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# ISO 50001:2018

Energy Management Systems  
Gap Analysis

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# ISO 50001:2018 Gap Analysis

**ISO 50001:2018 certified Energy Management Systems helps organisations monitor and improve their energy use in a systematic and consistent manner.**

ISO 50001:2018 is the revision of the 2011 standard and was published in August 2018. ISO 50001:2011 will be withdrawn in August 2021. The main objective of the revision was to align the standard with the clause structure of ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018, making it easier to integrate all the separate systems.

This Gap Analysis allows you to determine where you are on your journey toward ISO 50001:2018 certification from either having no Energy Management System (EnMS) in place or if you are transitioning from the 2011 version.

This document, which highlights clauses which were not previously covered or have significantly changed from ISO 50001:2011, should be used in conjunction with the ISO 50001:2018 standard.

You should use this Gap Analysis as an aid towards confirmation that your management system complies with the requirements of ISO 50001:2018

*Please note that this gap analysis is for your own internal use only and should not be returned to Global Standards.*

## NEW Clause 4 - Context of the Organisation

This clause underpins the 2018 standard and establishes the context of the Energy Management System (EnMS). It gives you the opportunity to identify all internal and external issues that are relevant and may affect the strategic direction of the organisation and the EnMS. You will also need to identify the needs and expectations of internal and external interested parties that are relevant to your management system. These groups can include workers, shareholders, sub-contractors, regulatory groups etc. Finally, you'll need to establish, implement, maintain and continually improve your Energy Management System.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>4.1 Understanding the organisation and its context</b>	<p>You need to be able to demonstrate that you have determined external and internal issues that are relevant to your organisation's purpose and that affect your ability to achieve the intended outcome(s) of your EnMS and improve your energy performance. Depending on the size and/or complexity of operations, a simple approach such as asking "what if" questions can be useful, or more structured tools such as a SWOT (Strengths, Weaknesses, Opportunities and Threats) or PESTLE (Political, Economic, Social, Technological, Legal, Environmental) analysis can be used.</p> <p>Consideration should be given to:</p> <ul style="list-style-type: none"> <li>• The internal and external issues relevant to your EnMS</li> <li>• The process of monitoring the internal and external issues and how you have considered their impact on your ability to achieve the intended outcome(s) of your EnMS and improve your energy performance</li> </ul>						

## NEW Clause 4 - Context of the Organisation

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>4.2 Understanding the needs and expectations of workers and other interested parties</b>	<p>You need to demonstrate that you have identified, monitored and reviewed all interested parties that are relevant to the EnMS and its requirements.</p> <p>Consideration should be given to:</p> <ul style="list-style-type: none"> <li>• Other interested parties that are relevant to energy performance and the EnMS</li> <li>• Which of the identified needs and expectations the organisation addresses through its EnMS</li> </ul> <p>You will need to ensure that you have access to the applicable legal requirements and other requirements related to your energy efficiency, energy use and energy consumption, determine how these requirements apply to your energy efficiency, energy use and energy consumption, ensure that these requirements are taken into account and have a system in place to ensure they are reviewed at defined intervals.</p>						
<b>4.3 Determining the scope of the EnMS</b>	<p>The standard requires you to consider the context of the organisation (Clause 4.1) and interested parties (Clause 4.2). You will need to identify any boundaries to your scope and applicability of the system. It is not permissible to exclude any energy types within the scope and boundaries. You will need to ensure that your organisation has the authority to control its energy efficiency, energy use and energy consumption within the scope and boundaries.</p>						

## NEW Clause 4 - Context of the Organisation

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>4.4 Energy Management System</b>	<p>This has not changed from the 2011 standard, it has just been reworded to improve clarity. This was formerly clause 4.1 – General Requirements.</p> <p>To comply with this clause you will need to establish, implement, maintain and continually improve your EnMS. This now requires the adoption of a process approach. Although every organisation will be different, documented information such as written methods and procedures could support this.</p> <p>Consideration should be given to the process-based system including:</p> <ul style="list-style-type: none"> <li>• The size of organisation and its type of activities, processes, products and services</li> <li>• The complexity of processes and their interactions</li> <li>• The competence of personnel</li> </ul>						

## NEW Clause 5 - Leadership and Commitment

Top management is now required to demonstrate leadership and commitment with respect to continual improvement of the organisation's energy performance and the effectiveness of the EnMS. Top management must be involved in the input and operation of the EnMS. They must ensure that the EnMS is integrated into the organisation's business processes and that the policy and objectives are compatible with the strategic direction of the organisation. The new standard requires top management to take overall responsibility and accountability for the continual improvement of energy performance.

