ISO 50001
Energy Management System

Your implementation guide

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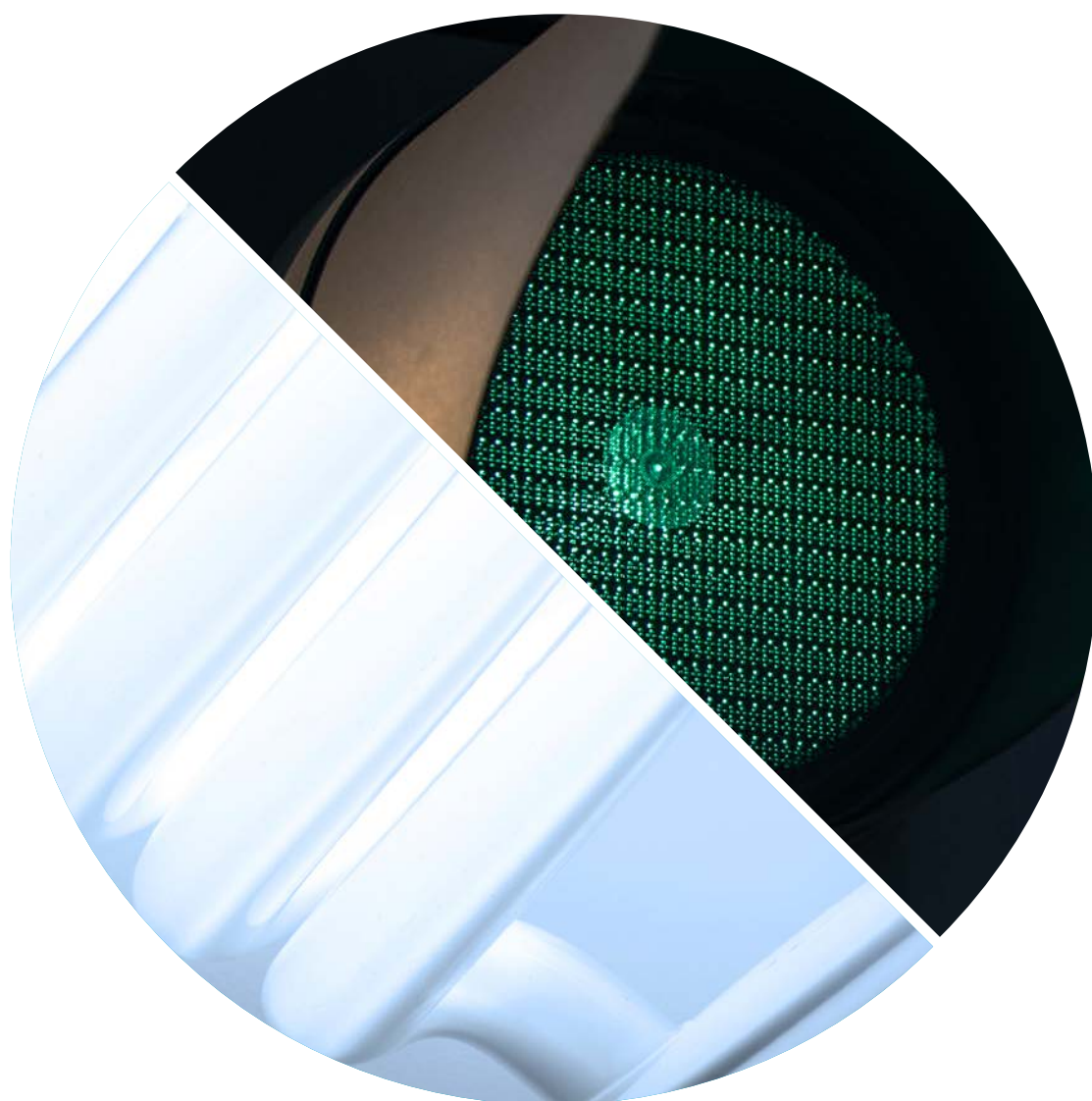
ISO 50001 lowers your energy consumption, your energy bills and your environmental footprint

Used by organizations across the world to manage and reduce energy use and costs, ISO 50001 is an excellent framework to help implement an energy management system (EnMS). From large retailers to smaller manufacturers and small businesses, the standard offers organizations the opportunity to become more resilient against energy costs and availability. Whether you're interested in certifying to ISO 50001 to reduce costs, comply with legislation or increase your sustainability, implementing the standard provides a systematic approach to achieving all three.

