Energy Efficiency System:2014 (EES^{+})

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1 Introduction

This document defines the requirements of the energy efficiency system EES+ (hereafter EES+) for continual improvement of energy efficiency. In terms of energy reviews, the requirements of EES+ are consistent with the ISO 50001 standard.

EES+ can be integrated with a company's ISO 14001 scheme or with another management system used by the company, or it can be applied separately according to the company's needs. It can also be certified by a body accredited for the certification of ISO 14001 or ISO 50001.

A large company may be deemed to meet the requirements of section 6 of the Energy Efficiency Act (1429/2014) concerning mandatory energy audits for companies if the company has joined an energy efficiency agreement system and introduced an EES+. In such a case, the EES+ need not be certified.

Alternatively, a large company is exempt from the obligation of carrying out an energy audit for a large company if it uses a certified environment management system accredited according to ISO 14001 together with an EES+ system certified by a body accredited for the certification of ISO 14001.

EES+ has been drawn up in partnership with Motiva Ltd, certification companies, the Energy Authority and the Ministry of Employment and the Economy.

1.1 Energy efficiency system as a tool for continual improvement of energy efficiency

The energy efficiency system EES+ helps organisations to create a systematic procedure to implement the principle of continual improvement of energy efficiency and to reduce energy consumption and costs.

Energy efficiency is part of an organisation's production efficiency and competitiveness. Energy management includes:

- The management's commitment to the promotion of energy efficiency
- Identifying key energy-related impacts (costs, the environment, dimensioning)
- Setting measurable targets
- Specifying organisational responsibilities
- Specifying and implementing actions derived from the targets
- Systems for monitoring consumption and the action taken
- Inspection of targets and deciding on further action.

In terms of the operation of an organisation, continual improvement of energy efficiency requires:

- Knowledge and monitoring of the organisation's own energy use
- Knowledge of the organisation's options to save energy
- Specifying and implementing energy-saving measures that are worthwhile in a techno-economic sense

- Taking energy efficiency into account in practices, investments and procurement
- Identifying different possibilities of energy procurement
- A good energy procurement strategy and its implementation.

The energy efficiency system can be described as a 5-stage process:

- Energy policy: statement by the organisation of its intentions to commit to the agreed energy-efficiency targets. Energy issues can be integrated with the management system used by the organisation, in which case there is no need to have a separate energy policy
- Planning: identifying the organisation's energy use, setting of targets and agreeing on action and procedures to reach the targets and goals according to the (energy) policy
- Implementation and deployment: implementation of efficiency measures; organising, training of personnel and communication.
- Monitoring and corrective action: target-oriented consumption monitoring, benchmarking, self-evaluation of energy efficiency
- Management review: evaluating the functioning of the system and realisation of the set targets, and deciding on new targets.

