

## THE CONTRIBUTION OF THE HUMAN FACTOR IN THE EFFICIENCY OF THE OPERATIONAL MANAGEMENT OF ELECTRICAL NETWORKS (case study based on "Red-Nord" JSC materials)

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**Abstract:** *the present study represents a theoretical-methodological foray into the possibilities of making the operational management of electrical networks more efficient based on the exploitation of the human factor. Just as the operative management of electrical networks constitutes an activity of maximum responsibility, where the contribution of the human contractor contributes to ensuring the quality of the services provided, we believe that the main factor in the efficiency of the operative management of electrical networks is the development of the human potential of the employees. In this context, we highlight the purpose of the research, which is aimed at identifying the possibilities of making the operational management of electrical networks more efficient within the "Red-Nord" JSC company. Moving forward in the complex research approach, we tried to solve the research problem which is represented by possibilities for improving operative management through the development of the human factor. The research methodology focused on the use of multiple research methods, such as: analysis, synthesis, scientific abstraction, induction, deduction, abduction, qualitative research based on the case study. The paper begins by reviewing the conceptual approaches regarding energy management, as well as the possibilities for making energy management more efficient. Moving forward in the research approach, I researched the personnel indicators of the company "Red-Nord" JSC, the impact of capitalizing on the human factor on the efficiency of the analyzed enterprise was evaluated. As a result, the main changes that have occurred since 2014 within the company have been analyzed, through the lens of the effective capitalization of the human factor and the implementation of information technologies that allowed the optimization of the Central Dispatch Point (PDC) service that ensures the operative management of electrical networks within the company. At the same time, solutions to increase the efficiency of the operational management of electrical networks within were identified for "Red-Nord" JSC which boils down to the reorganization of the PDC service of the company, the merging of LVDP (Low Voltage Dispatch Point) which will contribute to increasing the efficiency of operative management by implementing advanced information systems within the enterprise.*

**Key words:** *electricity, energy management, human factor, human capital, information technologies*

**JEL:** L26, M1, Q40, Q42, Q47

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## 1. Introduction

The “Red-Nord” JS Company is the distributor of electricity from the northern part of the Republic of Moldova, it is a leader in the modernization and optimization of distribution processes, as well as in the digitalization of processes in order to increase the quality of the services offered, to increase customer satisfaction with the company’s services. The efficiency and optimization of the operative management of electrical networks has been the main concern of the company for the last 10 years, as it has been looking for effective solutions to connect the operative management of electrical networks to European standards.

According to researchers G. May, I. Barletta, B. Stahl, M. Taisch, 2015, energy management is defined as “a combination of industrial methods applied in business management to help make optimal use of energy resources for the efficient processing of tasks” [7, pp. 48-51].

On the other hand, M. Melo, L. Bueno, S. Campello, 2012, point out that energy management represents an evaluative perspective of the management of the energy system and it is important to evaluate and produce the efficient use of energy in order to maximize profits as well as to enhance competitive positions, through organizational measures and optimization of energy efficiency in the process [8, pp. 10-11].

In the same context, R. Kannan, W. Boie, 2003, appreciate that an efficient energy management is an essential tool both for saving energy costs and limiting the impact on the environment. The decisive factor for the effective implementation of energy efficiency is a proper energy management [6, pp. 946-948].

According to researchers L. Young Eal, L., K., Kyoo-Kun, a good management of energy consumption saves energy itself, on the one hand, as well as it is necessary to achieve the majority of technical energy-saving measures. Energy management, from any perspective approached, deserves attention from a triple perspective: financial, social, and environmental [17, pp. 1151-1154].

The continuous increase in the demand for energy resources on the international market has deepened the problem of efficient management of energy consumption, on the agenda of most states of the world. In terms of business, energy is vital as one of the fundamental input elements in almost every sector. Therefore, energy costs directly affect the profitability of an enterprise.

It is clear that countries that can keep their energy costs low offer their companies a competitive advantage [8, p. 12]. In this context, there is a strong relationship between the security of electricity supply of countries and their national security. The strong relationship means that when there is an inadequacy of energy supply, economic and political stability will deteriorate concurrently.

