

ISO 50001:2018 - a Lever for Employee Engagement

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1. Introduction

ISO 50001 is the global Energy Management System Standard, first launched as ISO 50001:2011 in June 2011. A new version, ISO 50001:2018, was released in August 2018 and by August 2021 the transition to this new version will be complete by those currently holding certification to ISO 50001:2011.

The Standard is gaining momentum across the world and to 31 December 2019 there were 18,227 certifications covering 42,215 sites. The top ten countries, by number of certifications, is shown in Figure 1. To put this in perspective there were 307,059 certifications to ISO 14001 up to 31 December 2018. So there are 17 times more certifications to ISO 14001 compared to ISO 50001. This shows there is still great potential for the application of ISO 50001 across the world both numerically and by country.

Country	No of ISO 50001 Certifications
Germany	5,786
China	2,934
United Kingdom	1,184
Italy	1,168
France	812
India	773
Spain	625
Hungary	472
Turkey	306
Bulgaria	252
Other Countries (122)	3,905
Other Countries (48)	0
Total	18,227

Figure 1 ISO 50001 certifications by country to 31 December 2019
(Source ISO Survey)

For example, Figure 1 shows that the top ten countries account for 79% of certifications and the remaining 122 countries account for 21% of certifications. A total of 48 countries have no certifications at all.

In most EU countries, certification to ISO 50001 counts as a route to compliance for ESOS. In some EU countries, for some participants, it is considerably less expensive to hold certification to ISO 50001 than to conduct hundreds of ESOS Energy Audits every four years. This is particularly true in EU countries where a sampling approach to auditing is not permitted in multi-site organisations.

1.	Scope
2.	Normative references
3.	Terms and definitions
4.	Context of the organization <ul style="list-style-type: none"> • <i>Understanding the organization and its context</i> • <i>Understanding the needs and expectations of interested parties</i> • <i>Determining the scope of the management system</i> • <i>Management system</i>
5.	Leadership <ul style="list-style-type: none"> • Leadership and commitment • <i>Policy</i> • Organizational roles, responsibilities and authorities (Energy Management Team)
6.	Planning <ul style="list-style-type: none"> • <i>Actions to address risks and opportunities</i> • <i>Objectives and planning to achieve them</i>
7.	Support <ul style="list-style-type: none"> • <i>Resources</i> • Competence • Awareness • Communication • <i>Documented information</i>
8.	Operation <ul style="list-style-type: none"> • Operational planning and control • Design • Procurement
9.	Performance evaluation <ul style="list-style-type: none"> • <i>Monitoring, measurement, analysis and evaluation</i> • <i>Internal audit</i> • Management Review
10.	Improvement <ul style="list-style-type: none"> • <i>Nonconformity and corrective action</i> • <i>Continual improvement</i>

Figure 2 Main Clauses of ISO 50001:2018

2. The Structure of ISO 50001:2018

One of the main changes in the move from ISO 50001:2011 to ISO 50001:2018 has been the introduction of the High Level Structure (HLS) as shown in Figure 2. There are ten generic clauses which are common to all ISO Standards. Some elements of ISO 50001:2018 are 'system' clauses, common to all ISO Standards, such as internal audit and management review. Other clauses are 'energy' clauses specific to ISO 50001:2018. The energy clauses fall into three specific categories, but not designated as such in the Standard. They are:

- technical aspects
- data aspects
- people/behavioural aspects

which are applied to improving energy performance improvement. All three are inter-dependent and as such none can exist in isolation. See Figure 3.

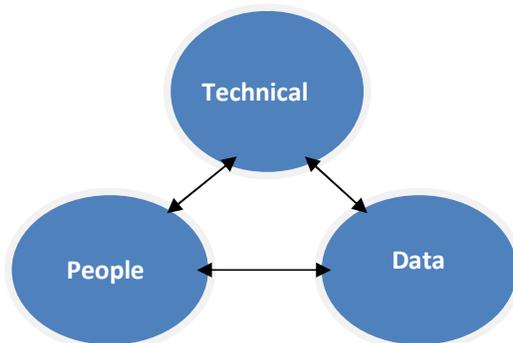


Figure 3 Energy Clause Categories in ISO 50001

The main people clauses in Figure 2 are highlighted in yellow.