Finally, the clause places requirements on top management to assign relevant responsibilities and provide support to other management roles.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>5.1 Leadership and commitment</b>	<p>The requirements within this clause are generally self-explanatory. You will need to provide information on:</p> <ul style="list-style-type: none"> <li>• How top management ensures achievement of energy performance and effectiveness of the EnMS through scope and boundaries</li> <li>• EnMS policy and objectives</li> <li>• Integration of EnMS requirements into the organisation's business processes</li> <li>• Ensuring the EnMS achieves its intended outcomes</li> <li>• Directing and supporting persons to contribute towards the effectiveness of the EnMs to drive improvements and ensuring that energy performance indicators appropriately represent energy performance.</li> </ul>						

## NEW Clause 5 - Leadership and Commitment

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>5.2 Policy</b>	<p>Top management needs to establish, implement and maintain an EnMS policy that includes:</p> <ul style="list-style-type: none"> <li>• A commitment to ensure the availability of information and necessary resources to achieve objectives and targets</li> <li>• Compliance to applicable legal (and other) requirements related to energy efficiency, energy use and energy consumption</li> <li>• Support procurement and design activities that consider energy performance management</li> </ul> <p>The policy must be appropriate to the purpose, size and context of the organisation. Consideration should be given to when the policy was last reviewed/amended and details of any changes required to meet the requirements of Clause 5.2.</p>						
<b>5.3 Organisational roles, responsibilities and authorities</b>	<p>Top management needs to ensure that the responsibilities and authorities for relevant roles are assigned, communicated and understood throughout the organisation. This must be maintained as documented evidence. Consideration should be given to how top management has established and communicated responsibilities and authorities for the effective operation and continual improvement of the EnMS, how reporting on the performance of the management system is communicated to top management and how they establish criteria and methods needed to ensure that the operation and control of the EnMS are effective.</p>						

## NEW Clause 6 – Planning

In this updated clause, there is an increased focus on ensuring that energy planning is considered within the context of the organisation and interested parties. There is now a requirement to identify risks and opportunities regarding energy performance, to identify actions and plan how to integrate and implement the actions into the EnMS and energy performance processes. There is also a requirement to evaluate the effectiveness of these actions.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>6.1 Actions to address risks and opportunities</b>	You are required to identify and manage the risks and opportunities relating to the EnMS and energy performance. Planning should be consistent with the energy policy and lead to actions that result in continual improvement in energy performance. Your organisation should ensure that risks and opportunities give assurance that the EnMS can achieve its intended outcome(s) including energy performance improvement, prevent or reduce undesired effects and achieve continual improvement on energy performance. Actions should be planned to allow integration into the EnMS and energy performance processes. Effectiveness of actions taken should be evaluated.						
<b>6.2 Objectives, energy targets and planning to achieve them</b>	There is still a requirement to establish and maintain action plans that consider what will be done, what resources are required, who will be responsible, when it will be completed and how the results will be evaluated. However, there is now an additional requirement to pay consideration to how identified actions can be integrated into the organisation's business processes.						



## NEW Clause 6 - Planning

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>6.3 Energy review</b>	<p>This clause is the same except there is now an additional requirement to identify the person(s) doing work under your organisation's control that could influence or affect the SEU(s). The energy review still needs to:</p> <ul style="list-style-type: none"> <li>• consider current types of energy</li> <li>• consider past and present energy use and consumption</li> <li>• identify SEU's</li> <li>• determine relevant variables and current energy performance</li> <li>• determine and prioritise opportunities for improving energy performance</li> <li>• estimate future energy use and consumption</li> </ul>						
<b>6.4 Energy performance indicators</b>	<p>The standard still asks for the organisation to determine EnPI's that are appropriate for measuring and monitoring its energy performance and regular review against the respective energy baseline (EnB) with retention of documented information of EnPI values. However, there is an enhanced requirement to ensure that EnPI's enable your organisation to demonstrate energy performance improvement and the method for determining and maintaining the EnPI's be retained as documented information. The standard also asks to consider data for relevant variables that may significantly affect energy performance. (This could be temperature, production volumes, occupancy, etc.)</p>						