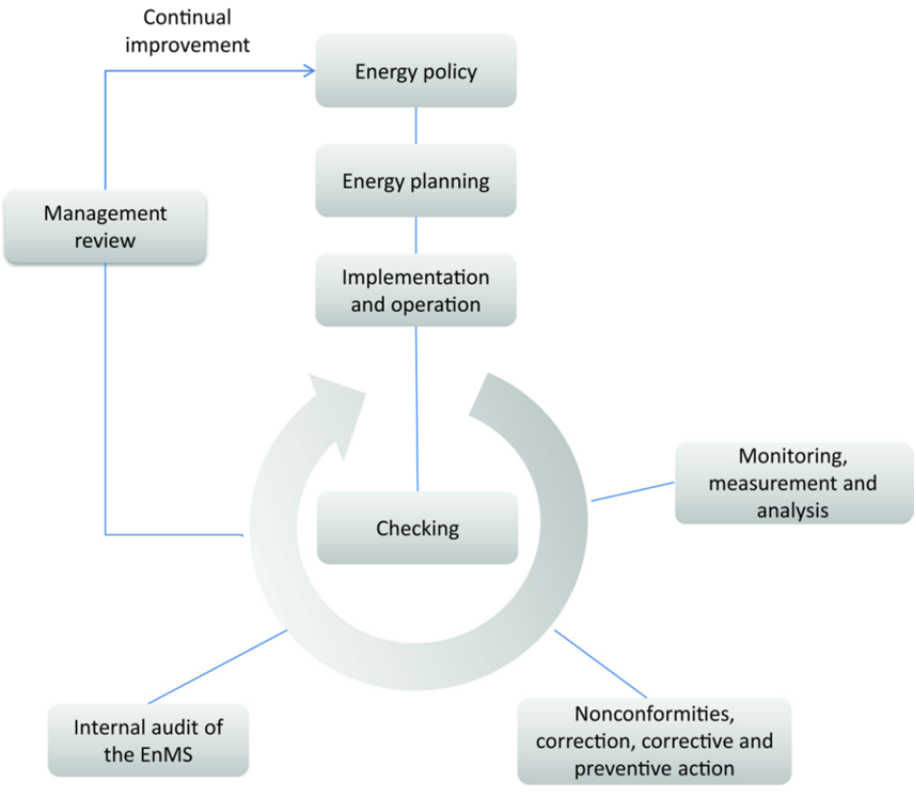

Figure 1. Applying the principle of continual improvement in the energy efficiency system (source: ISO 50001 standard).

2 Terms and definitions

The following terms and definitions have been used in this document:

2.1 nonconformity

Non-fulfilment of a requirement.

2.2 energy

Energy means electricity, steam, heat, compressed air, fuel and other like media. N.B. It may also refer to other like media, such as water.

2.3 energy use

Manner or kind of application of energy. For example, ventilation, lighting, heating, cooling, transportation, processes, production lines.

2.4 energy consumption

Quantity of energy applied.

2.5 energy efficiency system

The part of the organisation's management system that includes the energy-related organisation structure, planning, responsibilities, practices, processes and resources to develop, introduce, reach the targets, inspect and maintain, e.g. the organisation's environmental policy with respect to energy issues or a separate energy policy drawn up by the organisation.

2.6 energy review

The energy review is a documented procedure based on data and any other information. The purpose of the energy review is to provide a sufficient amount of information on the entire organisation's energy consumption profile and to identify opportunities to save energy and improve energy efficiency, and on the amount of savings.

2.7 boundaries

Physical or site limits and/or organisational limits as defined by the organisation.

2.8 objectives and targets

An objective is a general target often set for the long term in order to improve energy efficiency or implement an energy policy. A target is a company's detailed and, if possible, measurable performance requirement based on the energy policy. It is set in order to reach the objectives and to continually improve energy efficiency.

2.9 energy policy

Statement by organisation of its overall intentions and direction on the improvement of its energy efficiency. N.B. The organisation's energy policy creates a framework for action and setting of energy objectives and targets.

2.10 preventive action

Action to prevent a potential nonconformity or another unwanted situation by eliminating the cause of a possible nonconformity.

2.11 corrective action

Action to eliminate the cause of a nonconformity or another unwanted situation.

2.12 energy-efficiency improvement plan

A scheduled plan drawn up by the company concerning the action to implement, evaluate and monitor energy-saving measures and continual improvement of energy efficiency.

2.13 scope

Extent of activities, facilities and decisions that the organisation addresses through the energy management system, which can include several boundaries. N.B. The scope may include transport-related energy use.

2.14 top management

Person or group of people who directs and controls the organisation at the highest level. Top management controls the organisation defined within the scope and boundaries of the energy management system.

3 Energy efficiency system requirements

3.1 General

The organisation shall build and maintain the energy efficiency system in the way described in the following chapters. The organisation shall also define the boundaries of its energy efficiency system. The organisation shall

a) establish, document and implement an energy management system and maintain and improve it in accordance with the requirements of this document;

b) define and document the scope and boundaries of its energy management system;

c) determine how it will meet the requirements of these guidelines in order to achieve continual improvement of its energy performance.

3.2 Management responsibility

3.2.1 **Top management**

Top management shall demonstrate its commitment to support the energy management system and to continually improve its effectiveness by:

a) defining, establishing, implementing and maintaining the organisation's energy policy;

b) appointing a management representative and approving the formation of an energy management team;

c) providing the resources needed to establish, implement, maintain and improve the energy management system;

N.B. Resources include human resources, specialised skills, technology and financial resources.

d) communicating the importance of energy management within the organisation;

e) ensuring that energy objectives and targets are established;

f) considering energy performance in long-term planning;

g) ensuring that results are measured and reported at determined intervals;

h) conducting management reviews.

