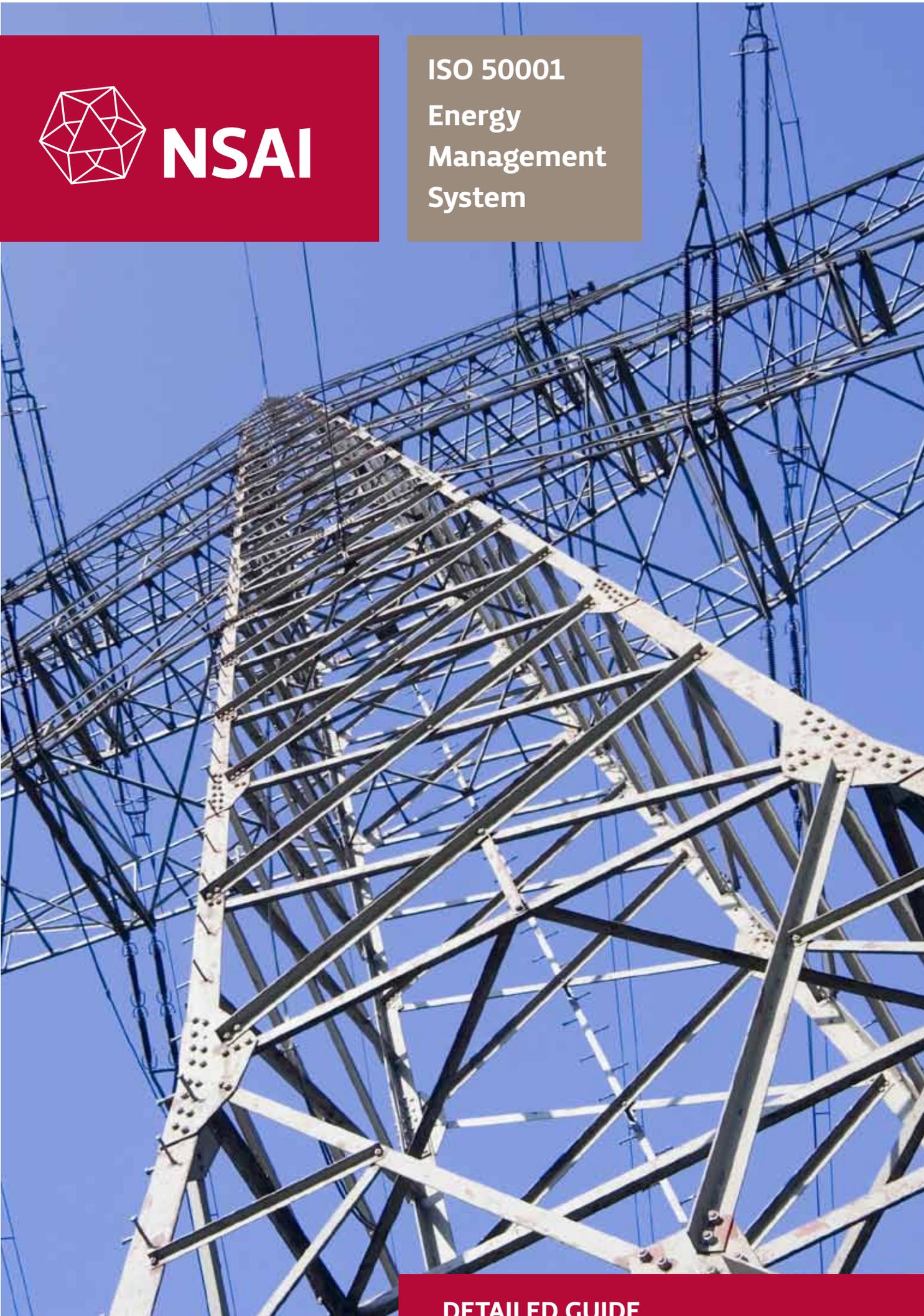




NSAI

ISO 50001

**Energy
Management
System**



DETAILED GUIDE



ISO 50001 Background

“It has been estimated that the ISO 50001 Energy Management Standard could have a positive impact on some 60% of the world’s energy use by providing public and private sector organizations with management strategies to increase energy efficiency, reduce costs and improve energy performance. Effective energy management is a priority focus because of the significant potential to save energy and reduce green house gas (GHG) emissions.” (ISO Press Release)

