



Certification scheme for Energy Management Systems according to ISO 50001

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Certification scheme for Energy Management Systems according to ISO 50001*

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* This certification scheme is a translation of the originally Dutch-language certification scheme based on NEN-EN-ISO 50001:2011, the Dutch version of the European standard EN ISO 50001:2011. This European standard is identical to the international standard ISO 50001:2011. For the sake of convenience, this certification scheme will use the term ISO 50001 instead of NEN-EN-ISO 50001:2011.

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Introduction

By entering into an agreement with the Association for the Coordination of Certification of Environmental and Occupational Health and Safety Management Systems in the Netherlands (SCCM), accredited certification bodies (CBs) can use this certification scheme, which is based on the worldwide standard ISO 50001:2011 (ISO is the International Standards Organization, based in Geneva). The certification scheme was developed by a Central Committee of Experts (CCE) operating within SCCM and has been approved by the board of SCCM. SCCM qualifies as scheme supervisor in conformance with the requirements set by the Council for Accreditation. Certification bodies (CBs) associated with SCCM are obliged to follow the scheme drawn up by SCCM for certification based on the ISO 50001 standard.

The Dutch Council for Accreditation (RvA) is a body designated by the government to supervise the functioning of the certification and inspection bodies. Certification bodies complying with the requirements set by the RvA can be accredited by the RvA. If a CB develops a certification scheme, it must involve the relevant interested parties. Using a central scheme manager obviates the need for each CB to develop its own separate scheme. This also promotes a uniform interpretation of the standard at the basis of the scheme, and a single scheme has added value as an information provider to both CB auditors and organizations wishing certification.

SCCM concludes agreements solely with certification bodies accredited by the RvA or an accreditation body accepted by the IAF (International Accreditation Forum), which is an MLA (Multilateral Recognition Agreement) partner for ISO 50001. In addition to the ISO 50001 standard, there are specific requirements from the following documents that are of importance for environmental management systems and accrediting CBs:

- NEN-EN-ISO/IEC ISO 17021-1: Conformity assessment - Requirements for bodies providing audit and certification of management systems Part 1: Requirements;
- NEN-ISO 50003: Energy management systems - Requirements for bodies providing audit and certification of energy management;
- NPR-ISO/IEC TS 17022: Conformity assessment - Requirements and recommendations for content of a third-party audit report on management systems;
- IAF MD 2: Transfer of Accredited Certification of Management Systems;
- IAF MD 3: Advanced Surveillance and Recertification Procedures (ASRP);
- IAF MD4: Use of Computer Assisted Auditing Techniques (“CAAT”) for Accredited Certification of Management Systems;
- IAF MD 11: Audits of integrated management systems;
- IAF MD 19: The Audit and Certification of a Management System operated by a Multi-site Organisation (where application of site sampling is not appropriate);

→ EA-7/04: a clarification of the European co-operation for Accreditation on legal compliance within the ISO 14001 standard;

→ SAP-C015: the CA's Specific Accreditation Protocol for the certification of energy management systems;

→ Any new guidelines published by the EA and/or IAF related to ISO 50001 certification.

This requirement concerns the most recently published version of the above documents, keeping in mind possible transition periods. As far as these documents are freely available, the latest versions can be on our website, www.sccm.nl. References to sections of ISO 17021-1 are based on ISO 17021:2015.

SCCM's aim is to prepare a high-quality certificate with a broad support base that adds particular value to the relationship between the certified organization and those around it (the government, customers, suppliers and its neighbours). To achieve this broad base, SCCM's Central Committee of Experts (CCE) includes representatives of trade and industry (including trade organizations), the various authorities and other concerned parties.

The certification scheme consists of the following three elements:

→ The interpretation of the ISO 50001 standard (chapter 2)

→ The organization of the certification body (chapter 3)

→ The procedures used by the certification body (chapter 4)

A number of passages in this document state what SCCM 'expects'. This means that SCCM urgently recommends the action but will waive the requirement if there is good reason to do so.

The most important changes between this version and the version of 10 December 2013 are in a nutshell:

→ Changes related to EED requirements to perform an energy audit.

→ Implementation of ISO 17021.1:2015. Chapters 3 and 4, which are relevant for the implementation, have been taken from the SCCM certification scheme for ISO 14001:2015 when possible.

→ Implementation of ISO 50003:2014 - Requirements for bodies providing audit and certification of energy management systems. Implementation is discussed in chapters 3 and 4 and their annexes.