At BSI we don't just certify our clients, we work to become a true business partner. Our most successful client relationships are based on understanding not only your need for certification but your business too: we'll keep you up-to-date on the standards, legislation, training and news that's relevant to your organization. We also offer tools and technology that can improve not just how your management systems work, but how your overall business operates.

"Sheffield Hallam University has achieved many of the big-win energy savings needed to improve its processes. The framework of ISO 50001 has provided us with a tool to deliver this which allows us to maximize potential opportunities and implement changes to operations and behaviours."

Gillian Wright,
Energy Carbon Manager,
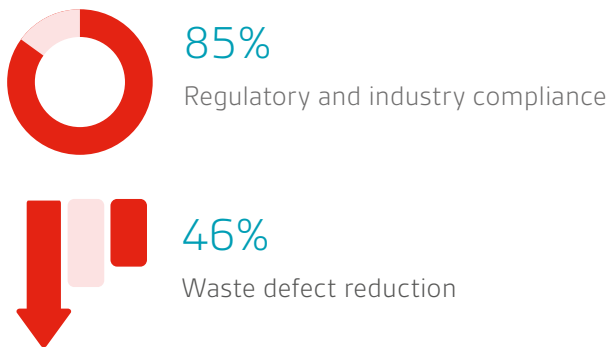Sheffield Hallam University

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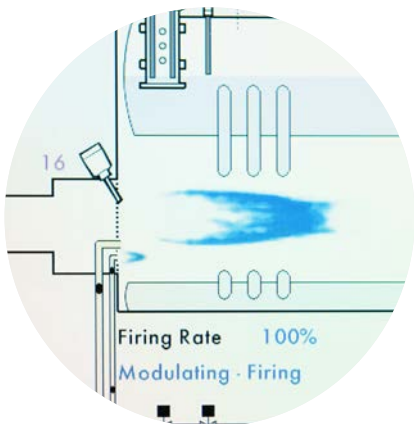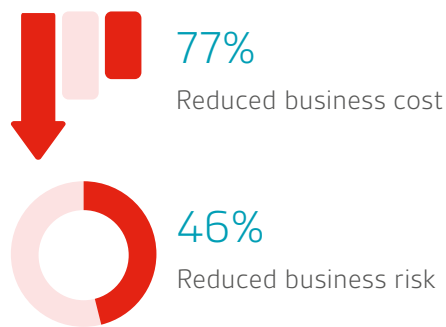# How **ISO 50001** works and what it delivers for you and your company

ISO 50001 is a sustainable business tool that helps organizations implement a flexible and robust energy management system (EnMS). Effective energy management isn't just good for business, it's also becoming a requirement. ISO 50001 will help your organization understand how you're using various types of energy and identify realistic ways of reducing consumption, emissions and costs. The international standard outlines energy management practices that not only save your organization money today, but also in the long term; all while helping shield your bottom line from the increasing cost of energy. ISO 50001 also shows your commitment to reducing environmental impact which can help you stand out from your competition and earn new business.