I.S. EN ISO 50001:2011 Energy Management Standard replaces I.S. EN 16001:2009 and is compatible with the widely used I.S. EN ISO 9001:2008 Quality Management Standard and I.S. EN ISO 14001:2004 Environmental Management Standard. It is easy to integrate it with other ISO certifications due to its similar structure. It has international recognition and is now considered the benchmark standard worldwide for Energy Management.

ISO 50001 Energy Management System requires organizations to:

- > Continually improve energy performance, including energy efficiency, energy use and consumption
- > Review energy use, consumption and efficiency at defined intervals
- > Document the methodology and criteria used to develop the Energy Review considering facilities, equipment, systems or processes
- > Establish an energy baseline and identify EnPIs (Energy Performance Indicators) appropriate for monitoring and measuring it’s energy performance
- > Establish, implement and maintain documented Energy Objectives and Targets



The benefits include:

- > Identifying opportunities for improvement
- > Ensuring greater level of control
- > Enhance image
- > Satisfy the expectations of most stakeholders
- > Reduced costs and improved business performance
- > Improved compliance with energy legislation
- > Reduce carbon emissions
- > Demonstrating transparency and commitment

ISO 50001 Energy Management System is suitable for all businesses regardless of their size, geography or industry. It is particularly effective though if the business operates in an energy intensive industry or one that faces green house gas (GHG) emissions regulation or legislation. ISO 50001 formalizes energy policies and objectives and embeds them into energy efficient thinking throughout the organization.

The organisation seeking certification of ISO 50001 is given flexibility in how it implements the new energy management system so there is no outside pressure to work on overly large projects.

Key Principles Behind ISO 50001



The 7 principles below are essential attributes of what management should possess in order to successfully operate an Environmental Management System in accordance with ISO 50001. The principles should serve as an indication of a framework for effective energy management.

1. Progress Management

Ensuring operation of the EnMS is making progress according to previously designed and agreed plans

2. Change Management

Ensuring operation of the EnMS is in line with any changes that occur either internally or externally (responding to threats appropriately)

3. Operational Problem Resolution Management

Ensuring operational problems are dealt with swiftly; treating them as opportunities for improvement is vital

4. Risk Management

Ensuring risk factors are evaluated in order to secure the position of continual improvement

5. Preparation for Contingency

Possible emergency scenarios should be documented and procedures devised in order to make sure that appropriate safety levels are maintained at all times

6. Document Management

Ensuring key documents are identified, maintained, updated and available when needed. Unnecessary bureaucracy should be avoided

7. Objective and Target Achievement Evaluation Criteria

Top management should provide transparent and objective evaluation criteria for target achievement. This is key to a successful evaluation of progress or results



Fundamental Elements of ISO 50001

Even though energy management has always been part of the ISO 14001 Environmental Management Standard there are significant differences that make the ISO 50001 Energy Management System (EnMS) very unique. ISO 50001 is not solely about non conformity prevention but about demonstrating superiority of your business. This EnMS sets targets for energy performance improvements and examines if they have been successfully achieved. In return this ensures sustainable business development in the long term and continuous improvement through the use of the “Plan – Do – Check – Act” (PDCA) cycle.

ISO 50001 identifies energy management as business management; having the framework to encourage suppliers and customers to better control their energy, and thus promoting energy efficiency through the supply chain, is encouraged. Successful Energy Management Systems require a strong top management involvement and leadership; appointing an EnMS representative from higher management to manage the system across the organization would help with its implementation and control.

