

ISO 50001:2011 EnMS

PCRA Foray in ISO-50001:2011EnMS

Towards the journey of achieving energy security and sustainable industrial & technological growth for country, we intend to establish a culture of conservation of energy resources and environment. Through the adoption of ISO-50001 (EnMS) certification your organization will be able to establish a well-structured approach of ideal utilization of scarce energy resources in maintaining industrial and commercial activities thus by improving your organization's productivity & profitability and bearing corporate responsibilities.

What is ISO 50001:2011EnMS?

ISO 50001 replaces BS EN 16001 and is the International Standard for Energy Management System providing a robust framework for optimising energy efficiency in public and private sector organisations. Certification to this standard demonstrates an organisation's commitment to continual improvement in energy management, allowing them to lead by example within their respective industries and ensures that related legislative and regulatory requirements are met.

What is an energy management system?

An energy management system is a network of inter-connected processes that enables an organization to use data and information to maintain and improve energy performance, while improving operational efficiencies, decreasing energy intensity, and reducing environmental impacts.

Is ISO 50001:2011EnMS right for Industry?

It's right if you and your organisation want to take control of the way you use energy and manage the related costs more effectively. It is particularly beneficial for organisations with significant energy expenditure. If you already hold certification to ISO 14001, the 'basic framework' is already there and the benefits of ISO 50001 are within reach.

Helps you with: energy policy, carbon reduction, energy security, cost control, legal compliance, culture improvement, corporate responsibility, reputation, resource management

What are the benefits of System compliance?

Reduced operating cost. Significant financial savings can be achieved through increased energy efficiency (Forecast: energy prices to rise by at least 20% by 2020).

Improved energy efficiency. ISO 50001:2011EnMS is the most robust energy management system, enabling you to make continual improvements to become as efficient as possible.

Reduced carbon foot print. It reduces your carbon footprints and people will respond positively to your organisation.

Legal compliance. Makes understand how statutory and regulatory requirements impact your organisation and stay on the right side of the law.

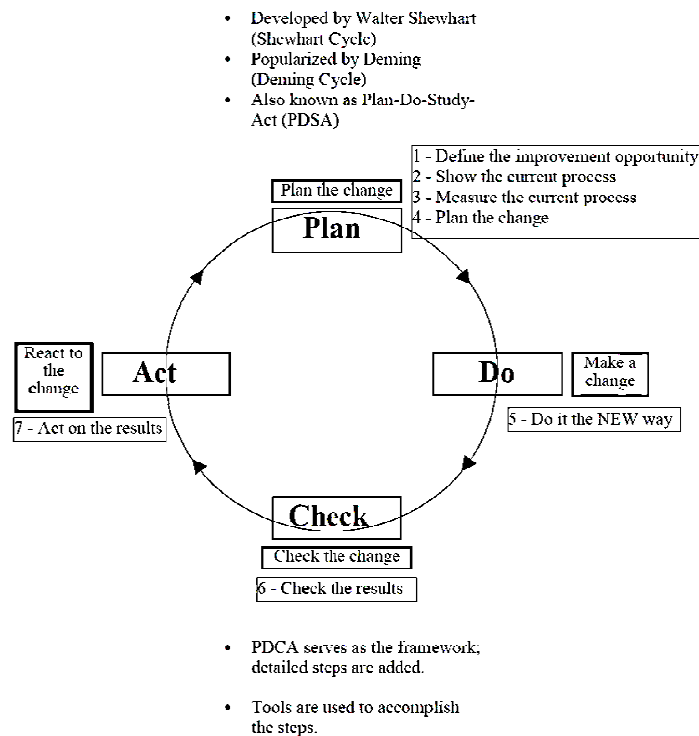
Proven business credentials. Independent verification against recognised standards speaks volumes and enhances your brand.

What factors will influence the use of ISO 50001:2011EnMS?

ISO 50001 adoptions is expected to be driven by factors such as the growth of corporate sustainability programs and the spread of energy management standards along the manufacturing supply chain. Companies may also find the energy and carbon reductions achievable through adherence to the ISO 50001 standard.

The Guiding Principal of ISO-50001:2011EnMS

THE PLAN-DO-CHECK-ACT (PDCA) CYCLE



PDCA is based on the “Shewhart cycle,” and was made popular by Dr. W. Edwards Deming, considered by many to be the father of modern quality control. During his lectures in Japan in the early 1950s, Deming noted that the Japanese participants shortened the cycle’s steps to the now traditional plan, do, check and act. It is interesting to note that Deming preferred plan, do, study, act because the translation of "study" from Japanese to English has connotations closer to Shewhart's intent than does "check."

This model has been around for 60 years and it is relevant in today’s public health world, providing a defined and well tested process to achieve lasting improvement to the problems and challenges public health is now facing.

Plan: The purpose of this phase is to investigate the current situation, fully understand the nature of any problem to be solved, and to develop potential solutions to the problem that will be tested.

