



One Day Course on “Energy Management Based On MS ISO 50001:2011” on 7 May 2016.

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Energy is both easily controlled and controlling factor of production. As energy demand grows, the dependency on foreign resources would also increase. Naturally, price of energy is of main concern and appropriate management of energy is thus advantageous. The march towards international energy management systems with the aim to enhance efficiency and productivity would ultimately results in carbon emission reduction.

Awareness seminars to promote MS ISO 50001 have been launched since its commencement in September 2011. In line with ISO 50001, the purpose of this standard is to provide technical and management strategies to improve energy efficiency. It provides a framework to integrate energy efficiency into management practices.

This standard will introduce transparency and help in communication on the management of energy resources, assist to benchmark, measure document and report energy performance improvements and aid entities to make better use of their existing energy consuming equipment, assist in evaluating and prioritizing new energy efficiency technologies, promote energy management best practices and reinforce good behavior, assist practices for greenhouse gas reduction projects and give a framework to promote energy efficiency in supply chain.

Within MS ISO 50001, energy management system requirements comprise of general requirements, management responsibility, energy policy, energy planning, implementation and operation, checking performance and management review.

This standard also exists for the following objectives:

- To establish systems and processes by using systematic approach needed to improve energy performance, including energy efficiency, which is applicable to all types of organizations and depends on commitment especially from top management.
- To achieve policy commitments, take action to improve energy performance and demonstrate conformity to the requirements of Standard
- Encourages continual improvement efforts

The speakers also highlighted the terms “energy efficiency” and “energy saving” which are often used interchangeably by the public. Basically, energy efficiency is the ratio of energy output over energy input. For practical energy-efficient system, the energy output is almost equal to the energy input. Given two systems, the system with higher energy efficiency requires less input energy to perform the same function. On the other hand, energy saving is an intentional effort to reduce the energy demand.

An energy management system should address issues such as energy supply, energy uses and consumption, measurement, documentation and reporting and procurement and design practices for energy-using equipment, systems and processes. This standard does not itself state specific performance criteria with respect to energy. Definition of energy, energy efficiency and energy performance are established in the standard.

In consistent with the purposes of this standard, it is a general requirement that the organization shall establish, document, implement and maintain an energy management system in accordance with the requirement of the international standard. It should also define and document the scope and boundaries of energy management system. Next, it should also determine and document how it will meet the requirement of this standard in order to achieve continual improvement of its energy efficiency.

Top management on the other hand should establish, implement and maintain energy policy. Resources needed such as financial and manpower should be provided and importance of energy management should be communicated. It should also approve the formation of an energy management team as managing energy could never be done by an individual only. Energy performance indicator used should be ensured to be appropriate. Performance targets and objectives must be established so that quantifiable baseline is there. Measurement and report of results must be available and management review should be conducted within appropriate time interval.

Another key factor in energy management system is energy planning. Energy planning should cover legal requirement, energy review, energy baseline, energy performance indicator, objectives, targets and action plans. Implementation and operation wise, competence training and awareness should be in place. Communication is vital and documentation is a good aid in terms of contents and control. Design and procurement of energy services, products, equipment and energy are all covered under this section on energy planning. This is in fact a continuous daily activity and this is where the energy savings and energy performance improvements are made. Competency of the particular staff who is related to significant energy uses is of particular importance. Organization should identify suitable training needs and provide the training. Awareness of the benefits of energy efficiency is of paramount importance as well. In terms of performance checking, internal audit of the energy management system is one of the key measures.

To conclude, it would be ideal to have an energy efficient industry in place. Often, the technological barrier can be overcome but the real challenge lies with the people and organizational factors. With appropriate Plan-Do-Check-Act measures in place, this ideality would become a reality sooner than we thought.