensure data readings, how the operational control will be ensured (e.g. what is the level of deviation, how to report on non-conformities etc.).
- Continue defining operational control for other sectors included in the EnMS.

QUESTIONS THAT OFTEN RISE IN THIS RESPECT AND ANSWERS TO THEM?

- Q: HOW DOES ENMS DIFFER FROM THE BUILDING MANAGEMENT THAT WE ARE DOING CURRENTLY?
 - Operational control in the EnMS context refers to the ordinary and extraordinary maintenance of technical facilities and structures, as well as to the specific energy yields of the equipment. This requirement also extends to purchases of energy goods and services, as well as to the management of related emergency events.
- Q: WHAT IS A DEVIATION AND HOW SHOULD I SET THE MOST APPROPRIATE LEVEL OF IT FOR MY LA?
 - The degree of “deviation of energy performance” must be established according to appropriate and shared criteria. These criteria must take into account the LA’s consumption and energy, but also external factors affecting deviations. Adequate EnPIs taking into account energy consumption and dynamic factors can support a correct analysis of deviations in energy performance.

- Q: WHY DO WE HAVE TO INVESTIGATE REDUCTIONS/INCREASE IN ENERGY CONSUMPTION?
 - ISO 50001 requires not only a rational use of energy focused on continuous improvement, but also that the organization is able to demonstrate that it possesses an effective method to achieve and verify this goal. A reduction or increase in consumption could be generated by several factors beyond actual energy savings (e.g. unexpected demand from abnormal seasonal changes or unforeseen over-/under-use of energy). ISO 50001 requires that these factors be analysed, clearly identified and suitably managed when demonstrating any energy performance improvement of the LA.
- Q: HOW TO CARRY OUT THE ENMS ON A DAY-TO-DAY BASIS?
 - All monitoring and measurement activities should be done frequently. The analysis of changes in energy performance is a fundamental means of avoiding situations in which, despite the EnMS being implemented, energy performance improvement is not achieved for reasons related to technical facilities' problems, user management, etc.
 - The LA's energy management should become part of the daily routine for the delegated staff. Performance monitoring should therefore be properly timed and revised at pre-set intervals.

4.5. Design & procurement

ISO 50001 (SECTIONS 4.5.6 AND 4.5.7) DEFINES THAT:

- The LA's energy performance improvement should be considered in any operational control, as well as in the design of new, modified and/or renovated facilities, equipment, systems and processes which can have a significant impact on energy performance.
- The results of the LA's energy performance should be adequately verified by using appropriate EnPIs and be suitably incorporated in design and procurement activities of the relevant project(s).
- When procuring energy services, products and equipment that have, or can have impact on significant energy use, the LA should inform its suppliers that procurement is partly evaluated on the basis of energy performance.
- Criteria for assessing energy consumption and efficiency should be established respecting legal requirements that the LA must follow.
- Energy purchase specifications should be defined and documented even in public tenders made by the LA concerning its energy services and/or activities.

WHAT DOES IT MEAN IN A PRACTICAL SENSE FOR LAs?

Although in LAs it is usually left to external experts, design is an important aspect in an EnMS. In an LA, design can be constituted by building interventions (e.g. improving building envelopes, replacing fixtures, etc.) and by technical facility interventions (e.g. seasonal heating/cooling, public or interior lighting, etc.).

From an EnMS perspective, to design properly, the LA should:

- Ensure the inclusion of opportunities for improvement in the various phases of design and in public tender documents.
- Establish any need to introduce procedures for the operational management of facilities and equipment.
- Evaluate the possibility of obtaining incentives related to the improvement of energy performance.

Considering the operational lifetime in the ISO 50001 context means evaluating the value of energy performance and business benefits against total costs over that lifetime. However, it does not necessarily require a full life-cycle analysis or management.

Procurement therefore should be viewed as an opportunity to improve energy performance through the use of more efficient products and services by the LA. It is also an opportunity for the LA to work closely with the relevant supply chains and positively influence their energy behaviour and footprint.

In addition, the procedures for purchasing energy goods and services for LAs are often regulated by national and European rules strictly linked to the energy performance of goods and services purchased directly or through public tenders.

HOW IS IT DOCUMENTED IN AN ENMS?

In the manual, a brief description of current practices could be included and references to relevant procedures is given. Procedures should describe in clear detail how design and procurement relates to specific responsibilities, methodologies, access to the documentation, etc., and how they align with requirements already set out within the ISO 50001 standard for O&M.

SOME IDEAS AND SUGGESTIONS WHERE TO START:

- For procurement identify those services and products/equipment that influence energy performance in the assets.
- Investigate what is current procurement practice and talk to procurement officer in your LA how to introduce energy efficiency criteria during the next procurements.
- Describe it in the manual and procedure.
- Do the same also for design planning: identify how in the design phasing energy efficiency matters will be addressed.

QUESTIONS THAT OFTEN RISE IN THIS RESPECT AND ANSWERS TO THEM?

- Q: WHERE CAN WE FIND THE RELEVANT CRITERIA FOR DESIGN?
 - Determining the structural and energetic knowledge of your LA's assets, together with the identification of its significant energy uses, is a valid starting point for creating strong opportunities for energy improvement in the LA.
 - Performing an energy diagnosis according to the law on its technical facilities represents an important, in-depth step in order to define adequate criteria for design aspects.
- Q: WHERE CAN WE FIND THE CRITERIA FOR THE PROCUREMENT OF ENERGY SERVICES, GOODS AND PRODUCTS?
 - EU regulations on green public procurement (GPP), and the national regulation on GPP in your country are a very useful first tool for your LA to understand how to select energy goods and services in compliance with the requirements of an EnMS. The concept of GPP extends to a large number of categories of energy goods and services, and establishes clear and technically-precise assessment criteria for energy performance. Therefore, GPP-compliance essentially also ensures compliance with the requirements of your ISO 50001 EnMS.

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