

# Incentive systems in municipal solid waste management – a 10-year case study of Mikulov district

M. Struk<sup>1</sup>, P. Wercholáková<sup>1</sup>

<sup>1</sup>Faculty of Economics and Administration, Masaryk University, Brno, 602 00, Czech Republic

Keywords: municipal solid waste management, incentives, expenditures, waste separation.

Presenting author email: [struk@muni.cz](mailto:struk@muni.cz)

Municipalities play an important role in solid waste management, as they are the places where people generate majority of their day-to-day waste. Proper waste separation together with the effort to reduce overall waste generation can lead to significant improvements in environmental performance of the municipalities, and subsequently also in the environmental quality. However, one common difficulty that municipalities around the world experience is that while it is the municipality who is responsible for securing waste management services, it is the actual people who generate the waste. Therefore, in order to make people behave more environmentally responsible, municipalities need to find proper approaches how to achieve that, as they way how people behave is naturally beyond their direct control.

One such approach is based on targeted household waste management using incentives. The most well-known approach is Pay-As-You-Throw or PAYT, in which individual households as the basic charged unit pay for waste management services based on how much waste they produce. This system is commonly used in various countries; however, it also comes with certain potential drawbacks, that, in some cases, can outweigh the benefits. If people are charged based on the amount of reported waste, they might get motivated not to report all of their waste and try to get rid of it in other ways instead. Literature lists common strategies like illegal dumping, individual burning, or using public bins. Depending on the state of society in given region or country, such unwanted behaviour might become more apparent.

An interesting and novel approach to avoid this is to set the whole incentive system up in a different way. Let us say that instead of charging for the amount of generated waste, discounts will be provided for better waste separation. System based on such rule changes the perspective of the people significantly, as now the motivation to get rid of waste in an unwanted way becomes much lower or even none. And this is exactly the idea on which municipal waste management system in Mikulov district in the Czech Republic is based on.

We can perceive this incentive system as a sort of “reversed PAYT”, as one, instead of paying per unit of waste, gets money back based on achieved level of certain measured indicators related to waste management. These indicators include primarily ratio between residual and separated municipal waste, but also household composting, efficient use of waste bags and waste bins, or environmental choices when shopping. Depending on the size of the family/household representing the evaluated unit, certain intervals of performance are defined, based on practical experience and not just theoretical possibilities. Then, if the household behaves accordingly, it is eligible for a significant discount from the standard annual waste management fee level in the subsequent year.

While this incentive system has been implemented throughout the years in dozens of Czech municipalities in the form of contracted service attached to their current waste management, in order to examine the development of the system from its start to the current state, 10 municipalities from a specific district have been selected. These municipalities include both those that were the first to introduce this incentive system in its original form in 2010 together with municipalities that adopted improved incentive system later in the following years. Inclusion of the municipalities that were first to introduce the system offers a unique opportunity to see the gradual development of incentive system from the initial though through the experiences of how people and municipalities respond and subsequently adapt to it. This gradual process shows how theoretical model meets practical applications and to what unexpected consequences can such system lead. As a response of the creator and provider, incentive system has been continuously improved and adjusted in order to serve its original purpose – to improve environmental performance of the municipalities in the field of waste management while ideally not affecting municipal finances in a substantially negative way. Although the implementation of such novel system usually needs some time in order for the people to adjust their behaviour and basically to learn exactly how it works, the results of municipalities after few years appear to be significantly better when compared with the control group of comparable municipalities not using any kind of incentives. And such positive shift in the performance becomes even more desired when facing continuous push towards better municipal waste management results by the central and also international authorities.

The study is based on analysis of body of relevant statistical data including municipal finances and waste generation, together with the additional qualitative input from the original creator and provider of this incentive systems and various municipal authorities that played significant part in proper introduction and communication of this novel approach to municipal waste management to the public. First-hand experience from both the provider

of this service and municipal authorities represents a valuable set of information of how people can respond to incentive systems related to municipal waste management, what is to be avoided, or what proved to be working.

Benefits of this study rely in provision of experiences how to set up an effective incentive municipal waste management system, what are the common mistakes and problems and how to avoid them when introducing such system in a municipality, all while stressing the important aspects that need to be focused on using first-hand experience based on 10-year development and application.