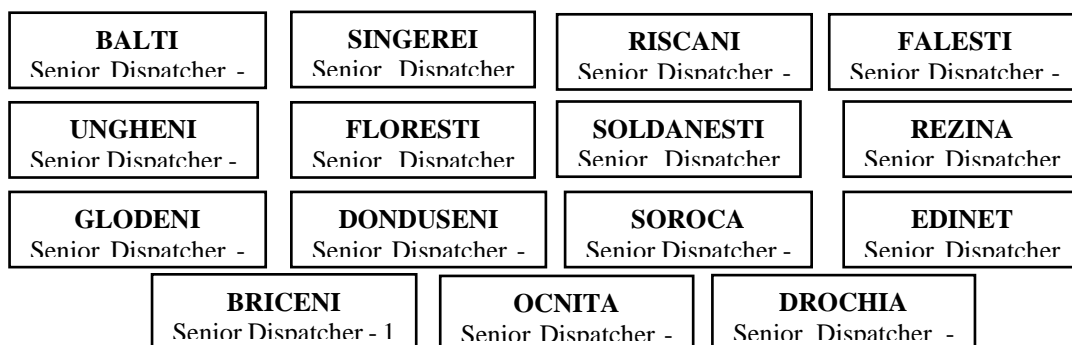
## 2. Managementul gestiunii operative în cadrul companiei

Throughout its activity, the “Red-Nord” Joint Stock Company went through multiple challenges, overcame and solved problems, showing professionalism on the energy market in the Republic of Moldova.

One of the most important departments of the company is the *Central Dispatch Point service (CDP)*, which ensures the operative management of the electrical networks within the company. A significant contribution in ensuring the increase in the performance of the “Red-Nord” JST was provided by the company’s dispatch service, which ensures the efficiency of the operative management of the electrical networks. Thus, the main object of activity of the dispatch service of the “Red-Nord” JSC is the operative management of the 10/0.4kV electrical networks.

The operational activity carried out by the employees of the dispatch service consists in monitoring the set of lines, installations, and electrical equipment 10/0.4kV, which starts from the departures from the electrical stations of “Moldelectrica” SE to the customer’s delimitation final point. Until 2014, the structure of the dispatch service was a complex one where 105 employees were involved, 80 dispatchers and 15 senior dispatchers who ensured the operative management of the company’s electrical networks. Schematically, the structure of the CDP service is shown in figure 1.

*Later, major changes took place within the company, a restructuring and optimization of the operational management of electrical networks according to the European operational management models.* Thus, the dispatching service was restructured from 15 territorial dispatching subdivisions of the company in which the main dispatcher and 5 other dispatchers worked in each subdivision, major changes were made and 3 CDPs (Central Dispatch Points) persisted in which 5 people work.



*Figure 1. The structure of the dispatch service until the reorganization*  
 Source: developed based on data from the “Red-Nord” JSC CDP service

At the same time, a 24/24 Customer Service Group (Call-center) was created to serve the company’s customers and respond to their requests by phone. Until

the implementation of the reforms, 15 local dispatch points operated within the company, for each branch, where 5 dispatchers were involved in shifts and the superior dispatcher, a total of 90 dispatchers.

As a result of these optimizations, the structure of the service was reorganized, and the number of employees was reduced, with only 60 employees being trained in the activity of the PDC service. The optimizations had a significant economic impact on the company’s activity. In addition to this, the quality of electricity distribution services and the speed of service to the company’s customers also increased.