3.2.2 **Management representative**

Top management shall appoint a management representative(s) with appropriate skills and competence, who, irrespective of other responsibilities, has the responsibility and authority to:

a) ensure that the energy management system has been established, implemented, maintained and continually improved in accordance with this document;

b) identify person(s) authorised to work with the management representative in support of energy management activities;

c) report to top management on energy performance;

d) report to top management on the performance of the energy management system;

e) ensure that the planning of energy management activities is designed to support the organisation's energy policy;

f) define and communicate responsibilities and authorities in order to facilitate effective energy management;

g) determine criteria and methods needed to ensure that both the operation and control of energy management are effective;

h) promote awareness of the energy policy and its objectives at all levels of the organisation.

3.3 Energy policy

The organisation's management shall define the energy policy as part of an existing policy or as a separate policy and maintain it, and ensure that:

a) the energy policy defines the scope and boundaries of the energy management system;

b) the energy policy is appropriate to the nature and scale of the organisation's energy use and that its impact on energy use has been taken into account;

c) the energy policy includes a commitment to continual improvement of energy efficiency;

d) the organisation commits to complying with legal requirements and the organisation's obligations related to energy generation and use;

e) the organisation's employees are familiar with the organisation's energy policy;

f) a framework for monitoring energy use is established and the targets for energy efficiency are defined.

3.4 Planning

3.4.1 **General**

The organisation shall implement a planning process that will lead to activities that improve energy efficiency. Energy planning shall be consistent with the organisation's energy policy and it shall be documented.

Energy planning shall involve a review of the organisation's activities that can affect energy performance.