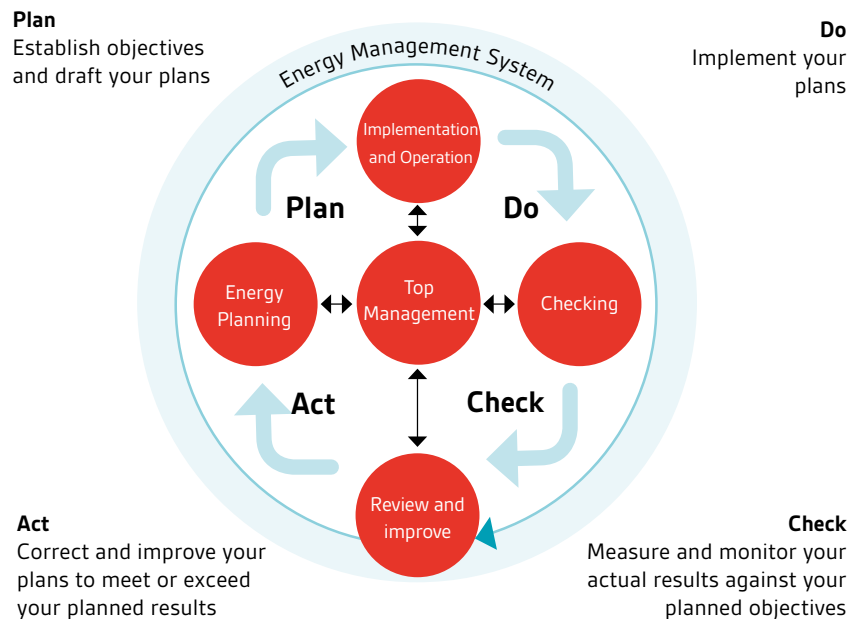## Benefits of ISO 50001*

Environmental improvements

85%
Regulatory and industry compliance

46%
Waste defect reduction

Business improvements

77%
Reduced business cost

46%
Reduced business risk

How **ISO 50001** works

Released in 2011, and containing 4 key clauses, ISO 50001 is based on the management system model of continual improvement. The standard provides a framework of requirements for organizations to:

- Develop a policy for more efficient use of energy

- Fix targets and objectives to meet the policy

- Use data to better understand and make decisions about energy use

- Measure the results

- Review how well the energy policy is working

Plan
Establish objectives and draft your plans

Do
Implement your plans

Energy Management System

Implementation and Operation

Plan

Do

Energy Planning

Top Management

Checking

Act

Check

Review and improve

Act
Correct and improve your plans to meet or exceed your planned results

Check
Measure and monitor your actual results against your planned objectives

The Plan-Do-Check-Act (PDCA) cycle is the operating principle of ISO management standards. By following this cycle, you can effectively manage—and continually improve—your organization's effectiveness.

Some of the core concepts of ISO 50001 are:

Concept	Comment
Management responsibility	The actions that top management must take in order to support the successful implementation and maintenance of an EnMS
Energy review	The analysis of energy use and consumption and the following identification of opportunities for improving energy performance
Energy baseline	The readings of energy consumption over a defined period of time that will be used to measure the performance of an EnMS against
Performance indicators	Measures that will be used to evaluate how successfully the EnMS is operating
Communication	Specific guidance on what needs to be communicated to whom as an EnMS is being planned, implemented, maintained or improved
Documentation	Required written details of the EnMS and supporting information such as energy consumption bills
Non-conformity and corrective action	Non-conformities are identified via the audit process as the non-fulfilment of a requirement of the standard, corrective actions are what the actions an organization must take in order to fulfil the requirement
Management review	The process by which management evaluates the progress and achievements of the EnMS

Key requirements of ISO 50001

Clause 1: Scope

This clause relates to the scope or coverage of the standard to help organizations achieve the intended outcomes of its EnMS.

Clause 2: Normative references

There are no normative references, for example other additional requirements in other standards, that have to be considered. The clause is retained in order to maintain the same numbering scheme as all the other management system standards.

Clause 3: Terms and definitions

This listing of terms and definitions is included in the standard to provide readers with an understanding of terms related to energy management.

**Clause 4.2:** Management Responsibility

This clause clearly lays out the need for top management to commit to supporting the energy management system. This means that high-level representatives of the organization have to support the definition, establishment, implementation and maintenance of an energy policy. Key commitments include conducting management reviews, making sure that the necessary human, technology and financial resources are available and ensuring that energy objectives and targets are established.

Clause 4.3: Energy Policy

An organization's energy policy will confirm its commitment to improving energy performance. The policy must reflect the size and nature of the business, commit to continual improvement and compliance with any legal requirements. It will also establish a process for setting and reviewing energy objectives and targets, support energy-efficient product purchases and how and when the policy is reviewed and updated.