3. Behavioural Clauses of ISO 50001:2018

For some organisations the application of ISO 50001 has delivered unexpected savings by employee engagement which is integral to the Standard. In one sense all clauses are behavioural in that someone in the organisation has to apply the clauses. But within the Standard there are clauses specifically geared to behavioural change by different types of people. This is summarised in Figure 4.

Clause No.	Title	People Group
5.1	Leadership and Commitment	Top Management
5.3	Organisation roles, responsibilities and authorities	Top Management Energy Management Team
7.2	Competence	Competent people affecting energy performance
7.3	Awareness	All employees
7.4	Communication to	Target audiences (internally) Target audiences (externally)
7.4	Communication from	Employees feeding back
8.1	Operational planning and control	Operation/maintenance within organisation or outsourced impacting energy performance
8.2	Design	Designers impacting energy performance
8.3	Procurement	Procurement staff impacting energy performance
9.3	Management Review	Top Management Energy Management Team

Figure 4 Key People Clauses in ISO 50001:2018

So the key groups of people identified are:

- Top Management
- Energy Management Team
- Competent People
- All Employees
- Operation/Maintenance
- Designers
- Procurers

So the Standard addresses those who can make a difference in improving energy performance depending on their role.

Often energy management fails in organisations because of lack of senior level support with little human and financial resources dedicated to the process. This is specifically addressed in Clause 5.1 on Leadership and Commitment. So if gaining senior management support is an issue, this can help. The Standard is very specific about the roles and responsibilities of senior management in demonstrating commitment to supporting the EnMS. Clause 5.3 describes the role of the Energy Management Team who have the responsibility of implementing the EnMS and who will be held accountable by senior management. In ISO 50001:2011 a key person was the Management Representative but in ISO 50001:2018 this role has been removed and replaced with the term 'Energy Management Team'. If the team has a leader, then it is the equivalent of the Management Representative. If the team does not have a leader it is likely to be ineffective. So it could be argued the Management Representative role should have been retained.

Three key people/behaviour clauses are Clauses 7.2 (Competence), 7.3 (Awareness) and 7.4 (Communications). These are now described and discussed below.

4. Competence

Clause 7.2 states:

7.2 Competence

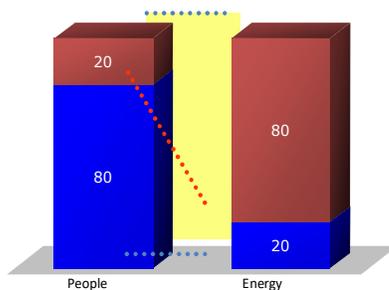
The organisation **shall**:

- a) determine the necessary competence of person(s) doing work under its control that affects its energy performance and EnMS;
- b) ensure that these persons are competent on the basis of appropriate education, training, skills or experience;
- c) where applicable, take actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken;
- d) retain appropriate documented information as evidence of competence.

The clause covers competence of those whose work affects energy performance. It is assumed that these are people whose work has an energy dimension within their responsibilities and job description and that any lack of competence can negatively and significantly impact energy performance. This could be relatively few people in an organisation and could be less than 1% of the workforce in an organisation of 10,000 employees. It is up to the organisation to identify these people to ensure they are competent, evidenced by one or more of the following: education, training, skills and experience.

Annexe A *Guidance for Use* provides a commentary on the requirements of the Standard. The Annexe is not auditable but for guidance only. In relation to competence paragraph A.7.2 mentions two groups of people: top management and EnMS team members - a term not defined in Clause 3.2 "Terms related to management system". It is assumed this means the Energy Management Team. But competence requirements can be applied to anyone the organisation considers appropriate.

Typically in a Pareto situation where 20% of the workforce control 80% of the energy, then the 20% would be seen as significant and requiring competence. In contrast the 80% controlling the 20% of energy require awareness.



In some energy intensive organisations 5% of the workforce may control 95% of the energy. In this situation the competence of the 5% is even more critical to good energy performance. Therefore analysing who controls what energy is vital in determining competence requirement and how it can

be met, measured and monitored. This is an important element in developing a proper behaviour change strategy.

5. Awareness

Clause 7.3 states:

7.3 Awareness

Persons doing work under the organisation's control **shall** be aware of:

- a) the energy policy;
- b) their contribution to the effectiveness of the EnMS, including achievement of objectives and energy targets, and the benefits of improved energy performance;
- c) the impact of their activities or behaviour with respect to energy performance;
- d) the implications of not conforming with the EnMS requirements.