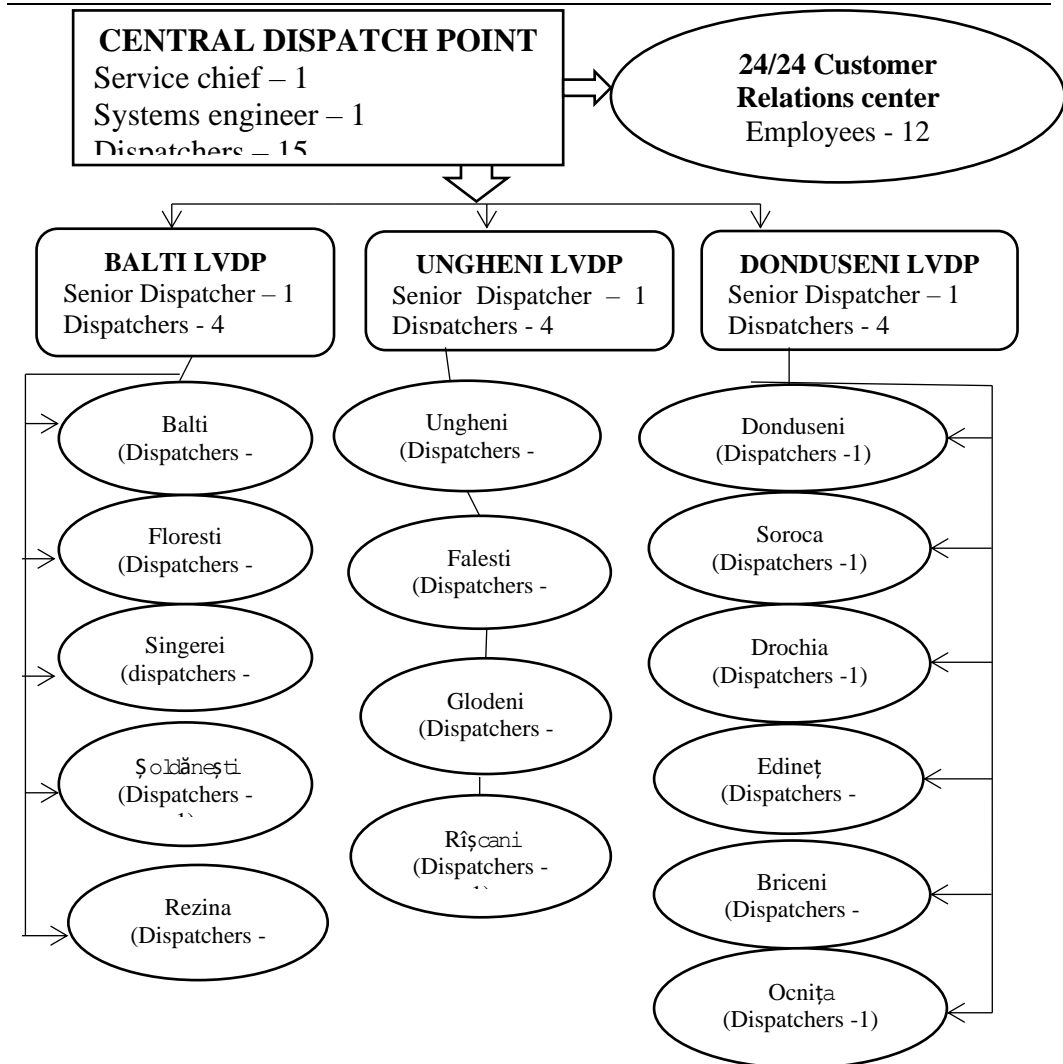
*Table 1. Human resources of the CDP service within “Red-Nord” JSC*

<b>Position</b>	<b>No. of employees</b>
CDP Chief	1
Dispatcher on functional regimes	1
CDP dispatches in 12-hour shifts	15 (3 CDPs of 5 people each)
LVDP Chief	3 (Balti, Ungheni, Donduseni)
LVDP dispatches in 12-hour shifts	15 (Balti, Ungheni and Donduseni of 5 people each)
LVDP dispatches with 8-hour shifts	12
Senior customer information officer “24/24 Customer Service Group”	1
Customer information officer “24/24 Customer Service Group”	12
<b>Total employees:</b>	<b>60</b>

*Source: developed based on the activity reports of the “Red-Nord” JSC*

As a result of the reorganization, currently, within the CDP service of the “Red-Nord” JSC 60 people are employed, including dispatchers and employees from the 24/24 customer service group. The competence of employees from the dispatch service of the “Red-Nord” JSC depends, in large part, on the efficiency of the electricity supply to the final consumers, the lack of electricity interruptions, the quick resolution of technical problems arising in the electricity networks. Thus, dispatch service employees are competent people, attend training courses and develop their electrical network management skills.

With the creation of the Central Dispatch Service, the “24/24h Customer Service Group” (Call center) was also established, where 12 employees work in 12-hour shifts and, depending on the weather conditions and other factors, can simultaneously work up to 6 employees but not less than two employees per shift.