1. Identify and prioritize quality improvement opportunities. Usually a team will find that there are several problems, or quality improvement opportunities, that arise when programs or processes are investigated. A prioritization matrix⁸ may help in determining which one to select. Once the quality improvement opportunity has been decided, articulate a problem statement. Revisit and, as appropriate, revise the problem statement as you move through the planning process.
2. Develop an AIM statement that answers the following questions:
 - a. What are you seeking to accomplish?
 - b. Who is the target population?
 - c. What is the specific, numeric measure(s) you are seeking to achieve?
 - d. The measurable improvement objective is a key component of the entire quality improvement process. It's critical to quantify the improvement you are seeking to achieve. Moreover, the entire aim statement also will need to be revisited and refined as you move through the planning phase.
3. Describe the current process surrounding the problem in order to understand the process and identify areas for improvements. Flow charts and value stream mapping are two examples of methods to accomplish this.
4. Collect data on the current process. Baseline data that describe the current state are critical to further understanding the process and establishing a foundation for measuring improvements. The data may address, for example, time, people, space, cost, number of steps, adverse events, and customer satisfaction. A host of tools are available to collect and interpret data on the process, such as Pareto charts, histograms, run charts, scatter plots and control charts. The data collected must be aligned with the measures listed in the aim statement.
5. Identify all possible causes of the problem and determine the root cause. While numerous causes will emerge when examining the quality improvement opportunity, it is critical to delve in and carefully identify the underlying, or root, cause of the problem, in order to ensure that an improvement or intervention with the greatest chance of success is selected. Brainstorming is a useful way to identify possible causes and a cause and effect/fishbone diagram and the 5 Whys are useful for determining the actual root cause.
6. Identify potential improvements to address the root cause, and agree on which one to test. Once the improvement has been determined, carefully consider any unintended consequences that may emerge as a result of the implementing improvement. This step provides an opportunity to alter the improvement and/or develop countermeasures as needed to address any potential unintended consequences. Revisiting the aim statement and revising the measurable improvement objectives are important steps at this point.
7. Develop an improvement theory. An improvement theory¹⁰ is a statement that articulates the effect that you expect the improvement to have on the problem. Writing an improvement theory crystallizes what you expect to achieve as a result of your intervention, and documents the connection between the improvement you plan to test and the measurable improvement objective.

8. Develop an action plan indicating what needs to be done, who is responsible, and when it should be completed. The details of this plan should include all aspects of the method to test the improvements - what data will be collected, how frequently data are collected, who collects the data, how they are documented, the timeline, and how results will be analysed.

Do: The purpose of this phase is to implement the action plan.

1. Implement the improvement.
2. Collect and document the data.
3. Document problems, unexpected observations, lessons learned and knowledge gained.

Check/Study: This phase involves analysing the effect of the intervention. Compare the new data to the baseline data to determine whether an improvement was achieved, and whether the measures in the aim statement were met. Pareto charts, histograms, run charts, scatter plots, control charts and radar charts are all tools that can assist with this analysis.

1. Reflect on the analysis, and consider any additional information that emerged as well. Compare the results of your test against the measurable objective.
2. Document lessons learned, knowledge gained, and any surprising results that emerged.

Act: This phase marks the culmination of the planning, testing, and analysis regarding whether the desired improvement was achieved as articulated in the aim statement, and the purpose is to act upon what has been learned. Options include:

1. Adopt: Standardize the improvement if the measurable objective in the aim statement has been met. This involves establishing a mechanism for those performing the new process to measure and monitor benchmarks on a regular basis to ensure that improvements are maintained. Run charts or control charts are two examples of tools to monitor performance.
2. Adapt: The team may decide to repeat the test, gather different data, revise the intervention, or otherwise adjust the test methodology. This might occur, for example, if sufficient data weren't gathered, circumstances have changed (e.g., staffing, resources, policy, environment, etc.), or if the test results fell somewhat short of the measurable improvement goal. In this case, adapt the action plan as needed and repeat the "Do" phase.
3. Abandon: If the changes made to the process did not result in an improvement, consider lessons learned from the initial test, and return to the "Plan" phase. At this point the team might revisit potential solutions that were not initially selected, or delve back into a root cause analysis to see if additional underlying causes can be uncovered, or even reconsider the aim statement to see if it's realistic. Whatever the starting point, the team will then need to engage in the Plan cycle to develop a new action plan, and move through the remaining phases.

WE ASSURE

- Dedicated and complete commitment to the cause of Energy Efficiency related endeavours.
- Developing a sustainable & continuous Energy Management Culture throughout battery limit of implementation.
- Complete and absolute confidentiality of all data/information gathered during the study.
- Needed guidance and support till ISO-50001:2011 EnMS Certification.

Objective of the Consultancy Offer

To provide consultancy for getting certified as ISO 50001:2011(Energy Management System, termed as EnMS just to be different from EMS which is Environment Management System, i.e. ISO 14000) which includes establishment, documentation, and implementation in accordance with the requirements of that international standard till getting certified.

