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ELECTRIC POWER EQUIPMENT AND ELECTRICAL ENERGY TECHNICAL OF DEVICES WASTE.

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Abstract

In recent years, the increasing cost of energy resources has necessitated significant transformations in energy accounting systems across various sectors, including industry, transportation, and housing. The demand for modern, high-precision metering devices to replace outdated and imprecise methods of measuring energy consumption has grown among consumers and suppliers alike. This shift underscores the importance of Automated Energy Control and Accounting Systems (AECAS), which streamline energy accounting and management processes. AECAS integrates advanced metering, data collection, and processing technologies to automate energy consumption monitoring, improve operational efficiency, and minimize human intervention. By employing telemetric and digital measurement devices, data transmission networks, and specialized software tools, AECAS provides reliable, accurate, and comprehensive energy data. This system enables consumers to optimize their energy usage, reduce costs, and enhance the efficiency of enterprises by automating calculations, detecting imbalances, preventing wastage, and supporting various tariff systems. This paper explores the multi-stage operation of AECAS, detailing its components, such as electricity meters, communication devices, and data processing units. It highlights the system's capability to collect,

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analyze, and present energy data in a format suitable for operational and managerial decision-making. Furthermore, it emphasizes the role of AECAS in addressing modern energy challenges by facilitating energy-saving measures and improving enterprise productivity

.In recent years, the high cost of energy resources has led to radical changes in the energy accounting system used in industry and other energy-consuming sectors (transportation and housing and communal services). Consumers began to understand the need to calculate electricity bills with suppliers of energy resources based on modern, high-precision metering devices, and not through some conditional standards, outdated and imprecise measuring devices. Enterprises are trying to adjust their "yesterday's" energy consumption to today's demand. Consumers understand that the first step in saving energy resources and reducing their financial costs is to start with the implementation of energy consumption accounting with the help of high-precision computing devices. Advanced trading of energy resources requires the use of reliable, accurate and concise automated system energy calculation, which minimizes human participation in the stages of data measurement, collection and processing, and is adapted to various tariff systems by both the supplier and the consumer of energy resources. requires the implementation of based systems. For this purpose, consumers and supply enterprises organize AECAS in their facilities.

AECAS is a technical system designed for automatic control and automatic accounting of energy consumption, consisting of control-measuring devices, communications (data transmission network), EHM and software (DT). and is a set of software tools.

AECAS allows: - information with electricity market subjects automation of exchange; - subjects and consumers of the electricity market automation of calculations with; -reliability of electricity accounting and to achieve an increase in speed; - Automatic control of electrical power systems ensuring control; - use

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of various management schemes of energy and power distribution among consumers; - to improve the work efficiency of the enterprise.

AECAS includes: - electricity and power meters (digital, interface or pulse output); - data collection and transmission device (multiplexers, telesummers, etc.); - communications (switched telephone channels, dedicated telephone channels, GSM, GPRS, radio channels, etc.); - communication equipment (modems, radio modems, multiplexers, etc.); - EHM with a special DT installed (for collecting and analyzing data from consumer meters and exchanging measurement data with other enterprises or electricity suppliers).

AECAS's DTi consists of the following systems: - database (MB) and meter reading management system; - automatic inquiry system with a meter on the line of communication and power consumers; - a system of displaying the parameters of electric meters in a graphic form; - data analysis system; - automated system of complex database.

The function of AECAS includes: - writing information about electricity; - archive records on counters and the system itself storage and control of automatic verification data; - setting concentrator, terminal and counter parameters; - remote reading, power supply disconnection/connection control and consumption level control; - automatic and non-automatic request; - prevention of wastage and theft of electricity on lines; - restriction of the operator's powers; - report on abnormal processes; - display the scheme of the distribution network; - taking into account the data of each phase and determining the cases of imbalance in each phase; - multiple tariffs; - automatic notification of various events; - control of consumption power level; - searching and extracting all information.

The first step is telemetric or digital primary disconnection devices (BO), which measure the electricity parameters of consumers (electricity, power

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consumption, etc.) at the metering points with average minimal intervals or continuously. 'A) (counters).

The second stage is special measuring systems or DT multi-function programmable converters with energy accounting, which collect, process and transfer the opening data from regionally distributed BOA throughout the day in a given cycle to higher levels. existing data collection and distribution facilities (MYTQ). The third stage is the collection of information from MYTQ (or MYTQ group), consideration of this information by points and their groups, i.e. by enterprise units and objects, final processing, the main energy a step that displays and documents accounting information in a way that is convenient for operational personnel of the service and management of the enterprise to analyze and accept (manage) the solution. In this case, AECAS is carried out using a server of a special DT data collection and processing center or a personal computer (PC).

The fourth stage - the third stage data collection and processing centers collect information from PK or a group of servers, systematize and combine information on groups of accounting objects, operative staff of the main energy service and regional display and document accounting information in a form convenient for the management of distributed medium and large power enterprises or energy supply enterprises to analyze and accept (manage) the solution, conduct contracts for the supply of energy resources and a step that performs the formation of payment documents for calculation of energy resources. In this case, AECAS DTi is implemented using a network server for data collection and processing.

Key words:

automatic control, operative staff, abnormal processes, energy resources, combine information, main energy, distribution network. Control, non-automatic information,

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