## NEW Clause 6 – Planning

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>6.5 Energy baseline</b>	The standard still asks for the organisation to establish a baseline using the information from the energy review over a suitable period of time. The baseline must still be revised in the event of EnPI's no longer reflecting the organisation's energy performance, or if there have been major changes to the static factors using a pre-determined method. However, there is now an additional requirement that if data indicates relevant variables significantly affect energy performance, the organisation must carry out normalisation of the EnPI value(s) and corresponding EnB(s) and information of relevant variable data and modifications to EnB(s) must be retained as documented information.						
<b>NEW 6.6 Planning for the collection of energy data</b>	This is a new requirement. It asks that key characteristics of any operation that affects energy performance is identified, measured, monitored and analysed at planned intervals. This should be done through an energy data collection plan which specifies what data is necessary to monitor the key characteristics and states how and at what frequency the data shall be collected and retained. Data should be accurate and repeatable, and should include the relevant variables for the SEU's, energy consumption related to the SEU and the organisation, SEU operational criteria and static factors (if applicable). This must be retained as documented information.						

## NEW Clause 7 – Support

You need to have the right support to ensure the EnMS can function effectively, including the resources, competence, communication, awareness and requirements for documented information to meet your energy targets and objectives.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>7.1 Resources</b>	The organisation needs to determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of energy performance and the EnMS. This can be people, equipment, competency, awareness, documentation and an enhanced requirement regarding internal and external communication.						
<b>7.2 Competence</b>	<p>This has not changed from the 2011 standard. Your organisation still needs to determine the competency of people doing work under its control that affects energy performance and the EnMS and ensure that these persons are competent on the basis of appropriate education, training, skills or experience.</p> <p>Actions (where applicable) must be taken to acquire the necessary competence. You must also evaluate the effectiveness of the actions taken and retain documented information on this.</p> <p>Applicable actions can include, for example, the provision of training to, the mentoring of, or the reassignment of currently employed persons; or the hiring or contracting of competent persons.</p>						

## NEW Clause 7 - Support

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>7.3 Awareness</b>	<p>This has not changed from the 2011 standard. The organisation needs to ensure any persons doing work under their control are made aware of:</p> <ul style="list-style-type: none"> <li>• the energy policy</li> <li>• their contribution to the effectiveness of the EnMS including achievement of objectives and energy targets</li> <li>• the benefits of improved energy performance</li> <li>• the impact of their activities or behaviour with respect to energy performance</li> <li>• the implications of not conforming with EnMS requirements</li> </ul>						
<b>7.4 Communication</b>	<p>This clause has now been expanded to include both internal and external communications relevant to the EnMS to include what, when, with whom and how. Established communication processes are now required to ensure that the information communicated is consistent with information generated within the EnMS and is dependable.</p> <p>There is also a requirement to establish and implement a process to allow any person doing work under the organisation's control to make comments or suggest improvements to the EnMS and energy performance and to consider retaining documented information of suggested improvements.</p>						

## NEW Clause 7 - Support

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>7.5 Documented information</b>	This replaces 4.5.4 in the 2011 standard and is still relevant to information required by the standard (energy review, baseline) and any documented information that has been determined necessary for the effectiveness of the EnMS and demonstrates energy performance improvement. It also describes how the organisation will create, update, control and retain documented information relating to the EnMS.						

## NEW Clause 8 - Operation

This clause provides guidance on the operational planning and control necessary for the EnMS and energy performance improvement. There are some enhancements from the 2011 standard, such as consideration of outsourced SEU's or outsourced processes affecting the energy performance of SEU's. It still includes design and procurement which have not changed significantly.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>8.1 Operational planning and control</b>	Processes related to SEU's needed to meet requirements of the organisation need to be planned, implemented and controlled. This should be through establishing criteria for the processes such as effective operation and maintenance of facilities, systems, and energy using processes. The criteria must be communicated to relevant persons, implementing control of the processes in accordance with set criteria. Documented information demonstrating confidence that the processes have been carried out as planned must be retained.						
<b>8.2 Design</b>	This clause has been slightly enhanced. It still asks for consideration of energy performance improvement activities and operational control in the design of new, modified and renovated facilities, equipment, systems and energy using processes that can have a significant impact on energy performance but also references consideration of planned or expected operating lifetime (life cycle perspective). Results of design activities should be incorporated into specification, design and procurement activities and documented information of design activities shall be retained.						