1. Scope of Work:

To train and guide total staff for getting certified as ISO 50001:2011(Energy Management System) on establishment, documentation, implementation, maintenance and improvement in EnMS in accordance with the requirements of this international standard till getting certified through providing training at their plant at different stages; helping, guiding and then checking their documentation; guiding them on implementation, maintenance and improvement in the system; training them on Internal Audits and management review and on preparing quality policy, objectives and targets etc. In other words all training and guidance is provided till the plant is certified as ISO 50001:2011.

Some major areas of scope are as follows;

- ❑ Preparation of Energy Policy
- ❑ Identification of Significant Energy Users (SEU)
- ❑ Fixing of Energy Performance Indicators (EnPIs)
- ❑ Fixing of Base line for the EnPI's
- ❑ Preparation of Procedure Manual
- ❑ Training of the Employees on ISO- 50001
- ❑ Documentation Related to ISO-50001:2011 EnMS
- ❑ Internal Audit: Training & carrying out in out presence
- ❑ Management Review Meeting: Training & carrying out in out presence
- ❑ Helping till Certification

2. FACULTY:

PCRA has been working in the field of Energy efficiency / Petroleum Conservation from 1978. With the onset of activities for implementation of ISO-50001 (EnMS), PCRA has equipped itself to provide consultancy to consumers. In PCRA we have Two numbers of Accredited Energy Auditors, Thirty three numbers of certified Energy Auditors and **Twenty numbers of Lead Auditors in ISO-50001:2011 EnMS**. A number of our certified energy auditors are likely to be included in the accredited energy auditors list as and when it is published in official gazette of Govt. of India. We draw out the best of faculties to undertake and fulfil the requirement of providing consultancy for implementation of aforesaid ISO certification

3. MAKING VISITS TO THE PLANT:

As and when required, visits are made to the plant by team of experts as per the need for imparting training and ensuring proper establishment, documentation, implementation, maintenance and improvement in EnMS.

4. METHODOLOGY :

The assignments are executed through visiting the plant for training and other purposes as mentioned above; by checking the documentation and guiding your officials, sitting from our office at New Delhi/Mumbai with effective communication through e-mails/ phones/courier etc.

Power Point presentations are made at your conference hall for imparting training and other purposes using your complete infrastructure. We bring the soft copy of presentation in laptops and pen drives. Each and every employee of organization (including contract workers) is covered for training. There will be three categories of training programme as under:

- (a) **Half day introductory programme (Type 'A')**:- For Top level officers who are involved in decision taking.
- (b) **One day introductory programme (Type 'B')**:- For managerial level officers and people connected with significant energy use.
- (c) **2 Days' Training Programme (Type 'C')**:- This is for Internal Auditors/Energy Management Team/MR/Asstt MR. During training program on each day, there are four sessions of 1.5 hours each. This includes quizzes/group exercises in each session. All the training programs will be highly interactive. Mock audits are performed during training on Internal Audit.
- (d) **2 Hours awareness programme (Type 'D')**:- For lower level staff and contract workers.

5. WHY YOU SHOULD GET THE CONSULTANCY FROM US?

- PCRA has been working in the field of Energy efficiency / Petroleum Conservation from 1978. PCRA has been the nodal agency in the country for many energy efficiency programs across far and wide corner of the country penetrating to almost every sector of energy consumers viz. Industrial, Transport, Domestic, Agriculture etc. With the onset of activities for implementation of ISO-50001(EnMS), PCRA is adequately equipped to provide consultancy to clients for implementation of ISO-50001. We have several Certified Lead Auditors in ISO 50001 EnMS and a big league of certified Energy Auditors. A number of our certified energy auditors have been included in the accredited energy auditors list of BEE. We are able to provide the best of the faculty to undertake and fulfill the requirement of providing consultancy for implementation of aforesaid ISO certification.
- PCRA has a qualified and well experienced pool of manpower drawn from oil sector PSUs and to undertake such jobs. Our manpower has to its credit a number of successful implementation of energy audits and creation of energy cell / energy management system across the industries.

- In the light of increased energy demand with fossil fuels remaining as the major energy source, energy related CO₂ emissions would rise resulting in irreversible damage to the Global environment. Under the circumstances, it is imperative for every industry, big, medium or small sized, to seriously work towards energy conservation through energy efficiency improvement programs which alone offer the solution to the problem of global warming.
- Petroleum Conservation Research Association (PCRA), under the aegis of MoP&NG, since its inception in the year 1978, has been actively engaged in formulating strategies to promote energy efficiency and conservation of petroleum products for sustainable development, energy security and environment protection.
- During the last 37 years, PCRA conducted more than 15000 energy audits in small, medium and large industries and has been pivotal in establishment of energy cell / EnMS in industries with a view to harness energy efficiency on a sustained basis. Already have experience of consultancy in getting ISO 50001EnMS certificate for 12 plant and 88 locations in pipeline.
- We have successfully completed the implementation of Energy Management System (EnMS) leading to certification to many Big & Small industries in various sectors.