DEVELOPING EFFECTIVE ENERGY PERFORMANCE INDICATORS
The primary goal of businesses is to balance profit-making objectives with the interests of parties affected by it. The amount of profit that businesses can generate depends on how well they control their costs. There are many costs with which businesses deal with, but energy costs remain among the most significant for many of them. The industrial sector is one of the largest energy consumers. Companies are constantly seeking innovative ways on how to spend the energy more efficiently. The standard that is widely being used to reduce energy costs is ISO 50001 or the Energy Management System (EnMS). ISO 50001 was developed by the International Organization for Standardization (ISO) with the aims at improving organization's energy performance.

The standard has offered cost-cutting opportunities for many companies. Investments in energy management systems have proven to enhance the energy performance by lowering costs. According to ISO 50001, "energy performance is the measurable result related to energy efficiency, energy use, and energy consumption." The energy management system performance can be measured using Key Performance Indicators (EnPIs). According to ISO 50001, "energy performance indicator is a quantitative value or measure of energy performance, as defined by the organization." It is important to set appropriate EnPIs for monitoring and measuring the energy performance, because they show how well the system is functioning.

The energy management implementation sometimes does not result in sustained savings. This should not discourage organizations from undertaking new energy initiatives, but it should make them analyze the factors that prevent them from achieving consistent energy efficiency results. One way to do that is through energy performance indicators which can be a parameter, ratio or a complex model. They will support the business to achieve its energy goals by constantly monitoring the performance. Some examples of EnPIs include energy consumption per time, energy consumption per unit of production, and multi-variable models. The EnMS requirements can be measured against business's energy policy and objectives.

To develop effective energy performance indicators, businesses should first define the energy management goals, which can be converted to measurable EnPIs. In addition, the scope of the EnPIs should be selected to determine the assessment level, namely the system, process or facility. Following the scope selection, it is important to develop measurement criteria based on dependent variables such as energy use of interest, and independent variables such as consumption drivers. EnMS team can review the past and present energy use, and as such determine the variables affecting the energy consumption, as well as the time frame for analysis. Finally, data should be collected, analyzed and the results should be compared. It is important that businesses come up with EnPIs that would track the performance over time. These EnPIs can be updated when there is change in business activities or baseline change.
Energy performance indicators should be relevant to all levels of the company, and should outline the EnPI scope to enhance the energy performance. The indicator categorization makes the comparison process easier. Operational level indicators are used to measure and monitor the energy consumption of certain operations over a short time. Site level indicators are used to measure and monitor energy consumption of certain sites on a quarterly or yearly basis. Corporate level indicators are company-wide indicators, which can derive from site level indicators. Another level of indicators are the ones linked to Energy Management System implementation, which measure and monitor the achievements of the business processes or management approaches.

Often it is more challenging to maintain the system compared to implementing it. Data-driven approach has demonstrated to be more appropriate in evaluating and maintaining the energy performance. It is important that organizations develop Energy Performance Indicators that provide continual improvements of the energy management system. Appropriate indicators help organizations in tracking the energy performance, developing saving plans, identifying and prioritizing issues, and communicating results.

PECB (Professional Evaluation and Certification Board) is a certification body for persons on wide range of international standards. It offers ISO 50001 training and certification services for professionals wanting to gain a comprehensive knowledge in energy management, its principles, core subjects and issues. This training suits energy professionals, project managers or consultants wanting to prepare and to support an ISO 50001 and Energy Management Trainings offered by PECB:

- Certified ISO 50001 Lead Implementer (5 days)
- Certified ISO 50001 Lead Auditor (5 days)
- Certified ISO 50001 Foundation (2 days)
- ISO 50001 Introduction (1 day)

ISO 50001 Lead Auditor, ISO 50001 Lead Implementer and ISO 50001 Master are certification schemes accredited by ANSI ISO/IEC 17024.

Lorika Bina is the Transport, Telecommunications and Energy (TTE) Product Manager at PECB. She is in charge of developing and maintaining training courses related to TTE. If you have any questions, please do not hesitate to contact her at: tte@pecb.org.

For further information, please visit http://pecb.com/site/renderPage?param=139