

REGIONAL USE OF EUROPEAN FUNDS IN MUNICIPAL WASTE MANAGEMENT IN POLAND

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ABSTRACT The level of management of municipal waste management has a very real impact on life. Consequently, this can be associated with high risks both locally and globally. Thanks to the use of modern solutions for the management of municipal waste, the level of impact of municipal waste on the environment can be significantly reduced. However, modern solutions are associated with the high cost of building the plant and the whole system for managing the management of municipal waste. In addition to costs, the level of awareness of the people, their habits, traditions and education, is vital for improving the situation. Article aims to explore and familiarize use of European funds in the management of municipal waste in Poland. Will examine the distribution channels of these measures. The article will present three projects co-financed from European funds implemented by one of the Regional Installation of Municipal Waste Treatment.

Introduction

Municipal waste management is very important both for the natural environment and its proper protection, as well as for the comfort of life of the inhabitants. The hazards of improper waste management can be local, regional and even global. In the European Union there are effective solutions obliging Member States to adhere to very high standards and at a certain time of their performance.

In accordance with Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives, the hierarchy of waste management, in particular municipal waste, has been introduced in European Union countries (Directive..., 2008). Its aim is to reduce the amount of waste generated and manage it to reduce its negative impact on the environment. Legislation and management of municipal waste management should be consistent with the following hierarchy: prevention, preparing for re-use, recycling, other recovery, e.g. energy recovery; and disposal (Antosiewicz et al., 2017).

High limitations were introduced in the amount of waste deposited in relation to the quantity of generated waste (Council Directive..., 1999; Directive..., 2006). They caused the necessity to adapt the existing municipal waste management systems, especially in the case of countries with considerable arrears in this area. One of such countries was Poland, which has made significant progress in recent years. It was necessary to carry out significant investments for this purpose. Currently, some regions in Poland can boast of using modern solutions in this area. Many of them were created thanks to co-financing from European funds. All the time, however, there is a need for further development of installations for waste management and infrastructure for this service. Continuous investment in regional development and striving for sustainable development are consistent with development strategies adopted at both national and provincial levels. It is also necessary to educate the society in the field of ecology, including the reduction of waste generation, their segregation and recycling (Wysocki, 2016).

The European cohesion policy and the special role of EU funds have been reflected in the financing of the regional economy also in the municipal waste management. Investments that were made possible thanks to the support of EU funds allowed for the equalization of differences in individual regions in Poland in the field of municipal waste management. They also allowed Poland to get closer to the restrictive requirements imposed by Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste and further requirements.

In recent years, many enterprises dealing with municipal waste management have received financial support from European funds. Thanks to this, waste installations have been equipped with modern solutions for sorting, composting and thermal waste treatment, among others (Staszewska, Pawłowska, 2011). In this study, will be presented investments co-financed from European funds of one of these enterprises in the Silesia province – Częstochowskie Przedsiębiorstwo Komunalne Sp. z o. o. in Sobuczyna (CzPK). Currently, the company has a large area of 128 hectares for waste management activities and has the status of the Regional Municipal Waste Treatment Plant (RIPOK).

Construction of the Waste Management Plant

Project “Construction of a Waste Management Plant at Częstochowskie Przedsiębiorstwo Komunalne Sp. z o.o. in Sobuczyna”, issue number 701200-147, was implemented as part of the Integrated Regional Operational Program 2004–2006 (IROP).

This investment was co-financed from EU funds in the amount of PLN 14,243,925 net, while the entire construction cost amounted to PLN 19,984,569.75 net (<http://www.czpk.czestochowa.um.gov.pl>). The funds obtained for co-financing this investment allowed the owner to build a modern installation. The investment lasted from April 20, 2006 to November 21, 2008 (<http://www.fe.czestochowa.pl>).

The IROP’s strategic goal was to provide equal opportunities and create conditions for increasing the competitiveness of regions. By counteracting marginalization of particular areas of activity, subsidies favored the

long-term economic development of the country, with particular emphasis on the economic, social and territorial cohesion of the European Union.

Construction of the plant has allowed the realization of investments, which are now a necessity forced by these directives. As part of the construction was established a modern sorting plant for municipal waste with a capacity of 30,000 Mg per year for one shift with the possibility of three-shift operation. This sorting plant is partially automated and during construction it was one of the most modern installations of this type in the country. In addition, an open waste composting plant with a capacity of 20,000 Mg per year was established.

In addition, two stations were built on the site:

- demolition station for large-size waste with a capacity of 10,000 Mg for a year,
- construction debris crushing station with a capacity of 15,000 Mg per year.

In addition to the aforementioned objects there was also created municipal hazardous waste collection point. It had a capacity of 1,000 Mg per year.

The construction of the Waste Management Plant was an investment that could be carried out only thanks to the support of the European Regional Development Fund under the Integrated Regional Operational Program 2004–2006.