*Figure 2. The structure of the dispatch service after the reorganization*

*Source: developed based on data from the “Red-Nord” JSC CDP service*

The main factors that led to the organization of the “24/24 Customer Service Group” with the aim of making the activity more efficient in serving customers, are the following:

- ✓ centralization of some activities carried out in order to improve the efficiency of human resources;
- ✓ implementation of the “Non-Stop” telephone service (Call-Center) for receiving information about deviations, related to the distribution of electricity;
- ✓ implementation of the telephone service for handling customer complaints;

- ✓ notifying non-domestic customers by phone about the date and duration of the scheduled interruption of electricity supply;
- ✓ implementation of a new high-performance computer system for processing customer calls

### **3. The human factor: the premise of operational management efficiency**

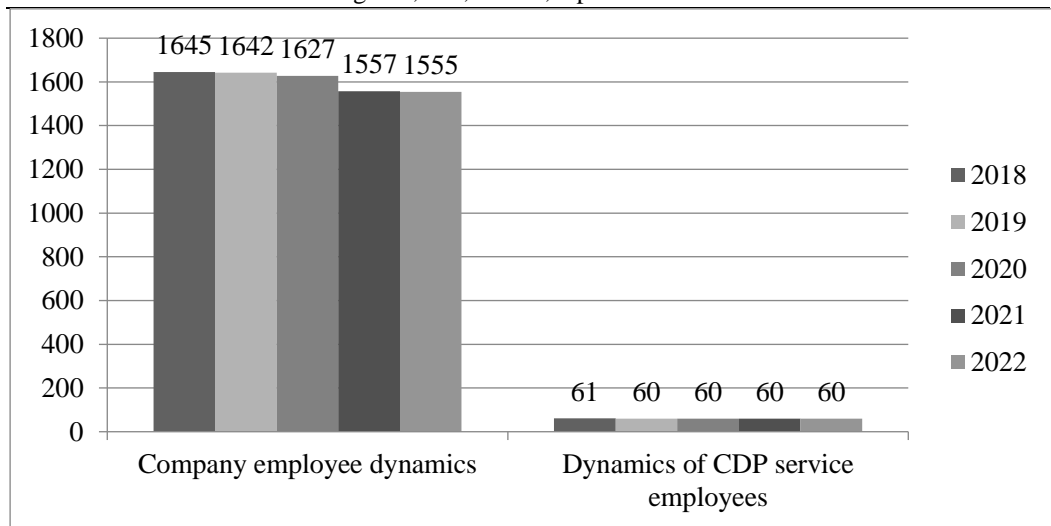
The human resource is the main resource that contributes to ensuring added value within companies, it is the creative, motivated resource that transforms all other resources within a company. The human potential of the company's employees is the most valuable asset of organizations operating in the 21<sup>st</sup> century, characterized by dynamism, turbulence, rapid changes that require employees to adapt to the new environment, to identify quick solutions to overcome market imbalances.

Thus, human resources are the success factors that, thanks to their skills, competences, potential, are meant to help companies survive on the market, or even become competitive.

Energy company employees are the most valuable resource that helps companies achieve their goals as well as increase their recorded economic performance. Safeguarding the continuity of electricity supplies is guaranteed, on the one hand, by the quality and functionality of the electricity distribution equipment, as well as by the competence of the employees in the operational management department, who ensure the functionality and continuity of electricity supplies.

Thus, we intend to analyze the human potential and the personnel indicators of all the employees of the “Red-Nord” JS company, on the one hand, as well as the CDP service, on the other.

Next, we will schematically represent the results obtained from the analysis of the dynamics of human resources within the “Red-Nord” JS company, as well as the personnel indicators within the enterprise in the period 2018-2022. At the same time, we propose to carry out an analysis of the dynamics and structure of the personnel within the CDP service within the “Red-Nord” JSC. The dynamics of employees of “Red-Nord” JSC and the CDP service, for the period 2018-2022, is represented in Figure 3.



*Figure 3. The dynamics of the employees of the “Red-Nord” JSC and the CDP service, 2018-2022, employees*

*Source: developed based on the research results of the “Red-Nord” JSC activity reports*

Analyzing the data, we can see a slight decrease in the total number of employees within the “Red-Nord” JSC for the period 2018-2022. Although, we notice insignificant decreases, from 1645 employees in 2018 to 1555 employees in 2022. Thus, a slight decrease in the number of employees in 2022 by approximately 6% compared to 2018 can be seen. The trend of decrease in the number of employees is fueled by the optimization of positions that were carried out by the human resources department within the enterprise in order to increase the performance of human resources.