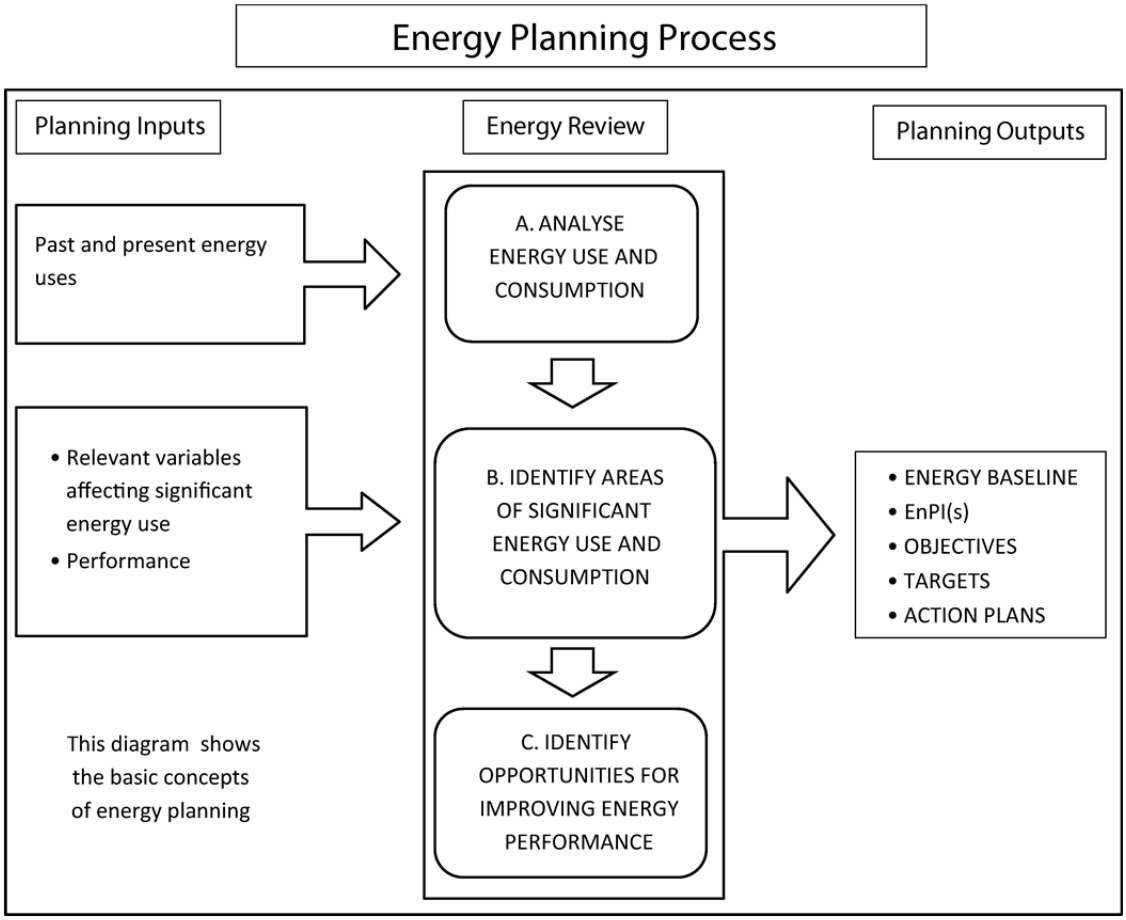

Figure 2. Stages of energy planning (source: ISO 50001 standard).

3.4.2 Legal and other requirements

The organisation shall create a procedure to identify legislation related to energy efficiency, as well as other relevant commitments and requirements. These requirements shall be taken into account when drawing up, implementing and maintaining the energy management system.

3.4.3 Energy review

The organisation shall implement, maintain and develop energy review activities that include an extensive overview of the entire organisation's energy use and all functions having an impact on energy efficiency, the possibilities of improving the efficiency of energy use, and energy saving. The methodology and criteria used shall be documented. Records of the results of the reviews shall be maintained.

To implement and develop the energy reviews, the organisation shall:

a) analyse the energy use and consumption of the entire organisation based on measurement or other data;

b) based on the analysis of energy use and consumption, identify the areas of significant energy use (part of the organisation that has a significant impact on energy use and consumption, facilities, equipment, systems, processes);

c) identify, prioritise on the basis of calculations and record opportunities for improving energy performance.

N.B. Opportunities can relate to potential sources of energy, use of renewable energy, or other alternative energy sources.

The energy review shall be updated at defined intervals, as well as in response to major changes in facilities, equipment, systems or processes.

3.4.4 Objectives and targets

a) The organisation shall draw up and maintain documented objectives and detailed energy-efficiency targets and programmes which are, where possible, measurable and scheduled, and maintain an annually updated energy-efficiency improvement plan. When establishing and updating the targets, the following shall be taken into account:
    - Legal and other requirements
    - Significant aspects related to energy production and use in terms of the organisation.
    - Possibilities of new energy-efficient technology
    - Financial, business and other operational aspects
    - Data for the previous years and implemented measures that have had an impact on energy efficiency

b) The organisation shall ensure that the objectives and targets support the organisation's energy policy.

3.5 Implementation and operation

3.5.1 Training, awareness and competence

a) The organisation shall ensure that especially the persons whose areas of responsibility include operations that have a fundamental impact on the organisation's energy efficiency have sufficient skills and competence;

b) Training activities shall deal with:
    - the requirements of the energy efficiency system as far as they are related to the person's tasks and sphere of impact;
    - the company's energy policy and energy-efficiency targets.

3.5.2 Communication

The organisation shall plan how to communicate about energy issues and how to implement this communication. In communication, it shall be taken into account how, what, to whom and when to communicate about energy issues internally and externally.

3.5.3 Documentation of the energy efficiency system

The documentation of the energy efficiency system shall include essential parts of the system (policy, objectives and targets, scope of the energy efficiency system) and information about their interfaces with other documents (e.g. with the environmental management system if energy issues are not included in it).

3.5.4 Control of documents

a) Document and file control procedures shall be described in the organisation's guidelines (what information is gathered, where and how, for how long, who is responsible, distribution);
b) External documents shall also be identified and their control procedures shall be described in the organisation's guidelines;
c) Essential system-related documents shall be recorded in the correct and sufficient way in an understandable and easy-to-find format;
d) Essential documents related to the energy efficiency system shall be reviewed at determined intervals, updated when necessary, and approved.

3.5.5 Design

The organisation shall consider energy performance improvement opportunities and operational control in the design of new, modified and renovated facilities, equipment, systems and processes that can have a significant impact on its energy performance. When calculating savings, the basic and primary principle shall be the analysis of lifecycle costs in order to be able to take long-term savings into account.