Ultimately, the facility served sub region of Częstochowa – Częstochowa city and districts of Częstochowa and Myszków, which accounted for about 400,000 inhabitants. Before the establishment of the plant, almost the entire municipal waste stream went to the landfill without prior treatment, which was inconsistent with the ideas of sustainable development (Wysokińska, Witkowska, 2016).

The exception was the waste collected separately by residents and collected by a specialized company. As a result, the construction of the Plant improved the condition of the natural environment, especially in the immediate vicinity of the landfill (Lorek, 2015). The change in the method of waste management also extended the operation of the landfill by reducing the waste stream going there. There was also a visible revival of entrepreneurs in the field of waste management, thus creating new jobs. In total, thanks to investment, the quality of life of residents improved, and the way waste was managed was in line with EU directives.

Expansion of the Waste Management Plant

Project “Expansion of the Waste Management Plant for the Northern Sub-region of the Silesian Voivodship” with the number POIS.02.01.00-00-002/08 is another project co-financed by the European Union. It obtained support from the Cohesion Fund under the Operational Program Infrastructure and Environment.

The investment commenced on November 9, 2010, signing the contract for co-financing from the Cohesion Fund.

Thanks to the co-financing received in the amount of PLN 17,840,788.26, CzPK realized the investment of PLN 54,468,722.07 net. The plant with the status of a Regional Municipal Waste Treatment Facility could thanks to this investment adjust the way it functions to the growing European requirements. European funds deposited in CzPK allowed for solving many ecological problems in the northern region of the Silesian Voivodship. In addition, on May 29, 2013, an agreement was signed with the National Fund for Environmental Protection and Water Management for co-financing of this project in the form of a preferential loan for PLN 20,025,580 net (<http://www.czpk.pois.czestochowa.pl>).

The entire investment consisted of three tasks.

The first task was the technical closure of the first component quarters. This plot has been in operation since 1987, has an area of 16.8 hectares and about 3 million Mg of waste has been accumulated there. Thanks to this investment, the natural environment was secured by making and sealing the housing cover. This action has provided protection against the negative effects of rainwater and the effluent formed after the water has filtered through the waste. Such an investment is always necessary when the capacity of the quarter ends and the waste deposited on it must be properly secured in order to reduce the negative impact on the environment.

The second investment was the construction of quarter number two (the first stage). The result of this task is a new storage unit with a usable area of 2.6 hectares. It was made in accordance with applicable regulations and has, among others, drainage and synthetic seal. The technologies used in the construction of the headquarters meet all applicable standards. This ensures that full environmental safety will be maintained during the operation of the quarter. The estimated period of exploitation of the newly created quarter is about 17 years – depending on the size of the waste stream and the solutions applied for sorting and recovery of secondary materials from the stream of mixed municipal waste.

The third task was to build a composting plant in closed technology. This investment allowed full adaptation of the regional installation to the European Union standards. At the compost plant, the waste will undergo intensive aerobic composting under hermetic and controlled conditions in reinforced concrete bioreactors. Thanks to the use of closed technology, the odor character of the landfill will be significantly reduced by eliminating odor from the composting process. Gases produced as a result of fermentation in bioreactors are cleaned, and if necessary, they are automatically burned. The composting plant ensures 100% air protection against possible pollution, and for residents of the nearest to the landfill – it will improve the quality of life (Kowalak, 2014).

The investment for the extension of the Waste Management Plant, consisting of three tasks: the closure of the first quarters, the construction of the second quarters and the construction of a composting plant in closed technology was possible thanks to subsidies from European funds. Almost a third of the total investment costs were covered by the subsidy. It made CzPK adapt its infrastructure to the requirements of the European Union and still met the requirements of installations with a regional status. The implemented solutions result in a positive ecological effect. The sealing of the first quarters led to a significant reduction in the amount of leachate formed. The other unit, which will be used for at least a dozen or so years, meets much higher standards, among others due to its tightness and lack of leakage of the leachate to the ground. The transition to the use of the second quarters resulted in a significant reduction of the environmental impact throughout the entire landfill. The creation of a modern composting plant contributed primarily to the improvement of air protection by closing the fermentation of waste in closed bioreactors. The whole project thanks to the use of BAT (the best available technique) will ensure the safety of the waste management system. All natural and landscape values have been secured in the region, and the negative impact of the landfill on the natural environment has been minimized.

A system of selective waste collection

The third project discussed in this paper is „A system of selective waste collection in the Northern Sub-region – the City of Częstochowa” with the number UDA-RPSL.05.02.00-00-042/09-00. The project was co-financed by the European Union from the European Regional Development Fund under the Regional Operational Program of the Silesian Voivodship for the years 2007–2013. The project began on August 26, 2010 by signing the contract for the

implementation of the project with the Marshal's Office at the Regional Development Department in Katowice. The value of the entire project was PLN 5,843,425.22 net, while the value of EU funding was PLN 3,454,158.76 net.