The PDCA cycle is essentially the foundation of every ISO standard. The ISO 50001 cycle consists of the following:

Plan – Establish guidelines and provisions for EnMS operation following ISO 50001

Do – Operate business under the established EnMS

Check – Verify that you operate business under the established EnMS following ISO 50001

Act – Report the result of verification at management review



The verification of compliance to the ISO 50001 Energy Management System standard is done by the actual results written in reports and records as evidences against written guidelines and provisions, procedures and plans. This means that documentation is the most important aspect to consider when one seeks efficient operation of EnMS compatible to ISO 50001.

Understanding the Details



Plan – Establishing guidelines and provisions

The first step outlines the overall Energy Management System and provides guidelines for its implementation and control.

Management role

Top management commitment is extremely vital when it comes to establishing a new EnMS as they appoint and authorize projects for the EnMS champion, a chosen higher management representative that directs activities down to the team and effectively to the whole organization. Other activities of top management would include allocating resources, setting performance ownership, ensure fair evaluation, direct the management review and define the energy policy.

Energy policy

A new energy policy has to be created in line with the ISO 50001 requirements. It is important for the energy policy to be coherent with the nature, the scale of, and the impact on the organization's energy use as it will effectively become a framework for setting and reviewing energy objectives and targets.

An energy policy should emphasize commitment to continual improvement in energy performance and ensure availability of information and resources authorized by top management.



For a successful implementation of an Energy Management System, in line with ISO 50001, top management must be sure that the energy policy is documented, communicated and understood within the organization. It should also be reviewed and updated as necessary.



Understanding the Details

Do – Operating business under the new EnMS

The next step in putting the new energy management system into operation consists of energy planning, and implementation and operation.

Energy review

Firstly, energy review has to be conducted. Energy review analyses energy use based on measurements and other data, identifies significant areas of energy use and consumption and prioritizes and records opportunities for improving energy performance. An example of that would be the usage of renewable resources, alternative energy sources and other energy conservation opportunities (ECOs). The energy review defines a baseline and target and is used as evidence of energy performance improvement. Energy performance indicators (EnPIs) are also identified and objectives, targets and energy management action plans created.

Implementation and operation

The implementation and operation consists of applying additional 6 elements in establishing the energy management action plan:

- > **Competence, training and awareness** - resources should be put in place that ensure that the Energy Management team has adequate skills to control the EnMS
- > **Communication** - appropriate communication channels should be defined
- > **Documentation** - a system for the requirements and control of procedures and plans has to be in place
- > **Operational control** - general guideline and provision for overall EnMS operation
- > **Design** - guideline to reduce energy by reviewing the designs of facilities and manufacturing processes
- > **Procurement of energy services, products and equipment** - the collaboration with suppliers is key in becoming a 'greener' organization



Product design is not mentioned in ISO 50001 but is part of ISO 14001; the reason for its exclusion is the fact that product design does not necessarily deal with energy even though it could affect it.

Understanding the Details



Check – Verification of conformance

Checking of performance is done in four parts as can be seen in the conceptual business flow of the EnMS diagram. They are:

- > **Monitoring, measurement and analysis** – as by designed guidelines and procedures
- > **Non conformities, correction, corrective and preventative actions** – this ensures continual improvement of the energy management system
- > **Evaluation of compliance with legal and other requirements** – the EnMS has to stay alert; the recorded information can be presented during management review to serve EnMS purpose
- > **Internal audit of the energy management system** – can be conducted as a part of organization's audit programme. It examines that the EnMS conforms to energy objectives and target that have been established and that the EnMS is properly implemented and energy performance improved

Performance review must be done at planned intervals, the guidelines and procedures prepared in the steps before should make this process very easy to conduct. All reports and documents are then prepared for the management review.

Act – Reporting of results



Management review is one of the most important EnMS processes.

Management review:

- > Reassures top management role and responsibility
- > Accelerates the EnMS progress for continual improvement
- > Evaluate's people's effort
- > Understands and recognizes the changes made

It is not the analysis though, but the output of the management review that drives the EnMS forward. The management review should conduct, if necessary, changes in energy performance or energy performance indicators, changes in energy policy, objectives, targets or baseline and should allocate resources appropriately.



