THE IMPORTANCE OF HUMAN RESOURCES FOR COMPANIES WITH ENERGY PROFILES AND THEIR INFLUENCE IN RAISING THE OPERATING EFFICIENCY

Fisnik Osmani

University of Mitrovica, Faculty of Mechanical Engineering and Computers,
Address: Fabrika e Akumulatorëve, 40000 Mitrovica, Kosova
E-mail: fisnik.osmani@umib.net

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ABSTRACT

Human resources are the most important part of the operation in an enterprise. Based on this logic, companies must continuously invest in increasing the performance of internal capacity through the creation of their strategies which will define clear developing objectives. Enterprises, be it large or small companies, private or public, especially companies with energy profiles such as power plants or district heating, to offer their services, an internal organization of a high level is needed. This arrangement inevitably must include human resources. In our case, we have analysed the functioning of District Heating "Termokos" in Pristina, which for a year now operates with a new system of providing thermal energy - cogeneration project. Of course this also requires changes in the functioning of the enterprise reorganization, since we are dealing with the creation of new departments which require qualified and professional framework. During the analysis, we will focus on current data that we have from District Heating. To process the data we are using recognized statistical methods and similar models through which we will give our recommendations, for better functioning of the enterprise

Keywords:
Energy, Human resources, Enterprise, Management, Cogeneration Project

1. INTRODUCTION

Every organization, large or small, especially companies with energy profiles as District Heating or Power Plant, use a variety of capital to make the business or their services work. Capital includes cash, valuables, or goods used to generate income for a business. For example, a retail store uses registers and inventory, while a consulting firm may have proprietary software or buildings. No matter the industry, all companies have one thing in common: *they must have people to make their capital work for them*.

Human resource management (HRM) is the process of employing people, training them, compensating them, developing policies relating to them, and developing strategies to retain them. As a field, HRM has undergone many changes over the last twenty years, giving it an even more important role in today's organizations. In the past, HRM meant processing payroll, sending birthday gifts to employees, arranging company outings, and making sure forms were filled out correctly—in other words, more of an administrative role rather than a strategic role crucial to the success of the organization.

From different kinds of definitions, one of the most simple and precise ones is "Human resource management is an attraction, development and work maintenance process to support the organizational mission, objectives and strategies" (J.Schermehon,2001), related to this base we are talking about a process which requires devotion, treatment and empathy.

The focus of this work is the proposal how to reorganize the functioning of a company with an energetic profile/ district heating. This reorganization with contain the suppression/modification/creation of new departments from the company, in order to raise the management of capacities of the human resources. We will build new models to show how a company needs to function, and how it needs to orient when it comes to the same kind of development by raising human capacities.

2. HYPOTHESIS

The managers of companies with energetic profile have not yet gained the level of awareness for the importance of human resource management. Based on this hypothesis we have built the basic pillar from which our work have been organized, which also relies on the relying hypothesis, in which the most spread model in organizations of this profile is made to be a traditional /administrative model. In neither of the phases even if the company had a change or a development, it's concept for human resource management was never changed.

3. METHODOLOGY

We have used a methodology which consists a combination of primary and secondary sources. A considerable amount of secondary sources was secured through using electronic resources, different university libraries and relevant literature. While when it comes to primary sources, we have used internal company information from which we have built our own proposals to change the human resource management. We have used information from the form of organization and human resource management in companies with energetic profile, in our case the city heating, an organization which results to be a traditional one.

To analyze the model of human resource management which companies with energetic profile /city heating use, and to fulfill this comparative study, based on the actual situation we have given some discussions and analysis related to the actual operation of the heating. All this happens specifically because of the same one has entered in the new phase of its function, with the start of thermal energy production with cogeneration - a combined production of electrical and thermal energy.

