

GOOD PRACTICES IN SME

Energy optimization systems for enterprises



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The following document was developed using European Union financing as part of the “Technical support for the promotion of energy audits and energy efficiency investments in small and medium-sized enterprises in Poland”. The opinions presented in this document should not be treated as the official stance of the European Union.

The project was financed by the European Union as part of Structural Reform Support Programme (SRSP) and realized by the Polish National Energy Conservation Agency (KAPE SA) in cooperation with the European Commission on behalf of the Ministry of Climate and Environment.

Energy management

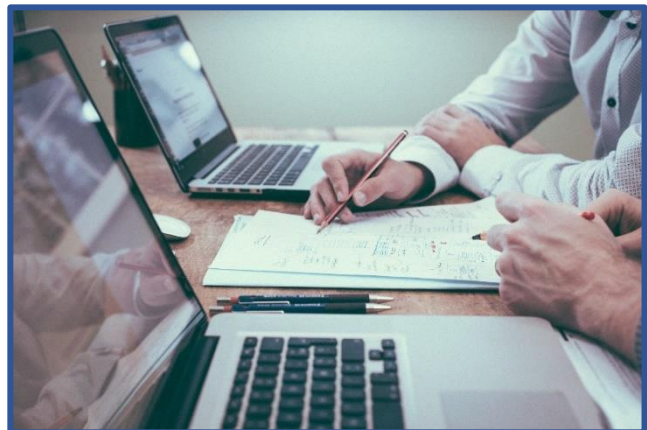
Managing energy plays a key part in improving the energy efficiency of a company. It enables the skilful management of resources to decrease electricity and heat demand and as a result increase savings. The first step to improve energy efficiency is an energy audit identifying the sources of potential energy savings.

Energy audit

An energy audit is a comprehensive investigation including an inventory of the company, documentation of the installations of areas of energy consumption, its analysis and presenting technical, organizational, and economic methods of rationalizing or optimizing energy consumption. The audit consists of three stages: description of the current state, engineering and economic calculations and analysis, and proposing actions and recommendations for improving energy efficiency. An energy audit involves both singular appliances and installations as well as technological and production process and transport within the company. The audit describes the technical condition of the appliances, installations and process and the methods of improving their energy efficiency along with the associated cost of the proposed solutions.

The scope of an audit includes:

- Media invoices and fees,
- Organization of work,
- Building and lighting,
- Hot water installation,
- Central heating installation,
- Heat production installation,
- Compressed air installation,
- Ventilation and air-conditioning installation,
- Pump installations,
- Electric motors,
- Transport,
- Using heat recovery installations,
- Using renewable energy sources,
- Using non-conventional energy and cooling sources.



A energy efficiency audit is an investigation, which includes an analysis of the energy consumption, describes the technical condition of a building, technical appliance or installation, and contains a list of actions which could improve its energy efficiency along with evaluating their cost-effectiveness and potential energy savings. Energy efficiency audits are often conducted to receive white performance certificates.

The main difference between an energy audit and an energy efficiency audit is their scope. An energy audit is meant to investigate the energy efficiency of the entire company, while an energy efficiency audit focuses on the potential energy savings resulting from one particular energy efficiency improving measure.

Energy efficiency standards

To improve its energy efficiency a company should follow appropriate norms which will allow the introduction of energy efficiency standards and organize energy management in a company. Using established standards effects improvements in productivity and the company's market competitiveness, as well as reducing human impact on the natural environment.

The most important standards defining energy efficiency implementation are:

PN-EN 16247 – Energy audits

This European standard defines the methods of conducting energy audits for all types of businesses and organizations as well as all types of energy and its uses excluding private residences. The standard consists of five elements which provide detailed descriptions of auditing buildings, industrial processes and transport. The first element defines the general requirements, methodology and results of energy audits. The second defines specific requirements for energy audits in buildings – it includes the requirements, methodology and results of energy audits in buildings and groups of buildings excluding private residences. The third element applies to the energy audit of processes – it includes guidelines on organizing and performing the audit, analysing data, and reporting and documenting the results of the energy audit. A process can include one or more production lines, office, laboratories, research centres, packaging and storage departments, and local transport. The fourth part describes the procedures pertaining to different types of transport – road, rail, sea or air, of different range and the type of the transported objects – goods or people. The standard allows for the optimization of the energy consumption of all transport hubs, as well as choosing the right means of transportation. Part five contains information on the competences of energy auditors. It can be used to describe the qualifications of auditors to ensure the correctness of energy audits.

PN-EN ISO 50001 – Energy management systems

The following norms defines the requirements of creating, implementing, maintenance and further development of an energy management system. It allows organizations and entities to improve their energy efficiency through optimized use of energy sources and energy related resources to decrease costs, limit consumption and decrease the negative impact on the environment. Implementing an energy management system can include e.g. using new energy efficient technologies, decreasing energy losses or improving existing processes to lower costs which improves the organization's/entity's market competitiveness.

PN-EN ISO 9001 – Quality management systems

This international quality management standard defines the requirements for organizations wanting to ensure the ability of constantly delivering quality goods or services meeting the customer's requirements while the optimizing the production process of goods and services.

PN-EN ISO 14001 – Environmental management standard

The following norm describes the requirements of environmental management systems meant to improve the environmental effects of the organization.

Implementing the ISO 14001 standard is a requirement for registering for EMAS (Eco-Management and Audit Scheme). EMAS is a European environmental certification system. EMAS is a distinction for companies who voluntarily exceed their legal obligations and focus on the environment in their actions.

PN-EN 16231 – Energy efficiency benchmarking methodology

The following European norm defines the requirements and presents recommendations on the methodology of benchmarking energy efficiency, which enables the establishment of correct data and energy consumption indicators for comparison between entities within the scope of the analysed areas and measures.

Source: KAPE



Ministry of Climate
and Environment



European Union



Krajowa Agencja
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