The whole project consisted of three tasks:

- 200 local points (sockets) for selective municipal waste collection were created, each containing three containers for paper, glass, and plastic and metal in total,
- five hook containers were purchased for biodegradable waste, placed in various districts of the city of Częstochowa, for the free collection of green waste,
- SPSZOK was built – Stationary Point of Selective Municipal Waste Collection in Sobuczyna.

SPSZOK is a comprehensively equipped facility, which is adapted to collect and temporarily store municipal, hazardous and large-scale waste. Every resident of the city of Częstochowa can deliver segregated waste on its own. The scope of this waste includes: renovation waste, metals, glass, green waste (biodegradable), bulky waste, plastics, used tires, car windscreens, used electrical and electronic equipment, hazardous waste, foil and waste paper.

The project was also carried out a promotional campaign and education in the field of selective waste collection (<http://www.edu.czpk.czest.pl>). Both of these actions were aimed at making the public aware of the importance of correctly conducted separate collection of municipal waste and what benefits it brings to the natural environment. An important element was also to pay attention to hazardous waste (such as batteries, medicines, bulbs, etc.) and not to put them in the stream of mixed municipal waste.

The effects of this project are the most noticeable for the residents, because its effects are closest to the residents. Thanks to these investments co-financed from European funds, the residents' access to the infrastructure enabling separate waste collection has significantly improved. Thanks to the installation of 200 sockets for selective waste collection for three containers in each (for paper, glass, plastic and metal in total), it is easier for residents to hand in selectively collected waste, because the waste disposal points are closer to their place of residence. An additional possibility of giving free quantity of sorted waste free reduces the number of wild dumps. All activities gives positive results for the environment and improves the comfort of living.

Conclusions

Handled correctly, municipal waste management, can significantly affect the improvement of quality of life. As part of the activities related to the European cohesion policy, particular attention is paid to the appropriate regional development and reduction of differences between individual regions. To this end, subsidies have been used over the years, which primarily support the construction or modernization of infrastructure or conducting educational campaigns.

In the European Union, waste management is strictly regulated by the directives and all Member States have the duty to adapt their legislation and thus also waste management systems and achieve an appropriate level of recycling at a specific time (Grabas, 2015; Nowak, Ulfik, 2017). In Poland, these changes were initiated in 2011 by the introduction of legal regulations that changed the current approach to waste issues. From 1 January 2012, regulations introduced by the Act of 1 July 2011 amending the act on maintaining cleanliness and order in municipalities and certain other acts became effective. The most important change concerned the approach to ownership of waste. They have become the property of municipalities, and residents are required to pay the appropriate fee (Ulfik, 2016).

Since then, all residents stopped individually enter into agreements with companies receiving waste. They were also forced to adapt to the system adopted in the municipality in which they live. In subsequent years, further legislative changes were introduced, aimed at adapting the waste management system to the requirements of the European Union. All these changes required a wide-ranging educational campaign and numerous investments in infrastructure.

The investments co-financed by European Union funds, contributed to a significant improvement of the situation of waste management in the area served by a regional installation in CzPK.

References

- Antosiewicz, M., Bartkiewicz, P., Matejczuk, A., Kalinowski, H., Ośka, M., Regulski, A., Zawistowski, J. (2017). *Jak państwa UE-15 korzystają z realizacji polityki spójności w krajach Grupy Wyszehradzkiej?* Warszawa: Ministerstwo Rozwoju.
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives (2008).
- Grabas, M. (2015). *Waste management*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
- Kowalak, R. (2014). Kluczowe mierniki dokonań w zakładach gospodarowania odpadami. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 329, 180–190.
- Lorek, A. (2015). Ocena systemu gospodarki odpadami komunalnymi województwa śląskiego w opinii konsumentów. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 232, 113–123.
- Nowak, S., Ulfik, A. (2017). *Sustainable management of municipal waste in the context of globalization on the example of EU countries* (pp. 1781–1787). 17th International Scientific Conference: Globalization and Its Socio-Economic Consequences: Proceedings, Rajecke Teplice, Slovakia, October 4–5, 2017. University of Zilina, The Faculty of Operation and Economics of Transport and Communications, Department of Economics, Rajecke Teplice.
- Staszewska, E., Pawłowska, M. (2011). Characteristics of Emissions from Municipal Waste Landfills. *Environment Protection Engineering*, 37, 119–130.
- Ulfik, A. (2016). Zarządzanie gospodarowaniem odpadami w Polsce w latach 2010–2015. *Przegląd Współczesnych Problemów Zarządzania*, 2, 18–32.
- Wysocki, J., 2016. Strategic approach to proecological activities of companies. *European Journal of Service Management*. 18, 63–69.
- Wysokińska, Z., Witkowska, J. (2016). *Zrównoważony rozwój. Wybrane aspekty makro- i mikroekonomiczne*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
- Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, 1999.
- Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste (2006). Official Journal of the European Union.

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