The results of the energy performance evaluation shall be incorporated where appropriate into the specification, design and procurement activities of the relevant projects.

The results of the design activity shall be recorded.

3.5.6 Procurement of energy services, products, equipment and energy

When procuring energy services, products or equipment that have, or can have, a considerable impact on energy use, the organisation shall inform suppliers that the procurement is partly evaluated on the basis of energy performance.

3.6 Checking

3.6.1 Monitoring, measurement and analysis

The organisation shall ensure that the key characteristics of its operations that determine energy performance are monitored, measured and analysed at planned intervals. Key characteristics shall include at a minimum:

a) significant energy uses and other outputs of the energy review;

b) the relevant variables related to significant energy uses;

c) energy performance indicators;

d) comparison of actual and expected energy consumption.

An energy measurement plan, appropriate to the size and complexity of the organisation and its monitoring and measurement equipment, shall be defined and implemented. The results from monitoring and measurement of the key characteristics shall be recorded.

The measurement plan shall include definitions of the measuring need and its review and a plan on the calibration and maintenance of measurements. Records of calibration and other means of establishing accuracy and repeatability shall be maintained.

N.B. Measurement can range from utility meters of small organisations up to complete monitoring and measurement systems connected to software applications capable of consolidating data and delivering automatic analysis. It is up to the organisation to determine the means and methods of measurement.

The organisation shall define and periodically review its measurement needs. The organisation shall ensure that the equipment used in the monitoring and measurement of key characteristics provides data that is accurate and repeatable. Records of calibration and other means of establishing accuracy and repeatability shall be maintained.

Records of these functions shall be maintained.

3.6.2 Evaluation of compliance

The organisation shall define a procedure for evaluating, e.g. the compliance with the requirements of the energy efficiency agreement, applicable legal obligations and other commitments.

3.6.3 Nonconformities, corrective action and preventive action

The organisation shall define a procedure to identify nonconformities (policy, objectives, agreed procedures and targets or statutory requirements) to implement corrective action and to monitor its effectiveness.

a) A responsible person with an authority to investigate nonconformities and launch corrective and preventive action shall be appointed for the task. All corrective or preventive actions shall be appropriate to the magnitude of the actual or potential problems and they shall have an impact on energy use.

b) Changes shall be documented and they shall be communicated on in the way defined by the company.

3.6.4 Control of records

The organisation shall establish and maintain records, as necessary, to demonstrate conformity to the requirements of the energy management system and the energy performance results

achieved. The organisation shall define and implement a procedure for identification, retrieval and distribution of records.

Records shall be and shall remain legible, identifiable and traceable to the relevant activity.

3.6.5 Internal audit

The organisation shall conduct energy-related audits at planned intervals, however, at least once a year (or if the system is related to another management system, energy issues shall also be examined in connection with it). The purpose of internal audits is to assess the implementation of continual improvement of energy efficiency and to produce information about the achievement of objectives and targets for the management of the organisation.

The organisation shall draw up an audit plan, defining:

a) The scope, criteria and procedures of the audit;

b) How often they are carried out;

c) The responsible bodies of the audit;

d) The contents of the report and the method of reporting to the management and other bodies.

The audit shall evaluate:

a) Whether the energy efficiency system is appropriate to the management of energy issues, what updates are needed;

b) Whether the energy efficiency system has been implemented and maintained in the agreed way.

3.7 Management review

Top management of the organisation shall review the energy management system at planned intervals, at least once a year, to ensure its suitability, adequacy and effectiveness. The results of the management review shall show the conclusions and the actions decided on.

Records of the management reviews shall be maintained. The management review shall:

a) evaluate the follow-up actions agreed in the previous management review;

b) evaluate the results of internal audits;

c) evaluate compliance with applicable legal requirements and other commitments;

d) review the organisation’s energy policy;

e) evaluate how the agreed principles and decisions have been implemented in practice. The current action plans and (development) programmes shall be assessed.

f) evaluate whether the energy key figures are appropriate to the organisation and whether the measured results are consistent with the set targets;

g) evaluate the appropriateness of the energy efficiency system;

h) ensure that necessary information is collected in order to evaluate the energy efficiency system;

i) decide on the targets and actions for the following period.