

Increasing the Efficiency of the Enterprise Management Process (Case study Termoelectrica JSCo)

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Abstract

Every national economy has multiple elements that contribute to its process of development, thus ensuring economic growth overall. In this aspect, the economy appears as a superstructure or core around which the other "constructive" elements are formed, and the effective coagulation and connection between these elements ensures sustainable national development.

One of the basic "constructive" elements that contribute to national sustainable development is the energy sector, which has a substantial weight in the national economy. Seen from the perspective of the fact that the Republic of Moldova does not have important energy resources, this sector is vulnerable to multiple internal factors and especially to external ones. In this perspective, the aim of the article is the purpose of this article is to analyse the optimisation paths and and determine ways to increase the efficiency of the management of enterprises.

Key words: management, enterprise, energy, efficiency, development, customer

J.E.L. classification: M0, M2, M3

1. Introduction

The most important aspect of implementing alternative energy sources and energy efficiency measures is improving the management of energy sector enterprises, especially those that control the full supply chain, including production, distribution, and supply. Given that from the Moldavian national energy sectors, as a result of the implementation of energy packages I, II and III of the European Union, only the thermal energy sector was consolidated, i.e. the enterprises and processes that provide - production, distribution and supply were merged, and an important share of the national thermal energy sector belongs to the company Termoelectrica JSCo, it is imperative to research all the stages that the said company went through in the process of implementing the mentioned packages of the European Union.

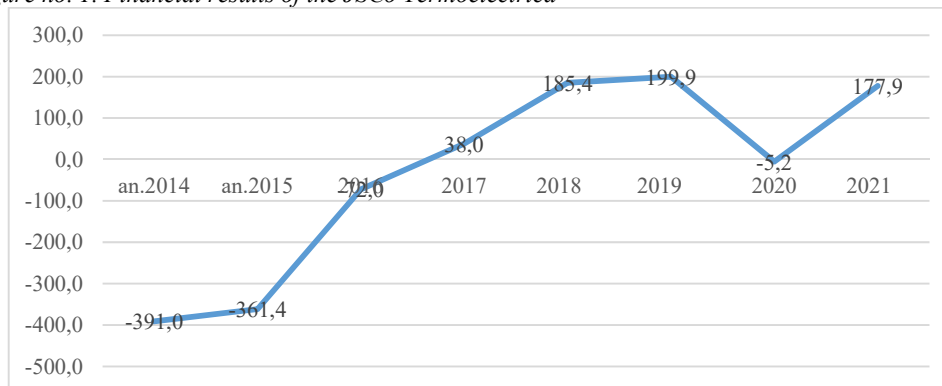
Termoelectrica is currently a joint-stock company subject to the regime established in the Law on joint-stock companies (Law, 1997), the largest producer of thermal and electrical energy in the Republic of Moldova (on the right side of the Dniester River) providing about 70% of the energy requirements of the municipality of Chisinau and about 15%-20% of the required volume of electricity.

In the years 2014-2015, the thermal energy sector of the municipality of Chisinau went through a vast reorganization process, regulated by a special law - Law no. 188 of 28.09.2014 regarding some measures regarding the bankruptcy procedure of JSCo "Termocom" (Law, 2014), as a result of which three large enterprises of this complex were merged: JSCo TPP-1 (production), JSCo TPP-2 (production), JSCo Termocom in insolvency process (distribution and supply).

That process resulted in the emergence of a new entity, Termoelectrica SA, which kept some internal structural elements from each company that it incorporated into itself, the company's management process being a difficult one due to the complexity and multitude of processes in which it was involved. Since its foundation in 2015, the company developed rapidly, and the taken measures

achieved results. Thus, the JSCo Termoelectrica (2023) was the most profitable company in the Republic of Moldova with a profit of about 200 million lei (Yellow Business Pages, 2023), according to the financial reports in 2019 and 2021.

Figure no. 1. Financial results of the JSCo Termoelectrica



Source: Developed by the author based on database of the company

The entire thermal energy sector is regulated by a special law, namely, Law no. 92 (2014) regarding thermal energy and the promotion of cogeneration, emphasizing the importance and place of the branch in the national economy.

It is certain that the measures taken during the nominated period are to be investigated by the authors in terms of their impact on the results obtained by the company, with subsequent identification of new, effective measures necessary for the sustainable development of the company.

It is worth mentioning that Termoelectrica JSCo is a thermal energy company whose activity is subject to state regulation through the authorized state body – the National Agency for Energy Regulation of the Republic of Moldova (NAER). Thus, the enterprise is limited in its activities by the regulations of the Agency, having the tariffs approved in this regard.