Awareness covers anyone in the organisation or as the Standard puts it: "Persons doing work under the organisation's control". The awareness requirement is wide ranging covering energy policy, EnMS, objectives and energy targets, the benefits of improved energy performance and the implications of not conforming with the EnMS requirements.

Careful thought is required on meeting these very specific awareness requirements. The awareness raising method needs to be carried out cost effectively but also effectively so that if an employee is randomly selected for interview during an audit, they would be knowledgeable and be equipped to answer questions in all the areas specified.

6. Communication

Clause 7.4 states:

7.4 Communications

The organisation **shall** determine the internal and external communications relevant to the EnMS, including:

- a) on what it will communicate;
- b) when to communicate;
- c) with whom to communicate;
- d) how to communicate;
- e) who communicates.

The organisation shall establish and implement a process by which any person(s) doing work under the organisation's control can make comments or suggest improvements to the EnMS and to energy performance. The organisation shall consider retaining documented information of the suggested improvements.

This clause covers internal and external communication in relation to the EnMS. A communication plan should be produced which addresses internal and external aspects. The external communication should relate to identified interested parties and risks and opportunities. For internal communication a feedback mechanism should be in place for suggestions to improve the EnMS and energy performance.

7. Case Study - Ibstock Brick

Ibstock Brick are the first brick-making company in the UK to be certified to ISO 50001.

Ibstock Brick

*Ibstock's motivation for implementing ISO 50001 was to make better use of the energy we consume and achieve consistency in production processes through our **people**.*

*We are extremely proud of what the ISO 50001 process has achieved as it has given us a clear road map, effective communication tools, supportive **external partnerships** and, above all, **employee involvement** at all levels.*

Michael McGowan
Group Sustainability Manager
Ibstock Brick



In this quotation it is noticeable how people, communication and employee engagement feature in the benefits perceived by the company.

For further details of the people dimension of Ibstock's implementation of ISO 50001 see:

<http://www.emexlondon.com/ibstocks-energy-management-strategy/>

In November 2019, Ibstock were awarded the coveted *Behaviour Change/Employee Engagement Award* at *The Energy Awards*. The engagement process was driven by their EnMS certified to ISO 50001.

An extract from the award is as follows:

Ibstock's energy efficiency and wider sustainability ambitions are being achieved by putting people at the heart of the company. The group identified people as the main energy users, and implemented a two-year training plan tailored for significant energy users and all energy users. The aim of the programme was to motivate employees to focus on best practice and take responsibility for their role in managing energy consumption.

Communication has also been key to Ibstock's success. It has been mindful to consider the views of the key stakeholder before embarking on changes to the business and ensuring employees understand and are aware of the group's activities and success.

The benefits of the programme have been substantial and significant. Highlights include:

- On average it now takes almost 65% less energy to make brick than was the case in 1970.
- Energy saving measures means the business is on target to achieve a 15% reduction in CO₂ per tonne of production

In a competitive category, the judges were impressed by the bottom-up approach to ensure the engagement of employees was genuine and sustainable, commenting *"Not only were employees engaged, but results achieved were real and significant. We are confident this program will continue to deliver results going forward, often the problem with behavioural change initiatives."*

Commenting on the win, **Group Sustainability Manager Michael McGowan**, said:

*"We recognise that we are major energy users, and delivering sustainable performance is a priority for us. Whilst we have invested in energy efficient plant and clean technologies to make performance improvements, we realised that our energy efficiency ambitions could only be achieved by **putting people at the heart of our strategy**.*

*The results achieved are a testament to the way in which our **employees** have become more aware of ways to improve energy usage across our operations. This latest award offers proof that our **hard-working team** is doing the right things and our **people-led** strategies are working."*

8. Conclusion

Any serious energy management strategy must address the human factor or it will fail. This is true irrespective of whether an organisation implements ISO 50001.

If an organisation decides to put in place an EnMS compliant with ISO 50001, then people solutions will be a key element for success. The Ibstock case study illustrates this point. Every person in every organisation uses energy. People make things happen and people have great potential for energy waste and energy savings. People matter. Therefore people are rightly centre stage in ISO 50001.

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