Key Steps To Getting Certified for ISO 50001 by NSAI

1. Applying

You can make certification application through our online quotations form or by phone, fax and email. We will review all the information and provide you with a company specific quotation. Our quotations cover a three-year period corresponding to the certification cycle and are calculated to make sure that every customer receives the certification service best suited to their needs.

2. Gap Assessment

Applicants can proceed at their own pace, with assessment dates arranged to suit. If you are unsure whether you are ready to undergo assessment for registration, we can offer you a Gap Assessment, in which we:

- > Conduct an on-site analysis of your current system
- > Assess this against the relevant standard
- > Prepare a report highlighting the gaps between your current system and the standard.

A gap assessment is optional and is not a requirement of the certification process.

3. Preliminary assessment – stage 1

The Preliminary Assessment involves an inspection of your documentation and a review ranging over various areas including:

- > The proposed scope of your registration
- > The status of implementation of your management system
- > The appropriate regulatory and legal requirements
- > Your management policies and objectives
- > Whether the system addresses the key areas of your business
- > Your site-specific activities – top level process review
- > Your key management elements, e.g. internal audits, reviews and complaints procedures
- > Your readiness to move onto Stage 2 of the assessment, the Registration Assessment.

The Preliminary Assessment normally takes place on-site. We recommend an interval of several weeks between the Preliminary Assessment and the Registration Assessment to allow time to resolve any issues arising from the Preliminary Assessment.

After the Preliminary Assessment is completed, we will produce a brief report evaluating your readiness to proceed to the next stage and identifying any areas that need to be improved before moving to Stage 2.

If the Preliminary Assessment finds that your organization is not ready for full Registration Assessment, the Stage 2 assessment can be delayed so any non-conformities can be addressed. In the case of occurrence of major non-conformities, Stage 1 becomes, in effect, a Gap Assessment. That means that a second Preliminary Assessment will have to be carried out.

Key Steps To Getting Certified for ISO 50001 by NSAI



4. Registration assessment – stage 2

The Registration Assessment (Stage 2) involves a full review of your management system, including relevant records and documents. Its purpose is to confirm that your management system is properly controlled and has predictable outcomes.

At the end of the Registration Assessment, NSAI issues a detailed report, together with the outcome (whether to recommend registration or not). We will identify any issues found during the assessment. You in turn will be expected to submit an action plan detailing what changes are planned to be made to the management system to eliminate or reduce the risk of the same issues re-occurring.

5. Surveillance and re-assessment

At least once a year, NSAI visits each registered company to ensure the management system is being maintained and is achieving its expected outcomes. During each visit, part of the management system is reviewed in depth.

Certificates expire every three years, with the expiry date indicated on the certificate. Before that date, we undertake a detailed reassessment, reviewing the performance of the whole management system to make sure every element is performing satisfactorily. The results of the previous visits are taken into account.

During the period of registration, changes are inevitable. NSAI works with each registered organization to make sure the management system remains sound. Normally, change can be reviewed and assessed during routine surveillance visits. In cases where change leads to the breakdown of the system, NSAI reserves the right to suspend or revoke certification.



Additional Material

Listed below are some tools to assist your organization in implementing I.S. EN ISO 50001 Energy Management System:

- > **NSAI ISO 50001 transition policy and summary of changes from EN 16001 to ISO 50001**
www.nσαι.ie/50001
- > **ISO website: ISO 50001 - Energy Management**
Find details on www.iso.org or go direct using <http://tinyurl.com/3orl8g2>
- > **ISO technical committee TC 242 Energy Management Committee**
www.iso.org/iso/iso_technical_committee?commid=558632
- > **Purchase the I.S. EN ISO 50001 standard**
Online: www.standards.ie or Tel: 01 857 6730

For further information contact:

NSAI
Certification Department
1 Swift Square, Northwood,
Santry, Dublin 9

T. 01 8073800
E. certification@nsai.ie
W. www.nσαι.ie