Interpreting ISO 50001

2.1 General requirements (ISO 50001 section 4.1)

An organization must document the scope and boundaries of its energy management system. The CCE has defined the following key points:

- The organization must establish the organization(s) or parts of (an) organization(s) and the operations, products or services of that organization (or part/parts of it) to which the energy management system applies;
- The extent (often called the scope) to which the energy consumption in the system is controlled (for example, to what extent energy use by third parties such as transport of personnel is covered under the system) must be defined for the area of application and boundaries that have been established;
- To define the breadth (scope), it is recommended to use the approach described in the ISO 14064-1 standard (scopes 1,2 and 3). The GHG protocol section on 'A Corporate Accounting and Reporting Standard', chapter 3 'Setting Organizational Boundaries' and chapter 4 'Setting Operational Boundaries' can be consulted to supplement the 14064-1 standard;
- In the Netherlands uses the CO₂ performance scale of the SKAO (Climate-friendly Contracting and Entrepreneurship Association). Requirements for elements of the scale correspond to those from ISO 50001. ISO 50001-certified organizations can benefit from using these procedures. If they do, it is important that there be overlap between the scope and boundaries of the management system and the chosen breadth (scope);
- As a minimum, the 'direct' energy consumption by sources that are property of or controlled by the organization (such as leased or rented/let property) and the consumption of purchased electricity must be incorporated. It must be clear to what extent indirect emissions arising from third parties fall within the system. Energy consumption related to transport of persons and goods is usually included;
- It must be clear how any energy generated by the organization (such as co-generation facilities) is part of the energy management system. This is especially the case if installations are shared with other companies and/or belong to a separate legal entity;
- If the organization to be certified is also ISO 14001-certified, it is important that it be clear to what extent the areas of application of the environmental and energy management systems overlap.

According to the CCE, the clause in 4.1c) can be considered an introductory sentence, a requirement that is met if the various sections of the standard are adequately implemented.

2.2 Management responsibility (ISO 50001 section 4.2)

According to 4.2.1 b), top management is required to appoint a management representative. According to the CCE, final responsibility for the energy management system must lie with the management of the organization. The carrying out of tasks can be delegated to the management representative.

Sections 4.2.1 b) and 4.2.2 mention the management representative and energy management team. According to definition 3.10, the team may consist of just one person. According to the CCE, these two positions or roles may be filled by the same person. As far as the energy management team is concerned, it is essential that it be formed by key people in the organization capable of promoting awareness about energy.

In 4.2.1 h) the subject of energy is linked to long-term planning. If a long-term plan is drawn up, it must include the subject of energy. The CCE stresses the importance of long-term planning, since reducing energy consumption often goes along with investments which yield over the long term. For many organizations, a strategic view of investments and their own operations is necessary to achieve substantial changes.

Section 4.2.2 indicates that the management representative must have 'appropriate skills and competence'. According to the CCE, the necessary 'skills and competence' of the management representative are determined by such factors as the size of the organization, its energy consumption and the nature of energy users. The importance of organizational and process-related skills will be greater for the management representative of larger organizations (with a substantial energy consumption). Others in the organization can be called upon for technical knowledge and skills. Technical knowledge and familiarity with the production process will often be more important in smaller organizations.

2.3 Energy policy (ISO 50001 section 4.3)

The energy policy can be integrated in other policy documents, such as an environmental policy statement.

Key points are:

- If the environmental policy statement is used, the organization must realize that although some of the requirements overlap, there are additional requirements (such as 4.3 c, commitment to information and means, and 4.3.f, support for purchasing energy-efficient products and services and designs);
- Section 4.3 e) requires that the energy policy can serve as a framework for establishing and assessing energy objectives and targets.

2.4 Energy planning (ISO 50001 section 4.4)

Section 4.4.1 (General) can be considered introductory information. It can be considered satisfied if the requirements in 4.4.2 through 4.4.6 have been satisfied.

The standard distinguishes between energy consumption (the amount of energy used), energy use (how the energy is used, for example, for ventilating, heating, processes etc.) and energy sources (electricity, fuels, heat etc.).

2.4.1 Legal and other requirements (ISO 50001 section 4.4.2)

Examples of relevant legislation, regulations and other requirements in the Netherlands are provided in annex 2.

These “other requirements” include obligations arising from commitments to third parties (such as level on the CO₂ performance scale).

According to the standard, the organization must establish how the legal and other requirements apply to its energy consumption, use and efficiency. In the opinion of the CCE, this means that an organization must have an overview of the concrete requirements that apply to its energy consumption, use and efficiency. This overview is important for performing the evaluation of compliance with legislation and regulations (art 4.6.2).

The organization must periodically assess whether there are new environmental legislation and regulations that apply, or if existing legislation and regulations have changed (EA-7/04- art. 3.2.2).

2.4.2 Energy review (ISO 50001 section 4.4.3)

The methodology and criteria used for an energy review must be documented. The following may be useful for setting criteria:

- what size energy sources are included;
- when is energy metered and when not;
- when a user is considered significant;
- how far back in time is information gathered;
- frequency and/or criteria for updating the energy review.

The energy review in 4.4.3 is made up of an analysis of the main sources of energy consumption (for the organization as a whole, from various energy sources) and energy use in 4.4.3a), and a more detailed analysis identifying the facilities, equipment or processes having a significant influence on energy consumption.