The authors consider that the efficient management of the respective enterprise has a major impact on both consumers and the economy as a whole, as the costs of thermal and electrical energy are included in the costs of many finished products that exist on the market. An important aspect that is proposed to be researched is the process of forming the tariff for the thermal and electrical energy produced by the enterprise, as well as the formation of the basic costs that are the basis of the approval of the tariffs.

2. Literature review

So far, many researches have been carried out in the investigated field at international and national level, which allow to study the theoretical approach of increasing the efficiency of the enterprise management processes (Georgescu, 2019; Kaufman, 2001; Mărcine, 2008; Nozdreva& Tsighiciko, 2020; Anderson, 2001). Moreover, the legislation of the Republic of Moldova plays a significant role in the research of the topic considered in the present article (Law, 1997, 2014, 2015, 2016, 2022). However, the authors conclude that analysis of how to make the enterprise management process more efficient is necessary and essential.

It is important to note that until now no extensive analysis of the measures undertaken by the energy companies in the Republic of Moldova, in these years has been carried out, except for some summary evaluations at the level of the governing bodies and reports within the Project to Improve the Efficiency of the Centralized Thermal Energy Supply System, implemented with the support of the World Bank (Law, 2015).

The research of the activities and of the enterprise with the obligatory description of the processes on each subdivision is important in the process of optimization of the processes within the enterprise. These actions are necessary because at the moment, there are multiple processes within the enterprise that are duplicated, overlapping, and the efficiency of some subdivisions is limited due to the organizational structure of the enterprise.

The description of the internal and external processes in which the company is involved will allow to come up with proposals to optimize and make the company more efficient internally, with the proposal of a new organizational structure, as well as allow to create a new external environment for interaction both with the company's customers as well as with partners, suppliers, etc. In this regard, the empirical basis of the article consists of material obtained by the author from national and international scientific research. Statistical data, publications and personal observations gathered during the research were also used as informative content.

3. Research methodology

Scientific research methodologies were used to conduct the study in order to fully analyze the sector's economic situation. For this purpose, the research methodology used by the authors has compiled various scientific methods, such as: dialectics, logic, structural-functional, deduction and induction, analysis and synthesis, analogy and comparison. The article also made use of general scientific techniques like description, and comparative analysis.

4. Findings

An important aspect to be researched is the interaction with the company's customers and the creation of an effective system in this regard, which will allow the improvement of the company's image, because, according to some quantitative and qualitative researches, the perception by customers (consumers) of the company is limited, due to the problems regarding the quality of the service provided during the crisis period until the reorganization in 2015. At the same time, it is important to mention that after the reorganization there is a tendency of increase in the number of customers with a positive perception of the company. Thus, the aim is to identify and describe the actions that led to the increase of customer trust, but also to propose a new mechanism of interaction with customers based on the new realities that will allow customer loyalty and increase the number of customers with a positive perception of the company.

Customer relations within Termoelectrica JSCo acquire a totally new connotation and the current system is to be fundamentally rethought as a result of the implementation of the new legal framework in this regard, namely the Condominium Law, no. 187 (2022). The said law will enter into force partially according to a timeline described in it, but the new provisions regarding relations within condominium housing blocks, including those related to supplier-client relations, will enter into force within 6 months from the moment of publication, the Government and ANRE being obliged by law to intervene in the secondary normative regulatory framework (Government Decision 2002, Decision of the NAER, 2017. According to the new legal framework, Termoelectrica JSCo will use intermediary service contracts with its customers, which assumes that Termoelectrica JSCo, as a supplier, will conclude a thermal energy supply contract with the Housing Property Manager (APC – Condominium Owners Association), based on which it will deliver heating agent directly to the owners of apartments and non-residential spaces within the condominium.

For the national thermal energy system, such relationships are new, which have not been tested in practice, and their implementation can have unpredictable effects both on the company as a supplier of thermal energy and on consumers in terms of quality and costs.

As mentioned in the specialized literature, customer relationship management is a set of solutions that guide the actions of an organization in developing positive relationships with customers (Comanescu, 2018). Thus, the new customer relationship management structures, if they not built correctly, can lead to a massive unpredictable impact on consumers but also on other sub-branches of energy, especially those related to natural gas and electricity, the company being the largest consumer of natural gas and the largest producer of electricity in the Republic of Moldova (on the right side of the Dniester River).

As mentioned previously, in the new realities new customer interaction systems are to be researched and proposed – new contracts, new invoicing process, reforming the debt recovery process, changing customer interaction methods, covering new areas in relations with the clients who belonged to the managers of the housing stock, etc., as well as the remodeling of the internal systems of interaction between the subdivisions – the optimization of the subdivisions and of new processes,

the modification and approval of new internal regulations (job descriptions, regulations, instructions, etc.), the description of new processes with creating interaction block schemes, etc. These can be simple or complex general actions depending on the established needs, or they can be precise simple individualized actions - for example, instructions for a specific employee (Kaufman, 2001).

