Proceedings of International Conference on Scientific Research in Natural and Social Sciences
Hosted online from Toronto, Canada.
Date: 5th October, 2023
ISSN: 2835-5326 **Website:** econferenceseries.com

USE OF GENERALIZED INDICATORS OF ELECTRICITY CONSUMPTION IN THE ENERGY MANAGEMENT SERVICE OF THE ENTERPRISE

Mirzohid Orifovich Gafurov,
Doctoral student of Bukhara engineering – technological institute

Farrukh Rasulovich Qayimov
Head of energy of Navoi region "Ishga Marhamat" monocenter

Annotation

In the energy management service of an enterprise, the use of generalized indicators of electricity consumption can be beneficial. These indicators provide a standardized measure of energy usage and can help identify trends, compare performance across different time periods or facilities, and benchmark against industry standards.

Keywords: energy efficiency, energy managment, specific energy consumption, generalized indicator of electrical efficiency.

Energy management refers to the process of monitoring, controlling, and conserving energy usage in various sectors, including residential, commercial, and industrial. It involves implementing strategies and technologies to optimize energy consumption, reduce waste, and improve efficiency.

The goals of energy management include reducing energy costs, minimizing environmental impact, and ensuring a reliable and sustainable energy supply. Effective energy management involves several key steps:

1. Energy Audit: Conducting an energy audit to assess current energy usage patterns, identify areas of inefficiency, and determine potential energy-saving opportunities.
2. Energy Monitoring: Installing energy monitoring systems to track and analyze energy consumption in real-time. This enables organizations to identify patterns, detect anomalies, and make data-driven decisions for optimizing energy usage.
3. Energy Efficiency Measures: Implementing energy-efficient technologies and practices such as LED lighting, insulation, HVAC system upgrades, and efficient appliances. These measures help reduce energy waste and lower overall consumption.

4. Renewable Energy Integration: Incorporating renewable energy sources like solar panels, wind turbines, or geothermal systems into the energy mix. This helps reduce reliance on fossil fuels and lowers greenhouse gas emissions.

5. Behavioral Changes: Encouraging energy-conscious behavior among employees or residents through awareness campaigns, training programs, and incentives. Simple actions like turning off lights when not in use or adjusting thermostat settings can significantly contribute to energy conservation.

6. Energy Management Systems (EMS): Utilizing advanced software platforms to automate and optimize energy management processes. EMS can collect and analyze data, control energy-consuming devices remotely, and provide actionable insights for further improvement.

7. Continuous Monitoring and Improvement: Regularly monitoring energy consumption and performance metrics to identify areas for improvement. This includes analyzing historical data, setting targets, and implementing corrective actions to ensure sustained energy efficiency.

By effectively managing energy usage, organizations can achieve significant cost savings, reduce their carbon footprint, and contribute to a more sustainable future.

If we consider the topic of efficient use of electricity in the enterprise in the dynamics, then the most effective method applied in practice is to create an energy management service. Energy management is a management system based on the implementation of actions to improve the efficiency of electricity use in the enterprise on the basis of data obtained from the systems of accounting and control of electricity consumption [16,18,32].

In fig 1. Do Check Act shows a block diagram of the organization of energy management services of the enterprise on the principle of the plan. The main tools of energy management are internal energy audit of the enterprise, energy monitoring, as well as corrective and preventive measures to save energy.

The urgent task is to centrally measure the integral values of various parameters required for the operational automatic measurement of energy sources, to compile energy consumption balances, to calculate the specific energy consumption per unit of production.

One of the key components of the monitoring system is the detection of power losses, which includes technical, informational, methodological, software and

organizational tools that allow to identify "foci" of excess power losses lower of control.

On June 1, 2015, the national standard UzDST ISO50001 came into force (Fig 2). In 2015-2019, it is planned to introduce this standard in 78 enterprises of the country. The use of the above principles allows the creation of highly efficient systems to control and manage the energy consumption of the enterprise. Effective management of energy consumption regimes in the online mode to create an effective energy management and energy monitoring service in the enterprise it is necessary to establish a monitoring system that provides the collection of analytical data for decision-making.

Developing a generalized indicator of an enterprise's electrical efficiency will allow you to create an effective monitoring system for energy consumption indicators and effectively manage energy consumption regimes.

The task of improving the electrical efficiency of the enterprise is reduced to the selection of indicators that characterize the efficiency of the power supply system and process equipment, which directly or indirectly affects the electrical efficiency of the enterprise and generalizes them in terms of their importance.

The most effective way to obtain a generalized measure of an enterprise's electrical efficiency is to normalize these efficiency indicators.

In order to increase the objectivity of the assessment of electrical efficiency of the enterprise, it is necessary to justify the order of sorting the values of generalized indicators and weight coefficients, taking into account the impact of these indicators on the overall electrical efficiency of the enterprise. [62,64]

In order to increase the efficiency of the use of generalized indicators in the study of electrical efficiency, it is necessary to develop a computer program to determine the generalized indicator of electrical efficiency of an industrial enterprise on the basis of automated calculation algorithms and enterprise electricity metering and accounting systems.

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