The significance can be determined on the base of the scope of the consumption and/or the capability of improving the energy performances. By also involving the capability of improvement in the determination of the significance, it will prevent that relatively small consumers (for example electric motors) will be overlooked. Also in section 4.4.3 C the CCE expects that all energy users with substantial capability of improvement will be involved, including smaller users, that are not significant based on scope but on the capability of improvement.

Information about the electricity usage profile can be an important way for the organization to understand its energy consumption and use. This information must be at hand if the ISO 50001 certificate is being used to satisfy the energy audit criteria from the EED (Energy Efficiency Directive).

Any energy the organization generates and any residual heat used should also be included when identifying consumption and use.

Various other instruments can be used for the energy review, including:

- EVA (Dutch language energy-use analysis¹;
- energy balance.

The CCE assumes that there is sufficient depth in the analysis in 4.4.3 a) that it gives a detailed overview of all existing energy flows within the organization, its extent and distribution to functions and any conversion to other energy carriers. These include the energy consumption of buildings or groups of buildings, industrial processes or installations, including transportation and heating. This overview must be 'proportional' and 'sufficiently representative' enough (for example, as described in the EED guidelines) to give a reliable indication of energy use and possible savings measures. In practice, a 'residual item' of approximately 10% of the total energy consumption is still acceptable under normal circumstances.

Consumption can be understood by metering and/or calculating consumption based on itemized lists. An energy balance can be obtained by combining energy consumption with energy use.

The energy assessment is primarily concerned with current consumption. If a baseline is used based on data from the past, then the energy assessment must also reflect the developments from that point onwards.

A long-term view is also necessary in order to identify the opportunities for reducing energy consumption and/or using alternative energy sources (see also 4.2.1 h). This will involve the products/services, processes whether self-managed or not, and energy sources used. In this regard, it is important that there be an idea of the life span of facilities, so that alternatives can be found in a timely manner. For example, the use of such technologies as residual heat (from an internal or external source) requires preparation and planning.

The variables (listed in 4.4.3 b. second point) are understood to mean:

- capacity utilization/scope of production;
- weather conditions;
- condition (e.g. leaks, adjustments);
- stopping operations for such reasons as major maintenance.

Depending on the chosen scope (see 4.1), data will also need to be collected to determine the energy consumption connected to products or services purchased from third parties. One example of this is outsourced services for transporting goods and/or people.

¹ Downloadable from http://www.rvo.nl/sites/default/files/bijlagen/EVA_Handleiding%20EnergieVerbruiksAnalyse_19-12-2008.pdf

2.4.3 Baseline energy use (ISO 50001 section 4.4.4)

An organization can have more than one baseline for energy use, for example one for each source. There must be criteria which support the choice for the year used as the baseline. The calculation methods for the baseline, including any corrections made or hypothetical assumptions used, must be documented. Corrections may be necessary if, for example, the organization contracts out or divests itself of operations. The chosen baseline(s) must cover at least 80% of the total energy consumption.

2.4.4 Energy performance indicators (ISO 50001 section 4.4.5)

The energy performance indicators (EPIs) formulated in accordance with this section of the standard are the basis of the monitoring requirements in 4.6.1.

EPIs must be chosen such that they can actually provide guidance for energy use. EPIs may consist of a parameter (absolute energy use), energy use per unit (such as a work day, weekend day, time to manufacture a product, shift) or a multivariable model ($E=A*x+B*y+...$) in which variables can be size of production, outside temperature or another variable.

2.5 Implementation and operation (ISO 50001 section 4.5)

2.5.1 Competence, training and awareness (ISO 50001 section 4.5.2)

This section concerns the people who can influence energy use directly or indirectly through their behaviour and/or work tasks. A distinction can be made between the following groups:

- operators and production personnel directly involved with significant energy users;
- technicians involved in development and maintenance (both internal and external) of significant energy users;
- transport planners;
- purchasers;
- support service providers (cleaning, security);
- management at different levels in the organization having influence on the groups listed above.

2.5.2 Design (ISO 50001 section 4.5.6)

The terms modified or renovated facilities, equipment, systems and processes must also include maintenance and the replacement of parts.

In developing new products/services, the impact on energy use in their production or delivery (including any purchasing) must be included in the design in advance. New products or services may also result in an increase of energy consumed in their production or delivery. If these differences are significant, the organization must be able to justify their necessity (for example, increased consumption during production may be offset by lower consumption during use).

2.5.3 Purchasing of energy services, products, equipment and energy (ISO 50001 section 4.5.7)

This article is concerned with the purchasing of energy services, facilities and energy connected to the organization's own production and delivery and not, for example, the purchase of products (such as raw materials, parts, semi-finished products) or the contracting out of certain operations. Annex A 5.7 makes reference to the possibility of using the energy management system in the production chain. However, this is not mandatory.

Organizations in the Netherlands that are part of either the MJA or MEE long-term covenants on energy are indeed obligated to consider their energy consumption in the chain. The energy management system can be used to ensure these levels.