4. CASE STUDY - DISTRICT HEATING PRISHTINA, CURRENT SITUATION

Our district heating has 213 workers in total. All the workers of all departments are included in this number. In technical operation part, in the department of Distribution and Production of thermal energy, approximately 70% of the workers are included. Normally this situation continues to be the same even after the implementation of the co-generation project. From now on, the functioning of the heating with combined production of energy has taken a new track, which will necessarily ask for reorganization / restructuring of staff functioning. This reorganization will affect two technical departments the most, distribution department and production department, since after insuring most of the thermal energy, heating will face stable production to our clients.

To raise effectiveness of our company, within the reconstruction of technical departments, there will be new positions created.

Our case study - The city of Pristina has an installed thermal network for supply of district heating which was built during 1970s. Until now as a source for production of heating energy were used heat only boilers which operate on heavy oil with a low heat combustion H_u=36.000 kJ/kg, but now the entire thermal energy is produced through the cogeneration system - combined heat production. The system has a total of 69942m of pipeline and 3250m^3 of water in the network. (Data from archive of District Heating "Termokos")

Being in a difficult financial situation, the District Heating of Pristina was unable to provide service to its customers due to a high price of heavy oil which was €680/

ton, making it a burden for the budget of Municipality and Government of Kosovo. Why did this happen? A one day operation with reduction cost Termokos €68.000/ day only for purchase of heavy oil, without including other operation expenses. Now, there was only one possibility and that was to implement the cogeneration project and offer stable heat supply to customers with lower/affordable cost.

"The main advantage of cogeneration - the highest overall efficiency for the conversion of fuel to heat and electricity - is the reason the new solutions and improvements are putting cogeneration units in new roles, faced with challenges to contribute to global energy and environment goals" (*Jozef Stefan Institute "Cogeneration Case Studies Handbook", Energy Efficiency Centre (2011), Ljublana)*

"Implementation of these priority investments would help achieve the following targets: reduction of water loss by around 50% of the current level, lowering of CO_2 emissions -86.500 ton/yr., electric energy savings - 500 MWh/yr., increased operation safety and supply security, Reduction of technical loss, Reduction of interruptions as a result of failures in the network, Facilitation of consumption based billing, Improvement of the quality of heating. Improvement of the reputation of Termokos, Reduction of customer complaints, Improvement of the collection rate, Distance monitoring and control of heat, Possibility of remote control/regulating the quality of heat from the central heating plant". (Infrastructure Project Facility Technical Assistance Window (IPF TA) Western Balkans)

Now, after successful project implementation, begin the first challenges of managing. Of course to operate with such systems should have, the professional staff , young staff that guarantees greater stability. So is District Heating ready for these challenges?

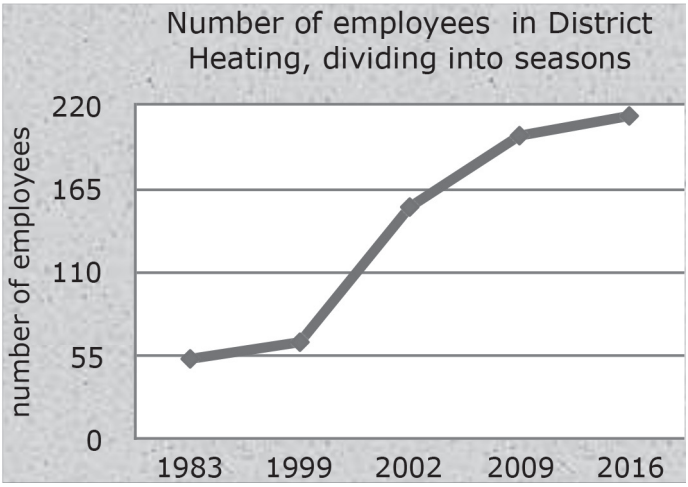
Knowing that, the staff has a relatively old age. Enterprise is overloaded with employees. Employment after the war mainly conducted in political criteria, unfortunatly to excluded professional standards. All these are dilemmas that rightly raise when discussing the company with readiness.