Clause 4.4: Energy Planning

This clause focuses on how a business organizes itself to address its energy use. It requires information gathering around the organization's activities that can affect energy as well as what, if any, legal requirements the organization must meet. The organization must also develop an energy review that analyses energy use and consumption to gain an understanding of where in the business energy consumption is highest. Using this data, improvement opportunities must be identified and prioritized. How the improvements will be measured also has to be decided. Establishing an energy baseline is also required to understand how much energy is being used before the energy management system is put in place. Finally, in line with the energy policy, energy objectives and targets need to be established, implemented and documented along with action plans detailing how they will be achieved.
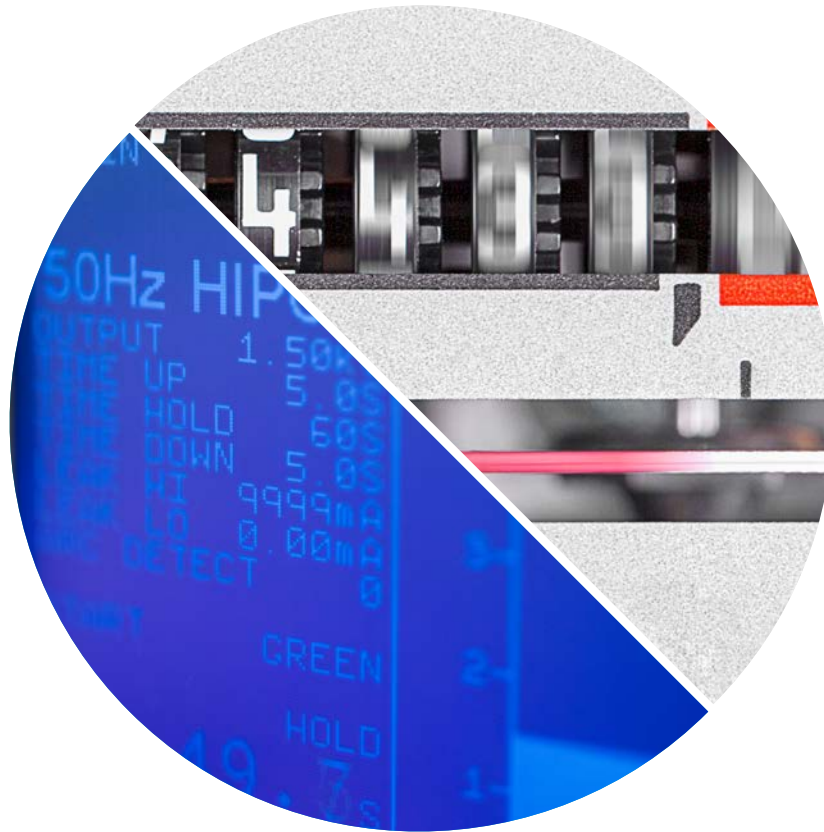
Clause 4.5: Implementation and Operation

In order to make sure that the EnMS is successfully implemented and maintained, ISO 50001 states that all workers who are involved with the EnMS must be competent and properly trained according to their role. Your organization should carefully review the capabilities of the employees who will be working with the energy management system and determine if training or additional hiring is required. There must also be a system in place that supports the communication of information about the system to impacted workers as well a way for workers to provide feedback, concerns or suggestions.

Documenting the EnMS is also very important. There must be a clear description of the system, its scope, boundaries, energy policy and objectives. The same must be done for all of the associated action plans, documents and records. To ensure that it continues to be relevant your organization will also have to develop a process for maintenance, regular review and updating of the documentation.

The establishment and maintenance of operational procedures and controls, as required by the standard, helps organizations ensure they're controlling significant energy use and adhering to the policies, objectives and targets established in the energy plan. The design requirement in the Implementation and Operation section of the standard requires that all new, modified or renovated facilities, equipment, systems and processes that an organization builds or implements that have a significant impact on energy use must undergo an energy performance evaluation and that the resulting findings be incorporated into the new project.

It is also a requirement that when purchasing or procuring energy services or products that consume energy, organizations have criteria for measuring energy use, consumption and efficiency over the product/service's lifetime and that potential suppliers are made aware that purchasing decisions will be partly determined by these criteria.
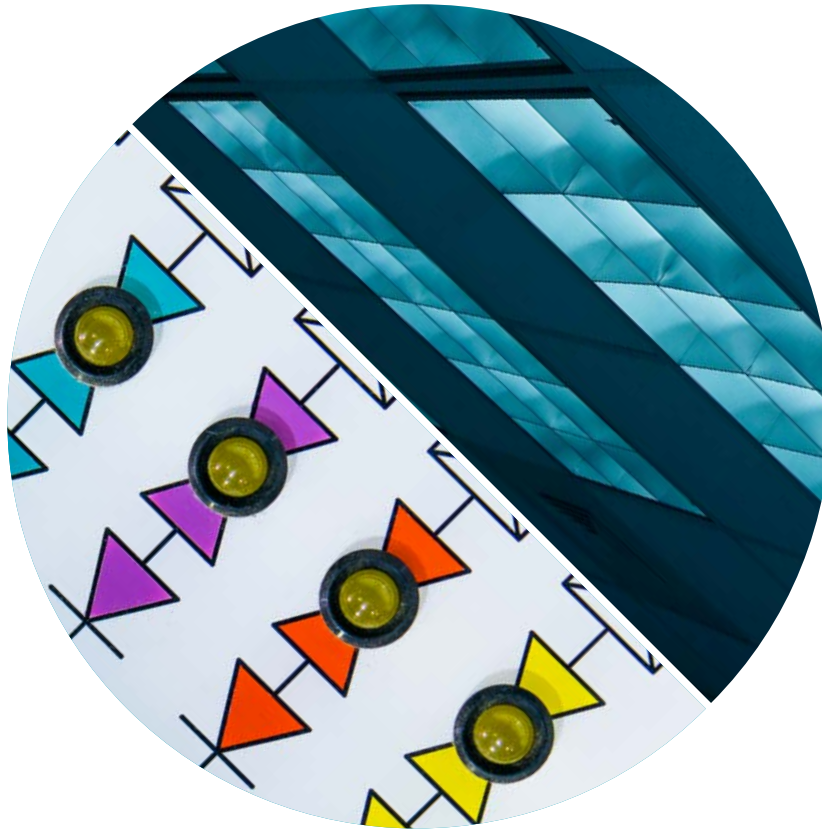
Clause 4.6: Checking