In buying the production inputs it is important to consider the energy consumption and costs over the entire life cycle in decision making. For example, a larger investment may be earned back over the long term. Factors such as maintenance costs can also have an influence (Total Cost of Ownership).

Examples of specifications for energy purchasing are:

- general: opting for the best available technologies;
- replacing electric motors with class IE3, Premium efficiency;
- purchasing 'green' electricity.

2.6 Checking (ISO 50001 section 4.6)

2.6.1 Evaluation of compliance with legal requirements and other requirements (ISO 50001 section 4.6.2)

An organization must periodically evaluate its compliance with every applicable requirement of applicable legislation and regulations, and if the organization is aware of its compliance status. The organization must be able to use the energy management system to identify its compliance status (EA-7/04 art. 3.7.2). According to the CCE, the evaluation is an operation with a different goal than the internal audit and management review. Performance of this evaluation must be verifiable. One instrument which can be used to evaluate compliance is the 'compliance audit'. The internal audits must evaluate whether the procedure for evaluating compliance also functions properly. The results are incorporated in the management review.

The frequency with which an evaluation of compliance is performed depends on the chances of nonconformities, and the potential effect of the nonconformity on a legal requirement. This will differ for each requirement. The higher the risk connected to a given requirement, the more frequently the evaluation must be done and the more rigorous the method must be. The organization will have to determine this for the various legal requirements. Not all requirements necessarily have to be evaluated each year, for example, facilities not subject to changes, or nonconformities that have no direct effect. Ultimately, the organization will have to be able to make a supported statement about its own compliance during the annual management review.

2.6.2 Internal audit of the energy management system (ISO 50001 section 4.6.3)

Internal audits for ISO 14001 and ISO 50001 may be combined. If they are, it is important that the elements specific to ISO 50001 are explicitly dealt with and that the auditors are qualified to audit them.

2.6.3 Nonconformities, correction, corrective action and preventive action (ISO 50001 section 4.6.4)

Nonconformities can occur at various levels:

- the management system's meeting the ISO 50001 standard;
- working in accordance with the procedures, instructions and planning laid down in the management system;
- achieving the objectives laid down in the system.

Organization of the certification body

To be accredited to perform certification work, a certification body (CB) must meet the NEN-EN-ISO/IEC ISO 17021-1 standard 'Conformity Assessment - requirements for bodies providing audit and certification of management systems' and other related standards and guidelines as mentioned in the introduction. The ISO 17021 contains both structural and procedural requirements. SCCM can interpret these requirements where necessary and can set additional requirements.

Chapters 1 through 8 and 10 of the ISO 17021-1 contain organizational requirements.

In the event of an accreditation evaluation, the text of the NEN-EN-ISO/IEC ISO 17021-1 and the NEN-ISO 50003, along with this certification scheme is binding.

3.1 Principles and general requirements (ISO 17021-1 chapters 4 and 5)

3.1.1 Impartiality (ISO 17021-1 sections 4.2, 5.2 and 5.3)

Personnel may not have been involved as consultants for management systems (see ISO 17021-1 definition 3.3) for the organization to be certified about either its energy management system or any other management systems.

If a member of the certification personnel has worked for the CB for less than two years, or works part-time for the CB, the CB must make sure that this person has not participated in developing, implementing or maintaining management systems at the certifying organization (for example as a consultant or internal auditor).

Performing a 'pre-audit' by the CB is not considered consultancy as long as it only involves an evaluation of the implemented system, and no advice is given about rectifying eventual violations or non-compliance.

3.1.2 Response to complaints (ISO 17021-1 section 9.6.7)

The CB must inform SCCM as soon as possible, but in any case within two weeks, of complaints submitted by third parties (such as the competent authority) to the CB about a certificate it has issued (i.e. not objections from organizations certified by the CB). SCCM will publish the number and nature of the complaints in its annual report.

3.2 Organizational structure within the CB (ISO 17021-1 chapter 6)

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3.3 Personnel within the CB (ISO 17021-1 chapter 7)

3.3.1 Competence of management and personnel (ISO 17021-1 section 7.1)

ISO 50003 specifies the competence requirements set in ISO 17021-1. A CB can use its own system to define the management of competences.

ISO 17021-1 uses the term 'technical area', in ISO 50003 this must be interpreted in the context of certifying energy management systems.

Annex 2 defines the legislation and regulations relevant to ISO 50001 certification in the Netherlands.

3.4 Information exchange between CB and third parties (ISO 17021-1 chapter 8)

3.4.1 Publicly accessible information (ISO 17021-1 sections 8.1, 8.2, 8.3 and 8.4)

The CBs must include on the certificate the fact that the certificate was issued on the basis of the SCCM certification scheme. A copy of the certificate or a modified certificate must be provided to SCCM immediately. SCCM publishes the certificates on the Internet.