A special role in this process is that of the commercial subdivisions within the company, i.e., the aspect of customer relationships, which, structurally within the company, belongs to the Commercial Service and the Customer Relations Service, these two services ensuring approximately 90 percent of the interaction with customers, starting from the drafting and signing of contracts, supply and ending with aspects of invoicing, call center, consultations, debt recovery and enforcement.

At the moment, in terms of the supply of thermal energy, the company has about 5,000 direct customers and about 200,000 indirect customers. With the named legal provisions, the situation will change radically, the report being that about 205,000 direct customers. Thus, the customers are going to get a new active posture, namely that of "partner" with which the enterprise interacts through different channels (Georgescu, 2019)

These changes will necessarily have an impact on the organizational structure that will require the identification of new solutions, for example, the possible large volume of activities will require the outsourcing of the billing service, or, for example, it will be necessary to outsource the debt recovery processes, but these aspects are to be researched and examined through the lens of the complexity and interdependence of the processes in which the company is involved. Holding a top management position within the company (Deputy Commercial Director), the author of this report will have all the proposed documents and activities from the first source. Moreover, in the research process, the research results will certainly be identified and implemented in the company's activity, thus being able to dynamically examine the proposed solutions and the results obtained as a result of the implementation of the research results. From the point of view of business management, the effect of introducing a new management system will be manifested by the fact that the decision-making process will be transferred to a lower level due to automatization and unification. This will increase the speed of response to requests, increase the speed of turnover of funds and reduce costs (Anderson, 2001).

Considering that the Republic of Moldova is in an extensive process of adjusting the legal and normative framework to the directives of the European Union, we propose to carry out an extensive analysis of the Directives of the European Union that are to be integrated into the national legislation and their impact on the enterprise' activity, as well as in the complex on consumers. For this purpose, the implementation of new regulations such as the European Union Directives do not always lead to a decrease in costs, on the contrary, they can lead to their increase, a fact that has an impact on customer relations as well as on the final tariff paid by the consumer. The analysis of the NAER Methodologies that regulate the process of formation of tariffs for thermal and electric energy and their comparison with the realities in which the company operates, will allow the identification of optimal solutions for the submission of proposals for modification, adjustment of the respective Methodologies, and will allow the company to identify and implementing new development opportunities (Decision of the NAER, 2019).

Figure no. 2. Evolution of the Thermal Energy Tariff for the period 2015-2023

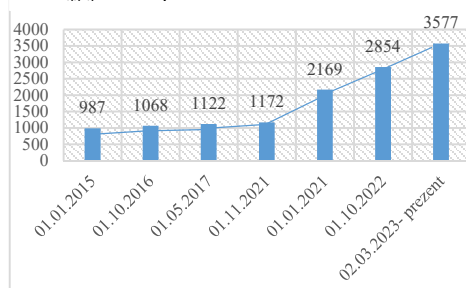
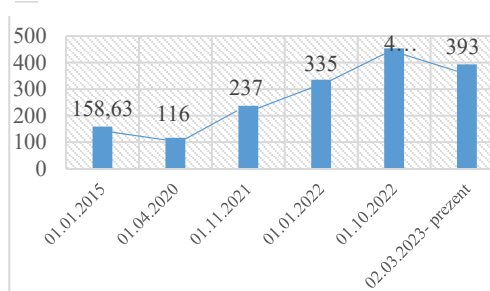


Figure no. 3. Evolution of the Electricity Tariff between 2015-2023



Source: Developed by the author based on database of the company

In this last regard, it is considered appropriate to examine the practice of regulating the activity of thermal energy enterprises in other countries such as Romania, Ukraine and other countries that have a vast history in this regard.

Considering that the company produces cogeneration in addition to heat and electricity, it is strictly necessary to research electricity as a separate product, as electricity is regulated differently from heat (Law, 2016). Moreover, in 2022 the new Rules of the Electricity Market came into force, approved by the NAER Decision (2020), which establish a series of new principles that have a significant impact on the company's activity in terms of production costs.

The new Rules of the Electricity Market are to be analyzed and viewed through the prism of the complexity of the electricity system of the Republic of Moldova, considering the major impact that the respective regulations have both on the companies in this sector and on the final tariffs that they have to pay the consumer.