This is all about measuring and evaluating your EnMS to ensure that it's effective. You will need to consider what should be measured, how it will be measured and how and when the data will be analysed and reported on.

Internal audits will need to be carried out so that you can make sure that the EnMS is in line with ISO 50001 and is meeting the established objectives and targets. You will then have to address any nonconformities by taking corrective and preventative actions.

Clause 4.7: Management Review

According to a set schedule, the top management of your organization will have to review the EnMS. This is done so that it continues to be suitable, adequate and effective. Highlights include a review of the energy policy, the organization's energy performance, legal compliance and any changes that have occurred to laws and regulations set by government, industry or other bodies, the status of corrective and preventative actions as well as recommendations for improvement. Typically, the results of the Management Review will include things like changes to the energy policy, energy performance indicators and/or the EnMS's objectives and targets.

Top tips on making **ISO 50001** effective for you

Every year we help tens of thousands of clients. Here are their top tips.

Top management commitment is key to making this a success.

"Executive support was vital, enabling the financial backing to pay for training costs of implementation."

Tony Waters, Managing Director, Solo Cup Europe

Keep staff informed of what's going on, create a team or assign a champion, as this will increase motivation. This could include a well communicated plan of activities and timescales.

"Energy savings require the commitment of… the whole workforce. There ideally needs to be a champion in the organization who can drive change and savings."

Brian Haslam, Quality, Environmental and Energy Manager, Camfill Farr

Think about how different departments work together to avoid silos. Make sure the organization works as a team for the benefit of customers and the organization.

"Everyone involved in energy should attend; from energy purchase, utility operation and generation to plant operations and maintenance."

Mike Thornhill, Managing Director, Thornhill Heat Exchangers

Review systems, policies, procedures and processes you have in place – you may already do much of what's in the standard and make it work for your business.

"A lot of people were doing the right things anyway, but the training gave them greater insight and information."

Tony Waters, Managing Director, Solo Cup Europe

Speak to your customers and suppliers. They may be able to suggest improvements and give feedback on your service.

"It is really important to make our energy saving results meaningful to our customers."

Sophie Hutchinson, Sustainability Manager, Morgan Lovell

Train your staff to carry out internal audits. This can help with their understanding, but it could also provide valuable feedback on potential problems or opportunities for improvement.