The following apply to suspension or withdrawal of a certificate:

- The CB shall inform SCCM immediately if a certificate has been suspended, and SCCM will indicate the suspension on its Internet database;
- If the CB suspends a certificate, it will inform SCCM of the suspension as soon as possible, but in any case within 1 week. SCCM will remove the certificate from its directory of certified organizations.

The information on the certificate must make it clear to potential users which organization is certified for what activities, and must not be misleading. In particular:

- The name of the organization as it appears on the certificate must correspond with the level of hierarchy at which the management review is performed (such as Organization x, business unit y);
- The scope on the certificate contains a concise description of the operations of the organization covered by the certificate. The scope must be within the scope established by the organization to be certified (ISO 50001 sec. 4.1). This description may not contain value judgements;
- Branches of the organization at other addresses and/or cities will be included on the certificate in such a way that they are traceable;

- If a partial certificate is granted to one part or location covered by a larger concern's certificate, it must be clear for all concerned that this partial certificate is not an independent certification and cannot be seen as separate from the certificate of this larger concern, the number of which must be included on the partial certificate;
- If there is a need for more detailed information about what the ISO 50001 certificate involves (such as addresses of other sites, names of products or services) the certificate may make reference to an annex, validated by the CB, where this information appears.

3.4.2 Information exchange between a CB and its clients (ISO 17021-1 section 8.5)

The organization with a certified energy management system is responsible for continuing to comply with all requirements. If this is no longer the case, the organization itself must report this to the CB.

This is not a question of nonconformities identified in internal audits, for example, which can be solved quickly, but of nonconformities of a structural nature and which have or can have consequences for the environment or its neighbours such that complaints or action from the authorities can be expected. See also section 4.5.2, which discusses nonconformities for which a CB must perform an additional interim audit.

Procedures used by the certification body

A CB wanting to be accredited for performing certification must meet the NEN-EN-ISO/IEC ISO 17021-1 'Conformity Assessment - requirements for bodies providing audit and certification of management systems' and other related standards and guidelines as stated in the introduction. The ISO 17021-1 standard contains requirements for both the CB's organizational structure and the CB's procedures. SCCM can provide an interpretation of these requirements, where necessary.

Chapter 9 of ISO 17021-1 contains requirements related to the procedures used during the certification process.

In any accreditation assessment, the text of the NEN-EN-ISO/IEC ISO 17021-1 and NEN-ISO 50003, along with this document, is binding.

4.1 Preparation for certification (ISO 17021-1 section 9.1)

4.1.1 Application review (ISO 17021-1 sections 9.1.1 and 9.1.2)

The organization to be certified must establish the scope of its energy management system (ISO 50001 section 4.1). Chapter 2 of this certification scheme provides a guide to how to do this. A distinction must be made between the scope defined in its energy management system and the information on the certificate. A succinct description of the operations and all sites covered by the certificate must appear on the certificate. This information on the certificate comes from the description of the scope within the energy management system.

The CB must determine whether the scope is in line with the requirements in the ISO 50001 standard (section 4.1). These concern the breadth of operations, facilities and decisions that the organization can control by means of an EnMS. The energy use of products intended for third parties that may be or have been developed by an organization must fall outside the scope of the energy management system.

SCCM has more precisely specified the procedures for determining the scope in the following situation:

Certification of an activity within a large organization with multiple activities

If within an organization, more than one division, business unit, subsidiary, etc. carry out activities, then a separate activity can be certified if it:

- has its own management;
- can pursue its policy and has an independently functioning energy management system;
- has its own production or other facilities, each separately responsible for the observance of legislation and regulations and any environmental permits.

Section 3.4.1 of this certification scheme contains indications for the organization mentioned on the certificate.

4.1.2 Audit time (ISO 17021-1 sections 9.1.4 and 9.1.5/ISO 50003 section 5.3)

The ISO 50003 section 5.3 must be used to determine time schedules. The amount of time spent is dependent on the complexity of the organization and the number of people effectively involved in achieving compliance with the requirements set for the energy management system (these must have a material impact on the results). The complexity is determined based on the following factors:

- annual energy consumption;
- number of energy sources;
- number of significant ways of energy use.

Annex A of ISO 50003 shows an elaboration of the system (including a timetable).

The following guidelines are important when determining time schedules:

- IAF MD 3: Advanced Surveillance and Recertification Procedures (ASRP). IAF MD 3 is intended for certifying environmental and quality management systems. Since energy is one possible environmental aspect, the CCE states that the IAF MD 3 also applies to certification of energy management systems. The criteria in the IAF MD 3 that apply to environmental management system certification should then be used;
- IAF MD 4: Use of Computer Assisted Auditing Techniques (“CAAT”) for Accredited Certification of Management Systems;
- The IAF MD 11 (Audits of integrated management systems) provides possible ways to reduce the amount of time spent by combining audits of different management systems.

4.2 Initial certification (ISO 17021-1 section 9.3)

4.2.1 Phase 1 audit (preliminary audit) (ISO 17021-1 section 9.3.1.2)

According to SCCM, the CB must determine whether the scope chosen by the organization corresponds with the factual situation.