On the other hand, analyzing the dynamics of employees within the CDP service, we can observe an insignificant decrease in the number of employees in the period 2018-2022, from 61 in 2018 to 60 employees in 2022, or by approximately 0,02%. The slightly decreasing trend is based on the optimization of a position in the PDC service, in 2018.

The dynamics of the indicators of employee migration within the “Red-Nord” JSC and within the CDP service are summarized in Table 2.

*Table 2. The dynamics of the human resources migration within the “Red-Nord” JSC, 2018-2022, employees*

Employee migration		Years					Share, (%)				
		2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Employed staff	company	109	144	96	98	160	6,5	8,8	5,9	6,3	10,3
	CDP Service	4	2	2	3	1	6,6	3,3	3,3	5	1,7
Resignations	company	116	111	127	168	160	7,3	6,8	7,80	10,8	10,3
	CDP Service	5	3	2	3	1	8,2	5	3,3	3,3	1,7
Input coefficient	company	0,07	0,09	0,06	0,06	0,1	X	X	X	X	X
	CDP Service	0,07	0,03	0,03	0,05	0,02	X	X	X	X	X
Output coefficient	company	0,07	0,07	0,08	0,11	0,1	X	X	X	X	X
	CDP Service	0,08	0,05	0,03	0,05	0,02	X	X	X	X	X
Coefficient of total migration	company	0,14	0,16	0,14	0,17	0,21	X	X	X	X	X
	CDP Service	0,15	0,08	0,07	0,1	0,03	X	X	X	X	X
Total employees	company	1645	1642	1627	1557	1555	100	100	100	100	100
	CDP Service	61	60	60	60	60	100	100	100	100	100

*Source: developed based on the activity reports of the “Red-Nord” JSC*

According to the data in the table, we observe an increasing trend of new personnel hired by the enterprise in the period 2018-2022. Thus, during this period, there is a positive dynamic in the number of employees from 109 employees, in 2018, to 160 employees, in 2022. As far as we can see, the “Red-Nord” JSC is recruiting specialists to fill the vacant positions, released as a result of employee resignations. On the other hand, analyzing the dynamics of employment within the CDP service, we can observe a reduction in the number of employments within the department in the period 2018-2022, from 4 employments in 2018 to 1 employment in 2022. The results demonstrate a stability of the number of employees who provide added value to the company in increasing the recorded performances.

At the same time, we observe a positive dynamic in employee resignations, in the period 2018-2022. Thus, if in 2018, 116 employees resigned, then in 2022,

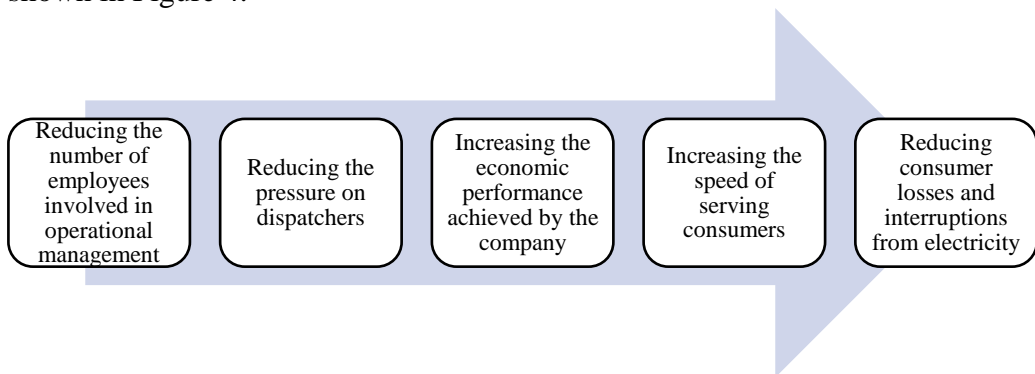


160 employees resigned. The reasons for resignations are very different, such as going abroad, family problems, etc. Analyzing the dynamics of resignations registered at the PDC service, we can observe a negative dynamic, from 5 resignations in 2018 to a single resignation in 2022. The results obtained point to a high rate of staff stability within the CDP service.