"I can carry out external audits in quality and food safety at our suppliers' premises, and that drives great improvements to our business as a result."
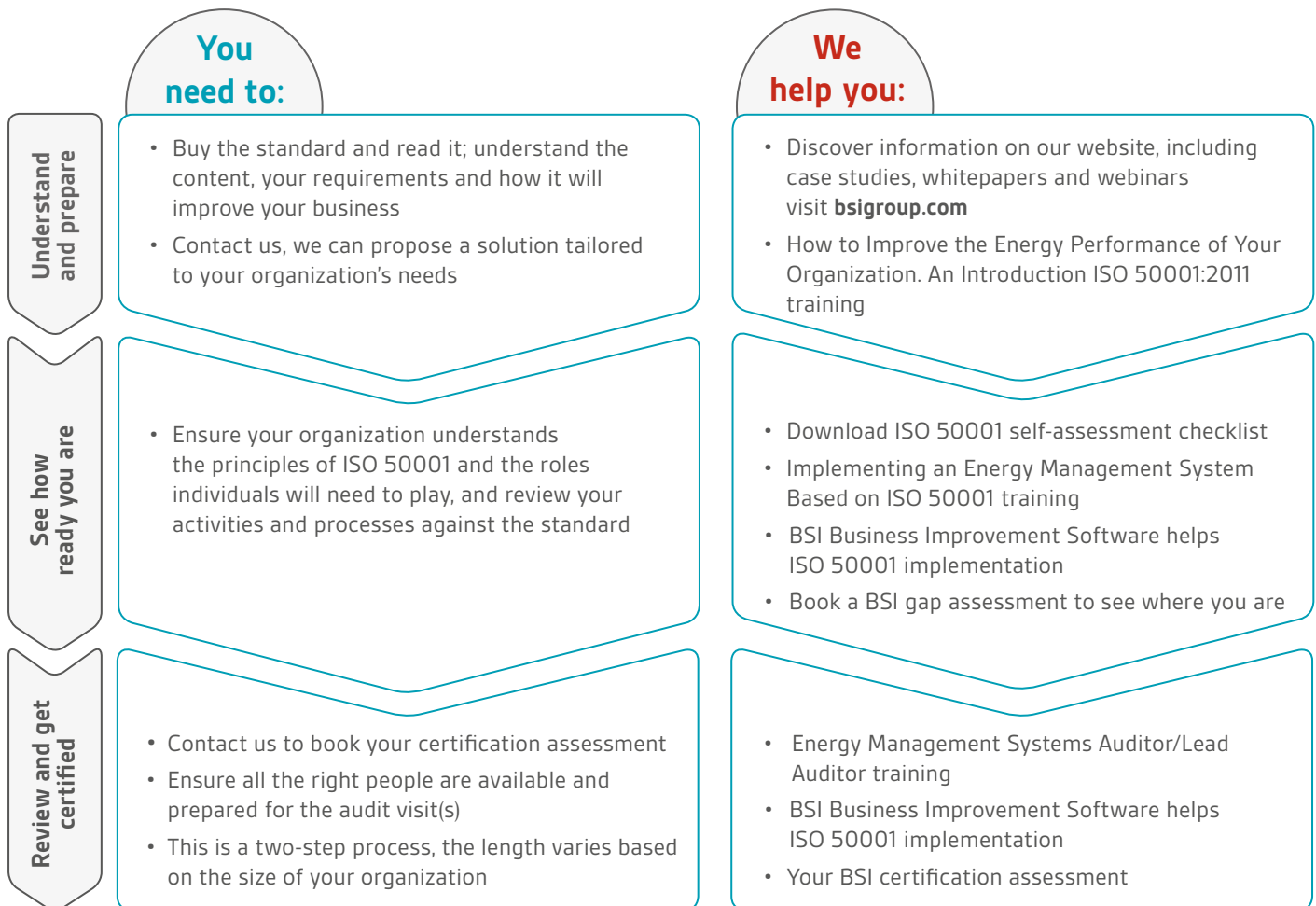
Denise Graham, Technical Manager, Tata Global Beverages

And finally, when you gain certification celebrate your achievement and use the **BSI Assurance Mark** on your literature, website and promotional material.

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Your **ISO 50001** Journey

Whether you're new to energy management or looking to enhance your current system, we have the right resources and training courses to help you understand and implement ISO 50001. But our support doesn't stop there. We can help make sure your system delivers the best for your business and the environment.

You need to:

Understand and prepare

- Buy the standard and read it; understand the content, your requirements and how it will improve your business
- Contact us, we can propose a solution tailored to your organization's needs

See how ready you are

- Ensure your organization understands the principles of ISO 50001 and the roles individuals will need to play, and review your activities and processes against the standard

Review and get certified

- Contact us to book your certification assessment
- Ensure all the right people are available and prepared for the audit visit(s)
- This is a two-step process, the length varies based on the size of your organization

We help you:

- Discover information on our website, including case studies, whitepapers and webinars visit **bsigroup.com**
- How to Improve the Energy Performance of Your Organization. An Introduction ISO 50001:2011 training

- Download ISO 50001 self-assessment checklist
- Implementing an Energy Management System Based on ISO 50001 training
- BSI Business Improvement Software helps ISO 50001 implementation
- Book a BSI gap assessment to see where you are

- Energy Management Systems Auditor/Lead Auditor training
- BSI Business Improvement Software helps ISO 50001 implementation
- Your BSI certification assessment

Continually improve and make excellence a habit

Your journey doesn't stop with certification. We can help you to fine-tune your organization so it performs at its best.