One element of the preliminary audit is a document audit (see ISO 17021-1 sec. 9.3.1.2). The place where the preliminary audit is to be performed can be determined in consultation with the organization. Annex 1 has a list of documents important for the preliminary audit.

The preliminary audit must determine whether the various elements of the energy management system are in place and have been implemented. The quality of implementation is determined during phase 2. The implementation must be complete enough that there can be a finding in the phase 2 audit report about the functioning of its energy management system (see 4.3.1 and 4.3.2 of this certification scheme). The purpose of phase 1 is to determine whether the organization is ready for the evaluation of the implementation in phase 2.

The preliminary audit may be combined with audits of other management systems. However, doing so must not jeopardize the quality and depth of the audit. In a combined audit as well, the report must clearly indicate all the aspects relevant to the energy management system.

4.2.2 Phase 2 (certification audit) (ISO 17021-1 section 9.3.1.3)

Chapter 2 (interpretation and guide to ISO 50001) explains the relationship between the various elements of the standard. This relationship is evaluated by following audit trails during phase 2.

In addition to the points required by ISO 17021-1, SCCM expects that the certification audit shall also include:

- an interview with the top management responsible for that site;
- a tour of the site, including an investigation of the implementation of the energy management system on the work floor (among other things by conducting interviews).

4.3 Conducting audits (ISO 17021-1 section 9.4)

4.3.1 Evaluation of compliance with legislation and regulations (EA-7/04)

According to ISO 17021-1 section 9.4.8.3, the audit report must contain a statement regarding the effectiveness of the energy management system as concerns its compliance with legislation and regulations. The following points are important for evaluating whether the energy management system is implemented in such a way that the organization is able to comply with legislation and regulations:

- The CB must evaluate whether the various elements of the ISO 50001 standard that are important for ensuring compliance (including the level of detail of the identified legislation and regulations, the procedure for updating the list of identified legal and other compliance points, identification and communication of incidents, the self-assessment procedure, the procedure for reporting to management) are worked out in sufficient detail that it is possible to ensure compliance.
- The CB must evaluate the functioning of the elements by using a combination of audit trails in which all the relevant steps for ensuring compliance with particular requirements in legislation and regulations are followed, and by sampling (spot checks) to evaluate compliance with specific requirements from legislation and regulations. The purpose of these evaluations is to understand how the energy management system works and not to report on the actual compliance.

- A properly functioning energy management system will provide results indicating the degree of compliance with legislation and regulations. These results must be documented within the energy management system.
- The functioning of the energy management system must be the basis for the CB's justified confidence that the organization is indeed in compliance with legislation and regulations.
- Since the evaluation is based on a spot check and on a limited period of time, having well-grounded confidence does not necessarily mean that compliance with legislation and regulations can be guaranteed.

If there are sufficient grounds to do so, the certification body may consult public sources in order to verify whether the information supplied by the organization is correct. Under the Netherland's Open Government Act (Wet Openbaarheid Bestuur), the competent authority's public information sources may be consulted in order to evaluate whether:

- the organization's records of communication with the government are complete, for example inspection reports made public on the Internet;
- all sites and facilities of the organization to be certified are also covered by the current licence;
- here are new developments regarding differences of opinion between the organization and the authorities;
- the organization cannot be reproached for the fact that permits are lacking.

This opportunity may be taken when it contributes to acquiring justifiable confidence. In principle, the certification body makes use of information supplied by the organization, or available within the organization.

If the CB wishes information from the competent authority other than that already in publicly available sources, then in principle the organization itself shall request this information, unless other agreements have been made between the organization and the CB.

The CB must in any case decide against certification, or withdraw the certificate² if one or more of the following situations occurs:

- The certification body has serious doubts about whether the organization can achieve its intention to comply with legal requirements using its energy management system;
- Procedures for corrective and preventive action are not effective. This is certainly the case if, for example, requirements connected to energy consumption / use and energy efficiency are systematically not being met and written agreements with authorities regarding this matter are not available;
- Procedures for reporting incidents and/or violations of legal requirements to the competent authority do not work properly.

² Before a certificate is withdrawn, the certification body shall allow the organization concerned a period during which it can repair the nonconformity. The duration of this period depends on the nature of the nonconformity. This period can be considered a suspension if the certification body determines that the certificate must not be used and/or that the certified organization must notify its clients of the nonconformities. If the non-compliances have been repaired within the stated period, the suspension is terminated. If not, the certificate is withdrawn.

