The market future of automated price parsing systems for the electric power

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Application of automated control systems allows providing better control on energy resources consumption, improving accountability, optimizing costs of energy resources. There is a need for the automated system which unifies all competing service providers of electric power and creates the monitoring environment of services on the basis of parsing. In such integrated system data collection is carried out in a uniform electronic platform (environment) based on the indicator “electric power service price”.

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Introduction

Continuous rise in price of energy resources and significant increase in their consumption push forward order for reaching more effective control on energy consumption, optimizing electric power production and delivery costs. Application of automated control systems allows providing better control on energy resources consumption, improving accountability, optimizing costs of energy resources.

The regulation of tariffs on the electric power in Russia is characterized by the following problems calling for their resolution:

- The branch principle, fragmentation in tariff regulation system, and service costs of natural monopolies on federal and regional levels do not allow providing uniform state system of tariff formation for the electric power.
- Lack of the uniform state price (tariff) policy aimed on achieving the balance of economic interests, both between regulation bodies and between producers and consumers of production in spheres of natural monopolies, constrains or interferes with economic development of the organizations in regions.
- Lack of coordination and inconsistency in regulation policies at industrial and regional levels leads to disproportions of tariffs for the electric power in branches and regions.

In the Russian Federation territory the legislative and regulatory basis of tariffs (norms) used for electric power delivery to all consumers and rendering services in the consumer market of the electric power include: the Law “About state regulation of tariffs for electric and thermal energy in the Russian Federation” (i), Basic principles in pricing established by the Government of the Russian Federation (ii), and Methodical instructions in calculation of tariffs for electric and thermal energy in the consumer market (iii).

Tariffs for electric energy (capacity) are differentiated by categories (groups) of consumers. These tariffs consider real expenses of the power supplying organizations on production and delivery of electric power to the specified
category (group) of consumers, profit rates of power suppliers on different consumer groups.

Modern systems of energy management provide opportunities for efficient monitoring of all types of energy resources, using of various communication channels for data transmission, remote connecting to system for viewing of data and controlling equipment state and performance, ensuring when needed a simplified system expansion with the minimum costs.

Productions in Russia have sufficient capacity to satisfy any needs of Russia in automated systems of energy management. Already today such systems are produced by enterprises in Penza city (systems “Energy”, “Tok”), Moscow and Moscow area (systems “MSUVT V11”, “Neiva-TK-16,” and “Telescop”), St. Petersburg (“MAVR”, “MAVR-102”, “SPE541”), and Nevinnomyssk (CT6801).

Despite abundance of domestic automated energy management systems, certain consumers of oil and gas and large power supply operators purchase foreign automated energy management systems (e.g., from multinational companies Landis+Gyr, Motorola, ABB) having essentially higher prices comparing to national analogs.

However, there is a need for the automated system which unifies all competing service providers of electric power and creates the monitoring environment of services on the basis of parsing. In such integrated system data collection is carried out in a uniform electronic platform (environment) based on the indicator “electric power service price”.

Potential functions of unified electronic platform can include among others the following:
- recording of applications created by contractors (consumers), with possibility of their adjustment
- mailing of notices to consumers about prices of electricity of various suppliers
- processing information requests on electric power services
- loading and managing database about trading on electric power services
- loading and managing data on power consumption.

The suggested system of electric power management with price parsing will provide deeper analysis of the electric power consumption, more opportunities for revealing shortfalls and miscalculations in the organization of power consumption, and developing right actions to decrease costs and expenses.

The proposed automated system of electric power management when connected to internet can embrace the following advantages:
- planning of rational power consumption and increase of efficiency of energy resources use
- access to information on possibility of various tariffs’ use for using the electric power
- automated information processing, data storage and presenting in a user-friendly format
- creation of multilevel systems and possibility of data transmission among different levels
- possibility to timely retrieval of requested data and information
- etc.

Designing of the automated system for electric power costs management can follow an identical scheme for the any level of complexity. Distinctions can take place in a configuration and capacity of technical and software means.

For example, on the level of Joint stock companies (JSC-Energo), which produce and distribute electric power, we can define some specific features. First of all, JSC-Ergo has rather big geographical distribution as such provider maintains
production and distribution of electric power, as a rule, on the large territory of Russian Federation (region, territory, country). In this case, the offered automated system of electric power management will consist of the local systems integrated to the regional system by communication networks (data transmission channels and corresponding equipment and tools).

A large consumer (e.g., plant) covering the smaller territory can be connected one server working with apparatus of data collection an transmission installed in an enterprise. Thus experts on a place can trace states of energy consumption and power, and receive reporting documents for any period form available data from all metering and controlling devices. In a populated residential area the automated electric power management system can involve the energy and the power counters established in houses (on every house or each apartment) and data collecting and transmitting apparatus. The apparatus will accumulate information from counters of several houses or apartments of the house. Servers which connect to the data collecting and transmitting apparatus can be installed in a power supplying company, in the management of populated residential area or in each house. Under this scheme the controlling personnel can trace consumption parameters for any time period and prepare reporting documents.

Having the integrated to server software the data exchange possibility with other servers, the power supplying company will automatically receive indications of counters. This data can serve as the basis for issuing payment receipts, carrying out verifications with average market cost, applying the automated system of parsing for electric power prices.