- Celebrate and promote your success – download and use the BSI Assurance Mark to show you are certified.
- Your BSI Excellerator Report will benchmark the performance of your business and highlight where you can improve
- Energy Management Systems Auditor/Lead Auditor training - make your business lean and boost customer satisfaction.

- BSI Business Improvement Software will help you to manage systems and drive performance
- Your BSI Client Manager will visit you regularly to make sure you remain compliant and support your continual improvement.

BSI Training Academy

The BSI Training Academy is a world leader in helping clients develop the knowledge and skills they need to embed excellence in their organizations. We offer a range of ISO 50001 training solutions that can be tailored to your needs. Our training courses are developed by experts in their fields, so when you train with us you'll benefit from their expertise.

Using the latest research, our accelerated learning approach is proven to fast-track learning and improve knowledge retention. Our experienced tutors can help you get to grips with the matters that concern you and your organization directly, whether delivered in-house or as part of an open course where other delegates can share their experience.

Courses that help you understand ISO 50001 include:

How to Improve the Energy Performance of Your Organization. An Introduction ISO 50001:2011

- One-day classroom-based training course

- Learn about the structure and key requirements of ISO 50001

- Essential for anyone involved in the planning, implementing, maintaining, supervising or auditing of an ISO 50001 EnMS

Implementing an Energy Management System Based on ISO 50001

- Two-day classroom-based training course

- Attendees learn about the standard's requirements, how to identify the resources needed for implementation, how to define, plan and implement an EnMS as well as the development of energy policies, processes, targets and measuring techniques

- Recommended for anyone involved in the planning, implementing, maintaining, supervising or auditing of an ISO 50001 EnMS

ISO 50001:2011 Energy Management System Internal Auditor training

- Two-day classroom-based training course

- Learn how to initiate an audit, prepare and conduct audit activities, compile and distribute audit reports and complete follow-up activities

- Ideal for anyone involved in auditing, maintaining or supervising an ISO 50001 EnMS

Energy Management Systems Lead Auditor training

- Five-day classroom-based training

- Gain the knowledge and skills required to undertake and lead a successful management system audit

- Recommended for anyone involved in auditing, maintaining or supervising an ISO 50001 EnMS

BSI Business Improvement Software

Accelerate implementation time and deliver continual improvements

The decision to implement a new management system standard is a huge opportunity to drive business improvement, but initiating, implementing, and maintaining this can also be a challenge. Ensuring you get the most from your investment is a key driver to your future success. BSI business improvement software provides a solution that can significantly reduce the cost and effort to an effective management system such as ISO 50001. It can be configured to the requirements of ISO 50001 and provide your organization with the tools necessary to manage essential elements of ISO 50001 across your organization. The start of your ISO 50001 journey is an ideal time to implement BSI business improvement software to support your energy management system.

It can help you to:

- Accelerate implementation time by up to 50%

- Manage your document control effectively

- Provide company-wide visibility on implementation of the standard so you know exactly where you are at any one time

- You can easily and accurately input actions related to audits, incidents/events, risk and performance

- Through its customizable dashboards and reporting tools it gives you early insight into trends that help you make business decisions early on and drive improvement

The savings are the costs you avoid because you could not see what was happening at the facility level.

Why BSI?