5. RECONSTRUCTIONING OF DEPARTMENTS, THE IMPACT IN THE FUNCTIONING OF THE COMPANY

After the establishment of the heating in the 70's, the numbers of the workers has changed constantly. This growth has not necesserily happened based on the real needs of the company, in the growth of efficiency in the services offered. Graph (Fig.1) presents the difference of how this number has changed through years.

When it comes to needed restructuring which should be made in a company, we have proposed to create new departments;passivization of one of the existing departments and the engagement of the new qualified staff by matching it to the new form of company operation.

Figure 1.: Number of employees in District Heating

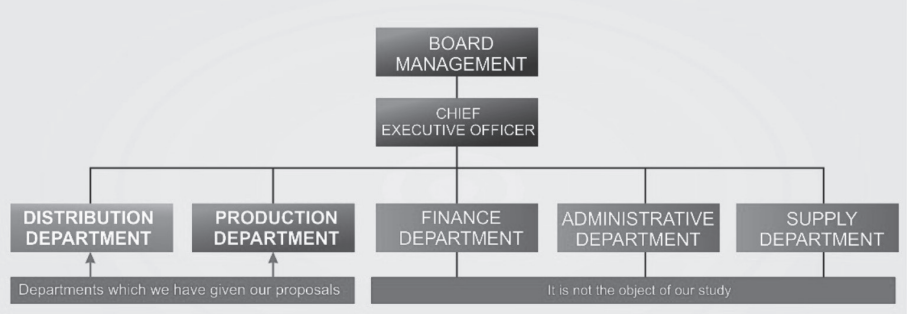


Source: Authors'

Recontructioning should raise the efficiency and effectiveness of the company by interferring in the two main departments: Distribution department and Production/ Co-generation department. In the Distributing part we should aim to stable the loss in that branch, maintain thermal substations and communication progress. In Production/Co-generation part there should be precise positions defined proposed in the bottom scheme, since now with this new form of energy production some positions should be left passive and the same ones should pass through co-generation part.

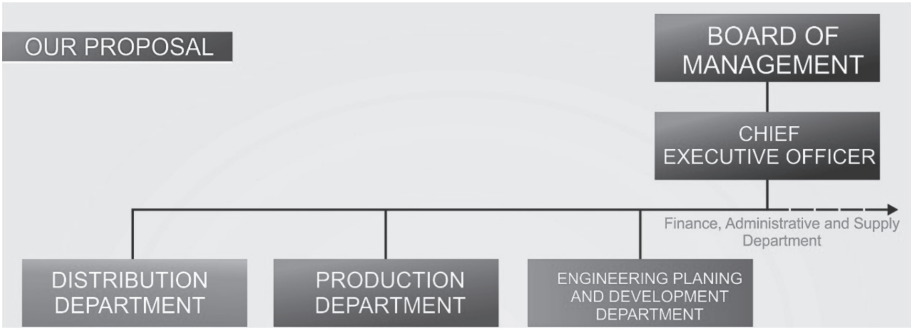
Engineering Planing and Development Deprtment, a deparment which does not exist at all in the scheme of enterprise, is proposed to be created and to have a big impact. This department should be the mechanism which creates developing strategies for technical planning inside the company. Designing of professional technical - economical projects, designing of strategies for capital investments to proposing needed inovative and contemporary projects.

Figure 2.: DH scheme before the Implementation of the cogeneration project



Source: Authors'