With the entry into force, the following markets were activated:

- The market of bilateral electricity contracts - on this market at the moment the electricity produced by "Termoelectrica" JSCo is sold;

- Organized electricity markets - on organized electricity markets, participants carry out sales-purchase transactions of electricity, interconnection capacities, system services, other related products, through the electricity market operator or through the operator of the transport system, depending on the specifics of the market. On organized electricity markets, prices are formed based on demand and supply, as a result of some competitive mechanisms. The organized electricity market is considered to be the day-ahead electricity market, the intraday electricity market, the organized contract market, the balancing electricity market and the system services market.

It is proposed to analyze the possibility of the company to intervene in the newly opened markets, especially in the following directions: the day-ahead electricity market, the intraday electricity market, the balancing electricity market.

Of course, the launch of the company on the named markets must be examined through the lens of technological possibilities, but also through the lens of the possibilities of guaranteeing the volumes of electricity that can be produced at the thermal power plants that the company owns.

We consider that it is also important to train the personnel who will be involved in the potential identification activity and the technical-economic analysis of the possibility of intervention in competitive markets.

An important aspect is that the respective Rules are currently implemented, a fact that will allow the dynamic monitoring of the proposed regulations on the company's activity, with the formulation of proposals for adjustment and modification of the normative framework.

Authors aim to identify and implement energy efficiency projects in the company's activity; thus, we will examine this aspect in two different scenarios, namely:

1. Energy efficiency measures in the company's internal processes: replacement of outdated equipment, insulation of surfaces with high heat loss, replacement of distribution elements with insulated ones (networks, valves, etc.), construction of new plants on different fuel sources, especially on biomass, etc.;

2. Efficiency measures for customers: installation of Individual Thermal Points (PTI), implementation of horizontal distribution of the thermal agent, thermal insulation of buildings, installation of photovoltaic panels, etc.

An extensive analysis of the possibilities of implementing such measures will be carried out, using the approach through the perspectives of different mechanisms adopted as the best practices at the international level, adjusted to the realities of the Republic of Moldova. In particular, it is proposed to analyze the implementation within the enterprise of energy performance contracts (ESCO), the concept of which involves the recovery of the investment by a third-party investor through the savings obtained as a result of the implementation of energy efficiency measures.

The identification and implementation of such an adjusted concept can lead to a significant impact on the company's activity by reducing production costs, redirecting resources to the necessary investments for the re-technologization of the company and finally reducing the tariffs for thermal energy and electricity paid by the final consumers.

Energy efficiency measures at customers are to be researched and identified through the lens of and in close collaboration with development partners who are interested in such projects and local

public administration, Condominium Owners Associations. As an initial idea, we propose to study the possibility of creating a fund that will have management functions for these activities, the structure, components, founders and financiers of the fund are to be identified in the research process.

Attracting investments in Termoelectrica JSCo in the form of energy performance contracts is one of the opportunities proposed to research, however, another aspect to which drawing attention is a must is attracting major investments in the capitalization of the enterprise. Usually, such investments are necessary in major processes of reformation, re-engineering, such as the construction of new generation sources of significant capacities, the cost of which amounts to over 100 million Euros.

In the energy strategies of the Republic of Moldova during the years starting from the 2000s, provisions were included that established the need for the construction of new sources of electricity - thermoelectric power plants on natural gas, including in the energy strategy until 2030. However, the financial sources for the construction of such plants have not yet been identified.

5. Conclusions

The need to develop relations in the thermal energy sector and their evolution as a result of the implementation of the European Union Directives, led to the approval of a series of new regulations in this sector, the impact of which has not been studied.

Considering the multitude of new regulations approved by state bodies at different levels, the activity of companies in the thermal energy system will undergo radical adjustments, and their impact depends on the ability of the company's management to react promptly and identify the optimal solutions in order to bring maximum efficiency to these complex processes.

The need for the development, testing and implementation of complex systems for the management of thermal energy enterprises is emerging, systems that will be based on the multitude of new regulations, as well as from the practice of their application.

The engineering of structures for effective management of processes within the enterprise will gain particular weight in the process of adapting to the new realities in which enterprises in this sector have found themselves, and the application of effective management measures will allow their sustainable development.

The efficiency of the enterprise management process will certainly lead to the optimization of costs and, as a summary effect, to the reduction of tariffs for thermal energy and electricity paid by final consumers, and the state as the holder of the control packages of shares (100%) in the largest thermal energy companies (Termoelectrica JSCo, TPP Nord JSCo), will have a viable enterprise that develops without major support interventions.

For the future research, is advisable to be carried out an analysis of the possibilities and ways of attracting major investments through the capitalization of the company Termoelectrica JSCo, including through the issuance of open or limited shares with their subscription by private individuals, or the issuance of bonds.

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