## NEW Clause 8 - Operation

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>8.3 Procurement</b>	This has not changed from the 2011 standard. Organisation must establish and implement criteria for evaluating energy performance over the planned or expected operating lifetime when procuring energy using products, equipment and services which are expected to have a significant impact on the organisation's energy performance. Where applicable, specifications shall be defined and communicated, and suppliers should be informed that energy performance is part of the evaluation criteria for procurement.						

## NEW Clause 9 – Performance Evaluation

The structure of this clause has not changed. However, some elements have additional/enhanced requirements that must be considered and these are highlighted below.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>9.1 Monitoring, measurement, analysis and evaluation</b>							
<b>9.1.1 General</b>	<p>The organisation must determine what needs to be monitored and measured, including the following as a minimum:</p> <ul style="list-style-type: none"> <li>• the effectiveness of the action plans in achieving objectives and energy targets</li> <li>• EnPI(s)</li> <li>• operation of SEU's</li> <li>• actual versus expected energy consumption</li> </ul> <p>There is now an additional requirement to consider the methods for monitoring, measurement, analysis and evaluation (as applicable), to ensure valid results. There must also be consideration as to when the monitoring and measurement shall be performed and when the results from monitoring and measurement will be analysed and evaluated. There is also more focus on the comparison of EnPI's against corresponding EnB's to demonstrate improvement in energy performance.</p>						
<b>9.1.2 Evaluation of compliance with legal requirements and other requirements</b>	<p>This requirement has not changed. There is still a requirement to evaluate compliance with legal and other requirements related to energy efficiency, energy use, energy consumption and the EnMS, with retained documented information on the results of evaluation of compliance and any actions taken.</p>						



## NEW Clause 9 – Performance Evaluation

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>9.2 Internal audit</b>	<p>Additional requirements are now specified relating to defining the 'audit criteria' and scope and ensuring results of the audits are reported to relevant management. Your organisation must also plan, establish, implement and maintain an audit programme(s) including the frequency, methods, responsibilities, planning requirements and reporting, which shall:</p> <ul style="list-style-type: none"> <li>• take into consideration the importance of the processes concerned and the results of previous audits</li> <li>• define the audit criteria and scope for each audit</li> <li>• select auditors and conduct audits to ensure objectivity and impartiality of the audit process</li> <li>• ensure that the results of the audits are reported to relevant management</li> <li>• take appropriate actions for nonconformity and continual improvement</li> <li>• retain documented information as evidence of the implementation of the audit programme(s) and the audit results</li> </ul>						
<b>9.3 Management review</b>	<p>There are now additional requirements for management review outputs including defining actions to take if objectives and targets have not been achieved, the opportunity to improve integration with business processes, improvement of competence, awareness and communication.</p>						

## NEW Clause 10 - Improvement

This is a new requirement with more focus on the continual improvement of the EnMS to drive energy performance improvement and must be demonstrated to comply with the standard.

Clause	Plain English Description	Yes	No	Evidence/Corrective Action Required	Owner	Target Date	Date Completed
<b>10.1 Non-conformity and corrective action</b>	This clause covers the requirement for establishing a process to investigate nonconformances, identify root cause and implement corrective action. This clause has not changed from the 2011 standard.						
<b>10.2 Continual improvement</b>	This new clause asks for demonstration that the organisation is continually improving the suitability, adequacy and effectiveness of the EnMS through continual energy performance improvement. Note that continual improvement can be demonstrated through reduction in energy use and through improvement of the EnMS.						

## About Global Standards

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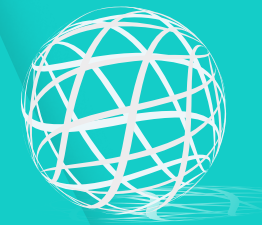
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