Just as in the period 2018-2022 there is an increase in the dynamics of hiring and resignations, the indicators of the movement of personnel are also increasing. Consequently, if the entry coefficient recorded the value of 0.07 in 2018, then in 2022, it reached to register the value of 0.1, or registering an increase of 0.03. On the other hand, we can notice an increase in the coefficient of outputs, where in the analyzed period we see an increase of 0.3 from 0.6 in 2018 to 0.1 in 2022. And the coefficient of the total movement of employees in the analyzed period increases from 0.14 in 2018 to 0.21 in 2022, therefore increasing by 0.07. On the other hand, analyzing the coefficient of entries within the CDP service, in the analyzed period, we see a downward trend for the analyzed period from 0.07 to 0.02. The coefficient of outputs within the CDP service is also decreasing for the analyzed period from 0.08 to 0.02. At the same time, the coefficient of the total migration of employees within the CDP service is also decreasing, for the entire analyzed period, from 0.15 to 0.03.

#### 4. Energy efficiency indicators

Thus, the restructuring of the operative management of electrical networks within the “Red-Nord” JSC allowed the company to obtain multiple advantages, shown in Figure 4.



*Figure 4. The advantages generated by the restructuring of the operative management of electrical networks within the “Red-Nord” JSC and the implementation of information technologies.*

*Source: developed by the author based on company data*

From the data in the figure, we can see that, as a result of the implementation of information technologies in the dispatching service within the

“Red-Nord” JS company, there have been beneficial changes in the company’s activity, offering the possibility of obtaining economic performance of 30%, compared to the period before the restructuring.

Next, we have shown in Table 3, the dynamics of the investments made by the operators of the electricity distribution system, in dynamics for the period of 2017-2021.

*Table 3. Investments of system operators and electricity suppliers, 2017-2021, thousands of lei*

Companies/Years	Planned investments					Investments made			
	2017	2018	2019	2020	2021	2017	2018	2019	2020
“Moldelectrica” SE	306593	392556	275848	196037	302332	66254,1	39388	380392	136881
FCE “Premier Energy Distribution” JSC	302213	385459	310425	330647	310472	273159,9	340844	259710	321136
“Red- Nord” JSC	226494,75	227902	266636	272089	297075	161976,15	197352	255217	236834
FCE “Premier Energy” LLC	1661,3	1780	1103	3407	1223	1435,6	1382	454	3455
“Furnizarea Energiei Electrice Nord” JSC	719,01	294	281	119	576	201,5	195	202	66

*Source: ANRE activity reports for 2017-2021*

Analyzing the data in Table 3, we can see that the investments made by the system operators of the electricity suppliers are increasing, for the analyzed period of 2017-2021. The “Red-Nord” JSC has registered an increasing investment trend. Thus, the value of the planned investments for 2017 was 226,494.75 lei, while in 2021, the value of the indicator was 272,089 lei, or an increase of approximately 31%.

On the other hand, if we analyze the value of investments made by the “Red-Nord” JSC for the period of 2017-2020, then we observe an oscillating trend of the investments made. Thus, if during the period of 2017-2019 there is an increase in the investments made by the “Red-Nord” JSC, from 161976.15 lei, in 2017 to 255217 lei, in 2019, then, in 2020, the value of the indicator registers a decrease, reaching the value of 236 834 lei. Most of the investments were directed to the technical maintenance of the equipment and the modernization of the electricity distribution lines, as well as to the introduction of new information technologies that allowed the company to reduce its electricity losses, optimize processes, as well as reduce the duration of electricity interruptions for domestic consumers.

The quality of the operative management of the electrical networks of the “Red-Nord” JSC can be appreciated by observing the duration of unscheduled interruptions, reducing the number of compensations paid by the company to its consumers. The synthetic data of the quality indicators of the operative management of electric networks is shown in Table 4.

*Table 4. Ensuring continuity of service to Moldovan OSD consumers, 2017-2020*

	FCE “Premier Energy Distribution” JSC				“Red-Nord” JSC			
	2017	2018	2019	2020	2017	2018	2019	2020
Total number of scheduled outages	18442	14687	4431	13645	14178	10656	10841	4 431
Exceeding the allowed duration	313	116	24	20	73	77	159	12
Number of compensations paid	4	1	29	6306	0	15603	14850	1238
The number of compensations paid to final consumers (automatically), lei	2921	5073	23102	94806,72	0	0	0	53517,98

*Source: elaborated based on the ANRE Reports, 2017-2020*

According to the data in the table, we notice that the “Red-Nord” JSC performs an efficient operative management, given the fact that the value of the quality indicators indicates significant progress registered by the company through the dispatch service in the period 2017-2020. Thus, performing a comparative analysis of the two electricity distribution operators from the Republic of Moldova, “Red-Nord” JSC, in the period 2017-2020, recorded clearly superior values of quality indicators compared to the company FCE “Premier Energy Distribution” JSC.