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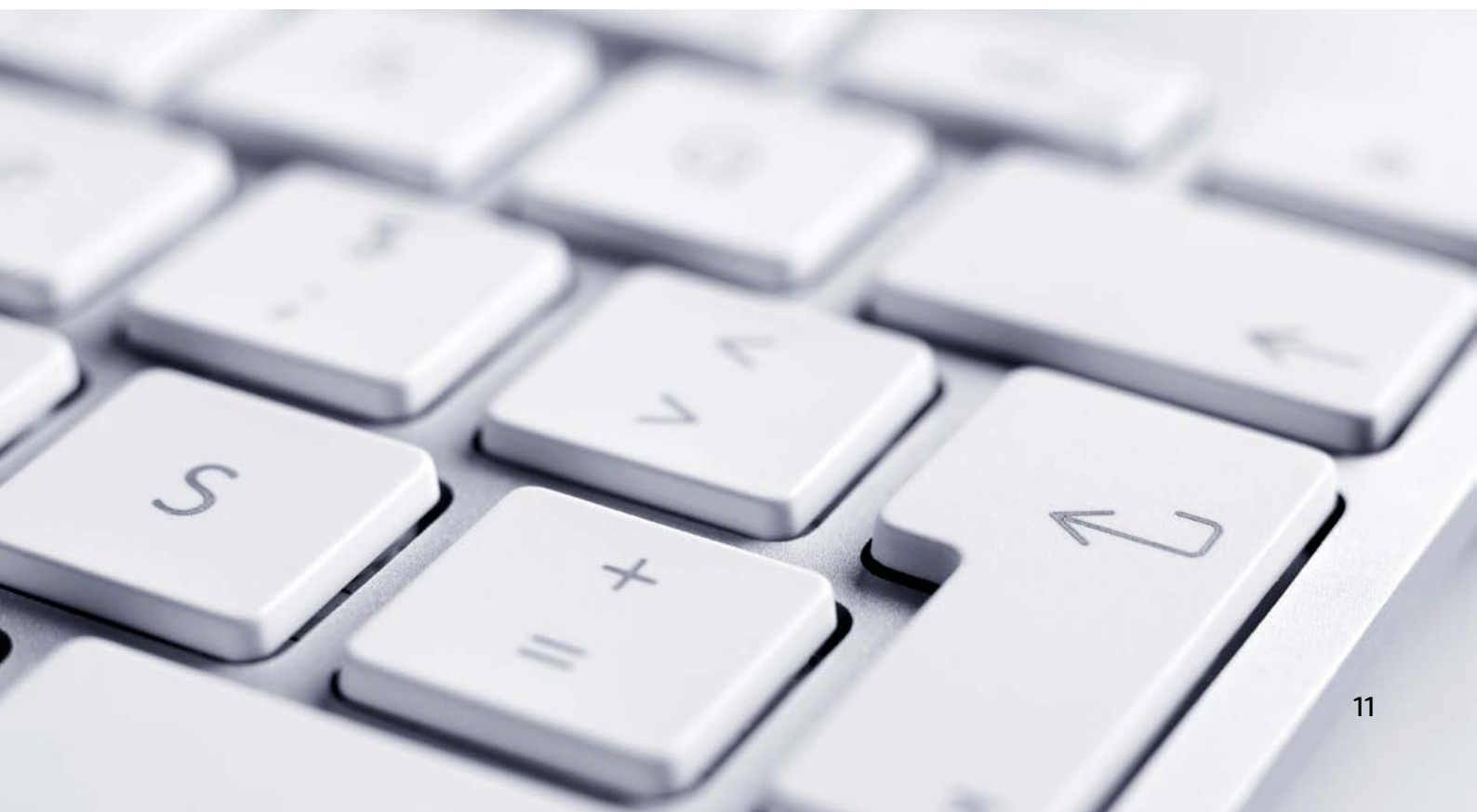
At BSI we create excellence by driving the success of our clients through standards. We help organizations to embed resilience, helping them to grow sustainably, adapt to change and prosper for the long term. We make excellence a habit.

For over a century our experts have been challenging mediocrity and complacency to help embed excellence into the way people and products work. With 80,000 clients in 182 countries, BSI is an organization whose standards inspire excellence across the globe. That's why we're best placed to help you understand, implement and benefit from the standard.

"BSI is our supplier of choice. We have a good relationship with our contacts there, who keep in touch regularly so that we're informed about new standards, changes to existing standards or to legislation, and other developments. We're not interested in doing it on the cheap — it's about the all-round package, and you get what you pay for with BSI."

Denise Graham, Technical Manager, Tata Global Beverages

Our products and services

We provide a unique combination of complementary products and services, managed through our three business streams; Knowledge, Assurance and Compliance.

Knowledge

The core of our business centres on the knowledge that we create and impart to our clients. In the standards arena we continue to build our reputation as an expert body, bringing together experts from industry to shape standards at local, regional and international levels. In fact, BSI originally created eight of the world's top 10 management system standards.

Assurance

Independent assessment of the conformity of a process or product to a particular standard ensures that our clients perform to a high level of excellence. We train our clients in world-class implementation and auditing techniques to ensure they maximize the benefits of standards.

Compliance

To experience real, long-term benefits, our clients need to ensure ongoing compliance to a regulation, market need or standard so that it becomes an embedded habit. We provide consultancy services and differentiated management tools to facilitate this process.

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Find out more
Call: **+27 12 004 0273**
Visit: **bsigroup**.com/en-za