4.3.2 Evaluation of continual improvement (ISO 17021-1 section 9.4.8.3/ISO 50003 sections 5.6, 5.7, 5.8, 5.9)

According to ISO 50003 section 5.6, the audit report must contain a statement (with evidence from the audit) regarding the achievement of continual improvement of the EnMS and the improvement of energy performance. The following points are important to consider in evaluating whether the energy management system has been implemented such that the organization is capable of continually improving its energy performance:

- The CB must evaluate whether the various elements of the ISO 50001 standard that are important for achieving continual improvement of products and services from a life-cycle approach have been worked out so as to enable continual improvement. These elements include identifying opportunities for improvement, involvement of top management in continual improvement, planning improvements and the availability of resources and people, following and if necessary modifying the improvement processes;
- The CB must evaluate the working of the improvement process through a combination of audit trails in which all the steps relevant for making improvements for particular risks or opportunities, and from spot checks evaluating how particular options for improvement are carried out;
- If the energy management system is functioning properly, the results of the system will show to what degree the energy performances are improving. This is then documented within the energy management system.

One or more of the following situations can be grounds for a refusal to grant or withdraw a certificate:

- The organization has not gained, or has very little, understanding of the opportunities for improving its energy performance related to the identified risks and opportunities for improvement;
- There is no plan for improvement, or the plan is not well founded with respect to content³;
- The plans are not carried out and no convincing explanations are provided. This refers to the environmental management programmes which include concrete plans for activities as part of the continual improvement process.

4.3.3 Evaluation of environmental information

The certification audit must focus on the processes related to monitoring and measurements, and how this information is converted into energy information. Although the certification process is not focused on making pronouncements about individual figures, it does mean that:

- during the certification audit, random checks will be performed for a number of important risks to evaluate whether the measuring and recording system produces valid and reliable results;
- for a number of issues, the procedure for processing the measurements and records, and if appropriate, how they are adapted into environmental information, will be evaluated;

³ The evaluation of this part is subjective. Considerations are:

- The improvement of energy performance is best evaluated over a number of years;
- If an organization has significantly improved its energy performance in the recent past, the CB should take this into consideration;
- If an organization has planned and/or undertaken very little action to improve its energy performance, while there have been improvements in technology that many of its competitors have used, the plan is probably not well grounded;
- The exchange of experiences between CBs will be encouraged, as it is important they come to similar conclusions.

- there will be an evaluation of whether the information communicated internally and externally (including reports to the government) agrees with the information obtained in the energy management system;
- it is verified that the system works in such a way that the results are reproducible and that the energy information can be compared to previous and/or future periods.

An ISO 50001 certificate means that various elements of the system have been assessed that are important for generating reliable energy information. In this sense, it gives a positive value to the information generated using the energy management system. However, an ISO 50001 certificate is not a value judgement about the reliability of individual figures, since these are only assessed using spot checks, with the aim of evaluating the system.

An organization that creates an incorrect image by providing incomplete or incorrect energy information in its external communications is not meeting the requirements of ISO 50001 with regard to communication.

4.3.4 Procedures for violations of compliance obligations

In the Netherlands, article 1.1a of the Environment Act is relevant as it establishes 'duty of care'. This implies that an entity will do all that can reasonably be expected.

The CB/environmental auditor may be expected to:

- report violations of legislation and regulations to the top management;
 - suspend or withdraw certification if the energy management system does not result in violations being prevented or dangerous situations being resolved.
- This action should be considered reasonable.

The company must decide whether or not to report the violation or dangerous situation to government authorities on a case-by-case basis.

4.3.5 Audit reports (ISO 17021-1 section 9.4.8/ISO 50003 section 5.6)

A CB must report the results of the certification audit to the organization to be certified, and in doing so must formulate opportunities for improvement. This is not considered a recommendation to be paid for separately. The CB is not permitted to make recommendations for altering the energy management system and/or to make suggestions for concrete solutions based on the results of this report.

According to SCCM, the report must include sufficient information after the fact to account for its procedures, for example if there are any objections/appeals. The CB must maintain records with information about the audits performed (see ISO 17021-1 section 9.6.8).

According to ISO 50003 section 5.6, the scope and boundaries of the energy management system must be included in the audit report.

ISO 17021 sec. 9.4.8.3 a requires that the audit report contain a statement with a summary of the evidence showing the degree to which the energy management system is capable of meeting the applicable requirements and achieving the intended outcomes. 'Outcomes' is understood to mean the intended results. The intended results that are – at a minimum – aimed at improving energy performance, meeting compliance obligations and achieving the energy objectives. This is in line with the requirements from ISO 50003 section 5.6 for a statement (and evidence) about continual improvement of the energy management system and the energy performance. According to SCCM, this statement should focus on achieving the intended results and the functioning of the elements of the energy management system that are relevant for ensuring compliance obligations and ensuring an improvement in energy performance. Besides the points above, the report about surveillance audits must pay special attention to the implementation of plans for rectifying nonconformities identified in previous audits.

According to SCCM, in the event of combined systems, the assessment of the energy management system based on the ISO 50001 standard must be readable on its own in the report. The result of the application for a certificate for one management system must not affect the result for any other part.