Thus, within the “Red-Nord” JS company, in the period of 2017-2020, the total number of scheduled outages has been significantly reduced, from 14178 scheduled outages made by the company in 2017 to 4431 outages in 2020. So, we see a reduction of approx. 300% of scheduled outages. Making a comparative analysis, with the electricity distributor FCE “Premier Energy Distribution” JSC, the value of the indicator in 2020, is 13645 interruptions, or 300% higher than that of the “Red-Nord” JS company.

From the total number of scheduled disconnections/ outages, within the “Red-Nord” JSC, at the level of 2020, only 12 disconnections exceeded the allowed duration, while within the FCE “Premier Energy Distribution” JSC the

number of outages that exceeded the allowed period was 20, or 66% more than the “Red-Nord” JSC.

Another significant indicator, denoting the speed of solving problems of electricity consumers by the dispatch service, is the number of compensations paid by the company. If we were to make a comparative analysis, then we can observe that, for the analyzed period, the number of compensations paid to consumers of the “Red-Nord” JSC follows a downward trend in the period of 2018-2020, from 15,603 compensations paid by the distribution operator, in 2018, to 1,238 compensations paid, in 2020.

Compared to “Red-Nord” JSC, the operator of the electricity distribution system FCE “Premier Energy Distribution” JSC, in the period of 2018-2020, records an increasing trend of compensations paid, from 1 paid compensation, in 2018, to 6306 compensations paid, in 2020. Thus, the FCE “Premier Energy Distribution” JS company paid, in 2020, 5 times more compensations to its consumers, compared to the “Red-Nord” JS company.

On the other hand, if we analyze the amount of compensation paid by the operators of the electricity distribution system in the Republic of Moldova, in dynamics, we can mention that the operator FCE “Premier Energy Distribution” JSC registers a positive dynamic of the values recorded for this indicator, from 2921 lei, in 2017, to 94806.72 lei, in 2020. In the same context, the “Red-Nord” JS company, for the analyzed period, recorded clearly superior results, compared to the FCE “Premier Energy Distribution” JSC. Thus, during 2017-2019 the “Red-Nord” JSC did not pay any compensation, while in 2020, it paid compensations in the amount of 53517.98 lei, 77% less than the distribution system operator FCE “Premier Energy Distribution” JSC.

The efficiency of the dispatch service within the “Red-Nord” JSC company can be evaluated through the quality indicators of the operative management of electrical networks, registered by the company (Table 5).

*Table 5. Quality indicators recorded by OSD, 2017-2020*

	FCE “Premier Energy Distribution” JSC				“Red-Nord” JSC			
	2017	2018	2019	2020	2017	2018	2019	2020
Total Scheduled Outages	16230	14687	11402	11933	10441	10656	10841	11140
Unannounced scheduled outages	0	0	14	58	0	0	0	0
Requests for the release of the approval for connection to the electrical network of	6727	6741	9243	8016	3921	3161	3497	4052

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distribution of electrical installations of potential final consumers (10 days)								
Requests for the release of the approval for connection to the electrical network of power plant distribution (30 days)	121	136	318	514	0	11	149	176
Number of connection requests	11422	12569	12840	15501	2509	2342	1795	2287
Number of final consumers connected within more than 2 days	15	12	4	0	0	0	0	0
Compensation amount, lei	576,13	243	353	0	0	0	0	0
Total number of consumers reconnected	11480	9740	14349	6919	10848	10526	8091	6947
Number of consumers reconnected within more than 2 calendar days	5	3	5	3	0	0	0	0
Amount of compensation paid, lei	78,25	173	207	601,2	0	0	0	0

*Source: ANRE Reports, 2017-2021*

Analyzing the data in Table 5, we can see that the electricity distribution system operator FCE “Premier Energy Distribution” JSC registered an increasing trend of scheduled unannounced outages, from 0, recorded in 2017, to 58 unannounced outages, recorded in 2020. On the other hand, the “Red-Nord” JS company, for the entire analyzed period, did not register any unannounced disconnections, in the period of 2017-2020.