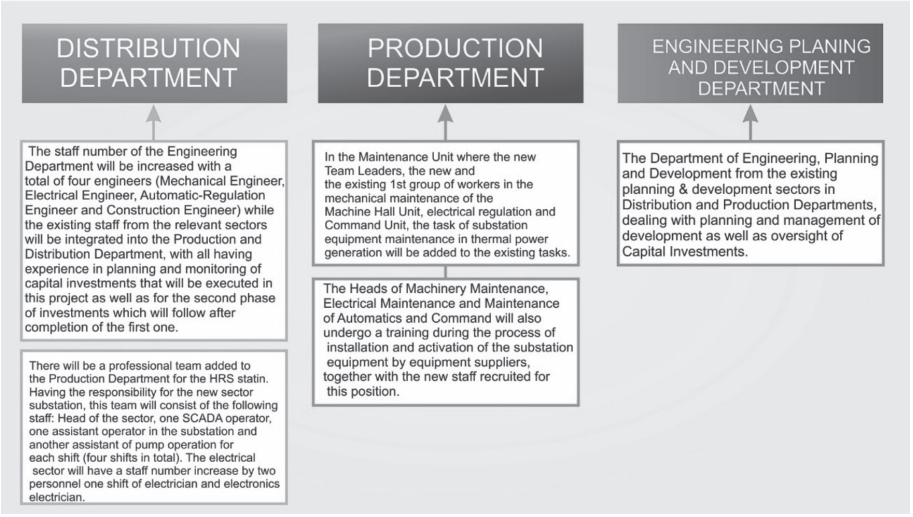
Figure 3.: Changes that we have proposed dealing with the part of the technical organization.



Source: Authors'

Figure 4.: Changes that we have proposed dealing with the part of the technical organization.

Source: Authors'



The substation at the TPP Kosovo B will operate within the framework of TPP Kosovo B without any requirement for change or expansion of the Organizational Scheme.

Operation and Maintenance at the TPP Kosovo B substation will be performed by the existing KEK Operation and Maintenance units.

Organizational scheme does not require any immediate changes. Although, the Operation and Maintenance units need to be supported with additional staff which is expected to be transferred from other TPP Kosovo B departments.

New and existing employees in the position of Assistant Operator on the Outside Buildings, apart from the existing tasks, the task of operation of substation equipment in thermal power generation will be added according to instruction given from the producer of equipment.

The same applies for the Maintenance Unit where the new Team Leaders, the new and the existing 1st group of workers in the mechanical maintenance of the Machine Hall Unit, electrical regulation and Command Unit, the task of substation equipment maintenance in thermal power generation will be added to the existing tasks.

The Heads of Machinery Maintenance, Electrical Maintenance and Maintenance of Automatics and Command will also undergo training during the installation and activation of the substation equipment by equipment suppliers, together with the new staff recruited for this position.

It is recommended to organize a one week workshop for the new Team Leaders with a similar equipment unit elsewhere in Europe, in accordance with the producers of the equipment in the Maintenance Unit.

The Department of Engineering, Planning and Development - from existing planning & development sectors in Distribution and Production Departments, dealing with planning and management of development as well as oversight of Capital Investments.

There will be a responsible team added at the Production Department for the DH Termokos substation. Having the responsibility for the new sector substation, this team will consist of the following staff: Head of the sector, one SCADA operator, one assistant operator in the substation and another one assistant pump operator for each shift (four shifts in total). The electrical sector will have a staff number increase by one shift of electrician and electronics electrician. The existing operation and maintenance staff of the steam boilers will assist as required the substation staff whenever necessary.

The staff number of the Engineering Department will be increased with a total of four engineers (Mechanical Engineer, Electrical Engineer, Automatic-Regulation Engineer and Construction Engineer) while the existing staff from the relevant sectors will be integrated into the Production and Distribution Department, with all having experience in planning and monitoring of capital investments that will be executed in this project as well as for the second phase of investments which will follow after completion of the first one.

To all the existing staff in the Production Department, from the position of the Head of Department to the position of physical employee, the position of Operation / Maintenance of the DH Termokos substation equipment will be added to the job descriptions.

For the operators in the SCADA room it is necessary to organize training according to manufacturer recommendations in a similar working environment, where similar equipment is installed. For the new electricians and assistants, operators and existing employees, such training should be organized during the equipment assembly in the DH Termokos substation from the equipment suppliers.