4.4 Maintaining certification (ISO 17021-1 section 9.6)

4.4.1 Surveillance audit (ISO 17021-1 section 9.6.2/ISO 50003 section 5.8)

SCCM expects that the following points will be given attention in a surveillance audit, in addition to the elements required by ISO 17021-1 and ISO 50003:

- the involvement of top management;
- the functioning of procedures related to the communications with interested third parties (including correspondence with government authorities);
- the functioning of processes for the organization's assessment of its own compliance with legislation and regulations, and the outcomes of these procedures.

Surveillance audits can be combined with audits of other management systems. However, this must not jeopardize the quality and depth of the audit. In a combined audit, the report must clearly indicate all the aspects relevant to the energy management system.

4.4.2 Special audits (ISO 17021-1 section 9.6.4)

A CB must consider an additional (interim) audit during the audit cycle if:

- the CB is informed of decisions made by the competent authority related to enforcement (formulated in an official letter) in which the government has identified a violation of important regulations relating to energy;
- there are other signs that give the CB reason to doubt that energy management system is functioning properly.

An interim audit does not always have to be performed at the site of the certified organization. The CB can sometimes make a judgement by requesting the relevant information.

Documents for the preliminary (phase 1) audit

The organization to be certified is expected to have the following documents available for the preliminary audit:

- The document describing the current procedures. An index showing which parts of the documentation refer to specific requirements of the ISO 50001 standard is appreciated;
- A description of the company's processes on the site, and an analysis of the energy consumption and energy use for its different operations;
- The evaluation of the organization's energy use and where improvements can be made;
- A plan in which the concept of continual improvement is made tangible;
- A list of the relevant legislative and regulatory requirements, and other agreements with the authorities to which the organization subscribes (such as for example, covenants);
- The most important regulations in the licence;
- A record of consumption, on the basis of which an assessment can be made of the extent to which the regulations in the licence are being complied with;
- A summary of the correspondence with the competent authorities;
- The reports of the internal audits;
- The reports of the management review.

Knowledge of legislation and regulations in the Netherlands

Table 1 shows the legislation and regulations relevant to energy management that can apply to organizations with offices in the Netherlands. Summaries of all the legislation and regulations in the list can be found on mijn.sccm.nl. These summaries give an indication of the depth of knowledge auditors must have. It is assumed that auditors know the essence of the legislation and regulations (aim, for whom, what criteria apply, main implications).

ANNEX 2, TABLE 1: LEGISLATION AND REGULATIONS RELEVANT TO ISO 50001 IN THE NETHERLANDS

SUBJECT	LEGISLATION AND REGULATIONS RELEVANT TO AUDITORS
General	<ul style="list-style-type: none"> - Wabo (art. 1.1) - Barim (Activities Decree) - Wm (Environmental Mgmt Act) - Industrial Emissions Guideline (RIE)/BBT-conclusions and BREF's for RIE-companies - E-PRTR
Activities Decree and Activities Regulation	<ul style="list-style-type: none"> - Activities Decree (art. 2.14 and 2.15 on energy saving measures) - Activities Decree section 3.2.1 on combustion plants - Activities Regulation (art. 2.16 and annex 10 with measure lists)
Covenants	<ul style="list-style-type: none"> - MJA-3 - MEE
Building Regulations	<ul style="list-style-type: none"> - Art. 5.1-5.7 (e.g. EPC, insulation values etc.)
Reporting	<ul style="list-style-type: none"> - Interim regulations due to implementation of energy audit from EED

Table 1 lists the main legislation and regulations relevant to ISO 50001 certification in the Netherlands. However, this is only a portion of the body of possible legislation and regulations. It is the responsibility of the CB to evaluate whether, in addition to the legislation and regulations in table 1 there are other legislation or regulations which could affect companies working in the technical areas for which accreditation is being requested.

Additional information

Information from SCCM

The SCCM website (www.sccm.nl) has more information including documents (downloadable), some in English, about various subjects including:

- background information about certification;
- benefits and added value of ISO 50001 certification;
- information leaflets (with explanation of implementation of elements of the management system);
- list of certified companies (can be searched for in a database);
- list of affiliated certification bodies;
- case studies with questions and answers used at the auditor ‘harmonization’ meetings;
- background of the foundation and a list of names of the organizations and persons involved;
- brochures from SCCM.

Information from third parties

Information about some subjects mentioned in the ISO 50001 certification scheme is available from the parties below.

- Best available technologies Rijksdienst voor Ondernemend Nederland
www.rvo.nl
- Accreditation Council for Accreditation
www.rva.nl
European co-operation for Accreditation
www.european-accreditation.org

The standards mentioned in this certification scheme can be ordered from NEN (Nederlands Normalisatie Instituut) in Delft, +31 (0)15-2690391 or www.nen.nl. The mentioned EA/IAF guidelines can be downloaded via the website of SCCM or the European co-operation for Accreditation.

Contact

Please feel free to ask questions. We are happy to help companies, organizations, consultants, supervisors, certification bodies and other interested parties.

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