

Energy efficiency and the Role of Energy Managers

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Abstract

The level of energy efficiency, as a measure of rational use of energy resources, can reveal considerable inconsistencies in the use of available energy-generating products, whether they come from alternative or traditional sources. The implementation of energy efficiency measures and the completion of prescribed tasks by energy managers can greatly influence the level of energy efficiency of local public administrations.

The state of the environment warrants the implementation of the energy efficiency measures that would encompass the reconstruction and insulation of public buildings. The energy efficiency program should essentially pave the way for more efficient energy use. The proposal for how to implement the measures and how to finance them should be made in consultation with the energy manager if one has been appointed.

Keywords: energy management system, tasks of energy managers, local self-government units

Introduction

Energy efficiency is a term that primarily refers to the application of more efficient ways of utilizing energy, accompanied by the prescribed measures of energy efficiency. The concept can also include energy conservation measures, but only as a goal of rational use, without necessitating a diminished comfort of living.

A major goal of energy efficiency is to reduce the energy losses through the use of modern technology. The management of energy efficiency, as a part of energy flow management in local self-government units, is an important step in the analysis of the real-world situation. If a problem is identified in the operation of he energy management system, it can indicate a lack of preparedness of local self-government representatives to find the ways to save money by increasing the level of energy efficiency. The positive aspects of using an energy management system also include the environmental effects, because reduced consumption of energy resources helps reduce pollutant emissions. Local selfgovernment units are attempting to reduce energy consumption, although they use measures that are not the result of the systems approach and the analysis, but priorities chosen according to the opinions of individuals.

Energy management system

Adherence to the energy efficiency principles [1] also depends on the level of social responsibility, economic development, and the standard of living. Scientific and technological innovations provide a good foundation for a more efficient consumption of energy resources as well as final energy. Higher energy efficiency offers environmental benefits, as well, such as reduced environmental thermal stress and lower pollutant concentrations. Other, but by no means less important, goals include improving energy security, meeting the energy needs, and achieving longterm financial savings.

The role of energy managers

The energy management system, as the basis of energy flow management, is an organized management system within which energy managers perform their legally defined duties. One of the primary goals of this system is to help provide the highest possible level of energy efficiency and the foundation for a more favourable designation of energy indicator values. The structure, complexity, and scope of the energy management system depend on the level at which it is established (national, regional, local, company, or individual building). The basic elements of this system, which are also parts of the organizational system.

Energy managers have to facilitate a high level of cooperation, which is why they need to possess good communication skills in addition to their technical expertise.

Energy managers as the elements of organizational capacities: - energy manager education and licensing readiness of energy managers to perform their designated tasks ability of energy managers to implement the proposed energy efficiency measures a real foundation based on project management

experience of the energy managers

Tasks of the energy manager

- Participates in the analysis of proposed energy efficiency measures

Energy efficiency of local public

The energy efficiency programs of local public self-governments comprise the data on heat and electricity consumption per user and per one square meter, which can then be used in comparative analyses. The purpose of such methods is to establish the energy efficiency level in specific cities/municipalities so as to present a realistic picture of how the energy efficiency measures are being implemented. The results of electricity consumption of public lighting provide additional insight into the investment in improving the energy efficiency of public lighting. The present analysis includes the local self-government units given in Fig. 8, 9 and 10.

The comparison of heat consumption shows that public buildings consume the most heat per one square meter in Varvarin and Velika Plana [7,9], whereas Kragujevac consumes the most heating energy per user.

The comparison of the presented results shows that the city of Kragujevac [8], which is also the biggest consumer of electricity, has the highest consumption per 1 square meter in terms of public buildings. Interestingly, the municipality of Nova Varoš [7] has the highest electricity consumption per user even though it has the lowest consumption per one square meter. The comparison of public lighting electricity consumption shows that Kragujevac and Bečej consume the most electricity per luminary, while Bečej and Varvarin [9] are the biggest consumers per user.

The role of energy managers should therefore be defined as clearly as possible, because the issues to be resolved are only accumulating, especially considering the fact that the energy efficiency in local self-government units is considerably below the European average.



Energy costs are covered by the budget, which is why there is a common tendency to only reduce the cost, while entirely disregarding energy efficiency.

	Cooperatio	on between	the energy manager an	d the Energy Board	
(Period	dical) reporting by	the council	person for energy about t	he funding of energy rec	quirements
Preparation of the energy consumption report			Energy cost analysis		
Creation of the energy consumption report			Creation of the report on the cost of energy consumption		
	Subr	nission of a	nnual reports to the comp	etent Ministry	
Identii	ification of key ele put	ements for plic buildin	increasing energy efficie gs, and other common u	ncy in public utility co se buildings	mpanies,
Technological capabilities for using renewable energy Rational energy use Need for employee edu					or employee education
	Improvement	of energy ef	ficiency and rectification	of irrational energy use	
Participation o	of energy manage	ers in the cr	eation of key document	ation for energy efficie	ncy improvement
Documents base efficiency mar	ed on energy nagement	Project	ts to reduce traditional en nsumption and pollution	ergy City/muni	cipal energy balance
Energy Er efficiency effi plan pro	nergy Er iciency conse ogram pr	nergy ervation oiect	Project of renewable energy use	Technical analysis in the energy balance	Financial analysis in the energy balance



- Develops energy efficiency programs and projects at eh municipal level;
- Implements energy efficiency programs and projects;
- Regularly visits and inspects buildings at the municipal/city/company level
- Controls energy consumption once a month
- Improves and assesses the technical equipment of
 - buildings
- Specifies the needs for building repairs

Conclusion

program

project

The contribution of renewable energy sources to energy security is reflected in the reduction of import dependence, local character of energy sources, and reduction of pollution and preservation of non-renewable energy sources. Local character leads to diversification and decentralization of energy sources, as well as improvement of life in local communities by increasing the number of available jobs.

Based on applied energy security analysis methods, Serbia is a country with moderate risk. By increasing the use of available renewable energy sources and by increasing energy efficiency, this risk can be significantly reduced.

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