6. STEPS THAT NEED TO BE TAKEN

To raise the efficiency of human resources by all means there need to be concrete actions which the company needs to take, actions which are missing for a long time. There has to be a detailed strategy including the part of real executions which have to precede these steps, knowing that a series of acts within a process are requested to be involved. Changes which need to be made ask for the will power of those responsible, considering that in some important sectors which will have an impact in company's further functioning there are some interventions which need to be taken.

Until now, there are no concrete actions undertaken in the function of reconstructing the company, in order to raise the efficiency of human resources. Without a doubt there these actions should not be delayed, considering the good situation in which our company is, in a sense of improving the supply of thermal energy.

Application of changes in the scheme of functionality will surely raise company's efficiency in two important departments, the ones for production and distribution. These two sectors bear the main burden of the company in all aspects including the generation of the income within the company. Eventual moves of the staff in these two parts will bring new energy and professionalism.

7. CONCLUSION

The role of human recourses in stable thermal energy supply has a substantial importance, starting from the creating of its politics and their empowerment.

Enterprises in general, but especially those with profile engineering / energy they need to prepared within the top level, to be competitive with global market.

Enterprises should invest unsparing in their capacity for advanced and customized resources that possess with market requirements. Today, engineering enterprises do not possess the necessary framework to provide quality services. Their framework is the average age despite qualification; they have the lack recognition of foreign languages, advanced manipulation programs etc. Of course, as in any country in transition after a war, there are difficulties in establishing order and development. Of course this also contributes to employment in public companies / state, becoming placements in the party political basis, without professional criteria. These situations cause major problems in the efficiency of enterprises, thus hampering the provision of services.

Management of enterprises should take care of their staff. How to do it? This can be done by investing in capacity building within the framework, conducting training, home and abroad, investing in the performance of expertise and specialization. Also the enterprise should treat especially engineer's asunder deficit. Management should create policies to the staff, and clear strategy to recruit their staff, as we know is difficult to create an engineer.

REFERENCES

Kristen B. Frasch, David Shadovitz, and Jared Shelly, *"There's No Whining in HR,"* Human Resource ExecutiveOnline, June 30, 2009, accessed September 24

Leigh Rivenbark, *"The 7 Hidden Reasons Why Employees Leave,"* HR Magazine, May (2005), accessed October10, 2010

District Heating *"Termokos" JSC Prishtinë - Data from archive of D.H "*Termokos"(schemes of principle operation and information materials)

The European Union's 2008 IPA Programme for Albania,Bosnia and Herzegovina, Croatia,the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo (under UNSCR1244/1999) and Turkey Infrastructure Project Facility Technical Assistance Window (IPF TA) Western Balkans Feasibility Study Report June 2010 -March 2011

Peter Cappelli, *"HR Implications of Healthcare Reform,"* Human Resource Executive Online, March 29, 2010,accessed August 18, 2011

William P. Webster, *"Maintaining Quality Relationships between Labor and Management,"* NationalProductivity Review, Spring (1997)

Cedric Herring, *"Does Diversity Pay? Racial Composition of Firms and the Business Case for Diversity" (paper presented at the annual meeting of the American Sociological Association,* Montreal, Canada, August 11, 2006), accessed May 5, 2009

Scott E. Page, The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies Princeton, NJ: Princeton University Press, (2007)

William J. Holstein, *"Diversity is Even More Important in Hard Times,"* New York Times, February 13, 2009, accessed August 25, 2011,

Roy Adler, *"Women in the Executive Suite Correlate to High Profits,"* Glass Ceiling Research Center.

J. Richard Hackman and Greg R. Oldham, *"Motivation through the Design of Work: Test of a Theory,"* Organizational Behavior and Human Performance 16, no. 2 (1976)

W. P. Carey, *"Employees First: Strategy for Success,"* Knowledge @ W. P. Carey, W. P. Carey School of Business, Arizona State University, June 26, 2008, accessed July 11