



Energy and environmental management in public buildings in the City of Częstochowa [Poland]

Context

One of the activities significantly improving energy efficiency in Poland is the operational programme "Energy and environmental management in public buildings of Częstochowa City". Through the realization of this programme the City of Częstochowa contributes to achieving national strategic objectives included in the Energy Policy of Poland until 2025 and in the National Energy Efficiency Action Plan (NEEAP) transferred to the municipality level in the "Local Energy Efficiency Plan of Action for the City of Częstochowa" document. The programme is a pilot project that has been prepared according to the structure of NEEAP. Its main objective is the identification of areas in which a reduction of energy consumption is possible, with the main focus being public buildings. The aforementioned document is one of the key elements contributing to making Częstochowa "a city of efficient energy".

Description and Main Objectives

The city of Częstochowa is involved in multiple initiatives aimed at bettering the efficiency of energy use in the public sector. The "Energy and environmental management in public buildings in Częstochowa with the use of Monitoring the Consumption of Utilities System" programme is an important part of the nationwide effort to reach the objectives of NEEAP.

The main goal of the project is increasing energy efficiency in public facilities. In order to achieve this objective, a system collecting and analyzing information on the consumption of utilities has been created in 2003. It enables the verification of data concerning different utilities and their costs in the majority of public facilities of the municipality. These utilities include: electricity, district heating, natural gas, heat and water consumption as well as sewage. The information gathered by the system is stored in an online database where it allows the implementation of efficient energy and environmental management strategies in public buildings.

The main objectives of the programme include:

- Limitation of excessive energy and water consumption
- Equipment regulation and conservation
- Regular control of the terms of agreement settlements and utility agreement actualizations
- Aid in the termo-modernization of facilities possessing the necessary financing



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Implementation Strategy

The implementation of the programme was done by the employees of the Office of the City Engineer and the employees of the computer science department. They targeted the local authorities, public facilities' users and managing assets of the municipality, who participated in the numerous parts of the programme. Firstly, the analyses and reports concerning the consumption of all utilities in public facilities of the Częstochowa Municipality were collected. Then the collected data was checked for consistency, validated and integrated in an online system database. This has allowed for a quick generation of reports concerning the consumption of utilities and their costs at particular facilities, which in turn led to positive financial and environmental consequences.

The programme has already been successfully implemented in numerous facilities in the city. Up to 2010, 120 public facilities in the city have decreased their energy consumption, CO₂ emission and water usage. What is more, the programme has also increased the environmental awareness of the facilities' employees and users. Not only has this led to reducing the consumption of utilities in numerous facilities but also allowed the municipality to achieve significant financial savings.

The financial savings resulting from the programme included:

- Approximately 350 thousand PLN in 2009
- Approximately 1370 thousand PLN in 2010
- Approximately 2150 thousand PLN in 2011
- Approximately 2700 thousand PLN in 2012
- Approximately 4100 thousand PLN in 2013
- Approximately 6000 thousand PLN in 2015
- Approximately 5800 thousand PLN in 2016

What is more, the following results were achieved in 118 educational establishments:

- Reduction of energy consumption by 196 384 MWh
- Reduction of CO₂ emission by 83 389 tons
- Reduction of water consumption by 678 931 m³

The programme is still being implemented and further savings in energy consumption are predicted.

Time Frame and Financing and Costs

The programme started in 2003 and is still being carried out. The initial costs of the "Energy and environmental management in public buildings of the city of



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Częstochowa” project amounted to 6 557 PLN net (which equals 1485.97€ with the 0.23 EUR/PLN Rate).

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