In the same context, we can mention that the electricity distribution system operator FCE “Premier Energy Distribution” JSC registered an increasing trend of compensations paid, in the period 2017-2020. If in 2017, the operator paid 78.25 lei in compensation to its consumers, then in 2020, the value of the indicator reached 601.2 lei. On the other hand, the system operator the “Red-Nord” JSC, for the entire analysis period, did not pay compensation for its consumers. This denotes the seriousness, the promptness of the reaction of the “Red-Nord” JSC to

consumer calls and the promptness of the actions taken by dispatchers from the company's operational management system.

Following the research carried out, we can mention that through the reform of the dispatching service, the implementation of information technologies in the operative management of electrical networks within the “Red-Nord” JSC, the company managed to become more efficient, competitive and react faster to the requests received from its consumers.

## **5. Conclusion**

Following the research carried out in this paper, we highlight the following directions for improving the operative management of electrical networks within the “Red-Nord” Joint Stock Company:

a. *Reforming the operational management by means of dispatch service 0,4kV* - This extensive reform will also help reorganize the Central Dispatch Point and Low Voltage Dispatch Points. Currently, a large volume of work for the LVDP dispatcher is the redirection of the teams according to the requests received from consumers and their registration in the operational register, the SAIDI register, etc. After the implementation of the software, the teams in the field must have direct access to the program with requests and depending on the geographical location, but also after the waiting time of the requester (which currently must not exceed 6 hours), the algorithm will propose the next request for execution. On the way to the next request, the electrician who will not be behind the wheel will check the type of typical work that was performed and the materials that were needed to eliminate the disturbance. This would allow the automatic preparation of monthly work execution and material scrapping reports. After the implementation and testing of the software, it will be possible to reform the LVDP in several stages:

- liquidation of LVDP from the offices in Briceni, Drochia, Edinet, Falesti, Floresti, Ocnita, Riscani, Rezina, Singerei and Soroca;

- unification of the low voltage dispatch point in the Balti office, with the physical relocation of Donduseni and Ungheni LVDPs in this office with the following advantages:

- LVDP will be led by one senior dispatcher, two superior dispatchers will be optimized.

- During the night shifts, weekends, and holidays, when the weather conditions allow, there will be two dispatchers on duty and in critical situations it will be possible to increase the number of LVDP dispatchers to 4 to cope with natural weather conditions.

- Taking into account the fact that the technological process of routing through the low-voltage dispatcher is similar and the configuration of the

operative schemes are similar, it will be possible to replace the dispatchers equally.

• Following the change in the organizational chart, but also the physical location outside the offices, it will exclude any emission in the dispatcher's work.

- The unification of CDP with the LVDP and the formation of 4 mixed dispatches of 4x5 people each. The given reform will allow to optimize a senior dispatcher and 2x5 LVDP dispatchers.

b. *The implementation of SCADA 0,4V* – due to the installation of smart meters, the implementation of SCADA 0.4V will provide the possibility to send and record data directly from the site, a fact that will make the work of technicians more efficient, as well as allow the monitoring of the electricity quality indicators.

c. *The implementation of the informational program INTELTEH* - Information system for technical records that allows planning and recording of the scheduled activities, work permits, etc. and interconnection with other SCADA/OMS information systems, electricity records, processing requests received at the 24h Service desk, etc. The implementation of the program will offer multiple possibilities for the efficiency of the CDP service such as:

- ❖ Planning scheduled works/activities in the offices (10 and 0,4kV);
- ❖ Approving the works and their control by the head of the technical group of the district office and the CDP on hand engineer;
- ❖ Advance notification by the 24h Service of end consumers about disconnections, according to the works introduced and confirmed;
- ❖ Retrieving information from the SCADA/OMS system and recording actual disconnections in the database;
- ❖ Calculation (as necessary) of compensation in case of non-compliance with the provisions of the Electricity Quality Standard;
- ❖ Evidence of the electronic register of the work authorization, with the application of electronic signatures;
- ❖ Evidence of the Electronic Register of defects and their withdrawal for repair (CDP, LVDP);
- ❖ Automatic formation of the Technical Passport of electrical objects, using the information stored in the GIS system (MAPINFO);
- ❖ Forming different reports.

We believe that these recommendations will help the “Red-Nord” JSC to make the operative management of electric networks more efficient and to record a higher level of recorded performances.

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