

1.0 Factsheet – Hungary

This factsheet analyses the situation regarding waste management policies and practices in Hungary with regard to municipal solid waste (MSW). The factsheet seeks to identify factors that could make it difficult for Hungary to comply with EU waste legislation. The identified deficiencies provide pointers to measures identified in the Roadmap following this factsheet.

The table below presents data on the Hungarian waste generation and management.

Table 1.1: Basic waste management data for Hungary

Population (Hungarian Central Statistical Office 2015)	
Total inhabitants	9 856 000
Dwelling stock	4 415 000 Occupancy rate 88.5 %
Municipal waste generation 2013 (Hungarian Central Statistical Office 2014)	
Total (tn)	3 712 000
Total (kg/cap/y)	377
Waste composition (The Ministry of Agriculture 2015)	
Organic	22,6 %
Plastic	14,5 %
Paper	12,9 %
Glass	3,5 %
Metal	2,2 %
Other	44,3 %
Recovery rates for packaging waste¹ 2013 (Eurostat)	
Paper and Cardboard	87 %
Plastics	55,5 %
Metal	94,6 %
Glass	32,4 %

¹ Rate of recovery or incineration at waste incineration plants with energy recovery' for the purposes of Article 6(1) of Directive 94/62/EC means the total quantity of packaging waste recovered or incinerated at waste incineration plants with energy recovery, divided by the total quantity of generated packaging waste

Total recovery rate of packaging	60,3 %
Municipal waste management (Eurostat 2013)	
Waste treated	3 738 000 t
Material recycling (% of treated MSW)	21 % (799 000 t)
Composting and Digestion (% of treated MSW)	5 % (188 000 t)
Incineration (% of treated MSW)	9 % (336 000 t)
Waste landfilled (% of treated MSW)	65 % (2 415 000 t)
Existing waste management infrastructure	
Residual treatment plants	<p>1 waste incinerator plant, capacity 420 000 t/year (2014)</p> <p>70 landfills, free capacity 84 056 700 t (2013)</p> <p>Approximately 23 MBT plants in operation, 7 out of order. Capacity 1 193 125 t/year (2014)</p>
Sorting facilities for recyclables	6000 public collection facilities ² , 800 000 t (2014)
Organic waste treatment facilities	Approximately 70 composting plants in operation. 8 out of order ³ (2014) Capacity 250 00-300 000 t/year (2013)
Compliance with Targets	
Data on compliance with landfill directive targets, or distance to target remaining (if target not met)	<p>App. 944 000 t of Biodegradable Municipal Waste landfilled in 2014⁴. To comply with the target (35 % of the amount of BMW landfilled in 1995) the amount should be 820 000 t or less by the year 2016. A reduction of 124 000 t is needed to comply with the target.⁵</p>

² Holdonner P et. al. (2014)

³ Department for Environmental Development , Ministry of Agriculture, 2015-10-27

⁴ Estimation of number

⁵ European Commission (2015) Detailed evaluation report for assessing the waste management plan of Hungary, p. 12

Data on compliance with waste framework directive targets or distance to target remaining (if target not met)

Target 50%
799 000 t went to material recycling in 2013. The Hungarian EEOP states that the rate was 38.5 % in 2013. Distance to target 11.5 %.
Hungary uses Method 2 to calculate the target and expects to fulfill the target by 2020.

The data on landfilling includes material that has been through the MBT system, as no distinction is made in the data between treated and untreated material in the statistics.

1.1 Roles and Responsibilities of Key Actors

1.1.1 The State

As Hungary has no separate Ministry of Environment the environmental responsibilities are divided between several Ministries:

- The Ministry of Agriculture (FM) has the responsibility for waste management. The Ministry has four departments dealing directly with environment and nature protection: Environmental Development, Environmental Conservation, Nature Conservation and Nature Parks. Issues regarding waste management are foremost handled at the Department of Environmental Development. According to the National Waste Management Plan there are two Deputy State Secretaries that have the responsibility to lead and monitor the national waste management system. These Secretaries also develop the general strategy and to prepare regulations to be approved by the parliament.
- The National Council of Environmental Protection is defined as an advisory and consultant body of the Government. The Committee on Sustainable Development of the Hungarian Parliament is the advisory body of the Parliament.
- The Herman Otto Institute (HOI) carries out background studies for waste policy.
- The National Inspectorate for Environment and Nature (OKTF) has the role of regional administration and monitoring/inspection, together with the 11 environmental departments of government offices that issue permits for waste treatment, collection and transportation.
- The National Waste Management Directorate (OKTF-NHI) is a separate unit within the National Inspectorate for Environment and Nature (OKTF) and it has replaced the National Waste Management Agency (Országos Hulladékgazdálkodási Ügynökség, OHÜ) since the first of January 2015. The name has changed, but not the function. The OHÜ was given the executive right to coordinate and control the selective waste management in Hungary in 2012, according to the Law LXXXV of 2011 on the Environmental Product Fee. The main obligations of the new Directorate are still to work to contribute to waste reduction and to organise and manage the waste collection and recycling of those waste streams which fall under product fee

regulation. The Directorate receives state support for the promotion of selective waste management, with the goal to achieve higher proportions and quantities of separately collected municipal solid waste. The Directorate sign contracts with public service providers and give them financial support to contribute to the fulfilment of targets, through public procurements it signs contracts with the industrial partners, recyclers to ensure that the collected materials are treated properly. Further, they carry out waste management campaigns, compile the National Collection and Recovery Plan and are in charge of regional planning.

- The National Tax and Customs Administration is responsible for the registration and control of the companies that are obliged to pay product fees.⁶
- The Hungarian Energy and Public Utility Regulatory Authority recommends national fees for collection of municipal waste from households and these fees are defined by the Minister responsible for National Development.
- The Minister responsible for the environment – the head of the Ministry of Agriculture – operates the Unified Waste Management Information System (EHIR) as the part of the National Environmental Information System OKIR). Data is entered by companies down to site level. The system was established by the former Ministry of Rural Development in order to improve the accuracy of data. Before the system was introduced there were several agents to report to. Data are published annually and are available in Hungarian via <http://web.okir.hu/en/ehir>.

1.1.2 The regions

Regional plans have to be prepared for the jurisdiction area of regional environmental authorities. These regions are not identical with the 7 statistical regions (see Figure 1.1).

⁶ <http://www.szelektivinfo.hu/en/about-us>

Figure 1.1: The statistical planning regions⁷



1.1.3 The municipalities

The municipalities and associations of municipalities are the key bodies responsible for organising the collection and treatment of municipal waste. The 3,155 municipalities⁸ were given a more important role when the Act on Waste was adopted in 2012. However, the municipalities lack adequate tools and infrastructure to be able to carry out this task according to the Environmental and Energy Efficiency Operational Programme 2014-2020.⁹

The operation of collecting and treating municipal waste is pursued by waste-collecting companies which can be public, semi-public or private. From the early 1990s, the municipal waste collection and treatment system of Hungary has gradually been divided between subsidiaries of private companies, a few big municipal companies, small municipal companies owned by towns, villages or cooperatives and joint-ventures between multinationals and municipal companies.¹⁰ Since 2013 exclusively public service companies with a minimum of 51 % ownership by the state or municipal are allowed to carry out the collection services. It was intended this would improve the monitoring of waste quantities.¹¹

The service providers procured by the municipalities choose how the collection is to be carried out, sometimes together with the municipality. Since January 1st 2015 compulsory door-to-door separate collection should be introduced by the public service providers for paper, glass, plastic, metal and green waste. There is one exclusion: if it is not economically

⁷ Hungarian Central Statistical Office (2015), https://www.ksh.hu/regional_atlas_counties

⁸ Hungarian Central Statistical Office (2015), https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_wdsd005.html

⁹ The Hungarian Government (2014) Environmental and Energy Efficiency Operational Programme 2014-2020 p 30

¹⁰ Cotta, B. (2015), p 23

¹¹ Eunomia et al. (2013), European Reference Model on Municipal Waste Management, Member State Consultation Questionnaire p 3, 11

feasible other possibilities could be used to ensure the access to everyone. Waste yards and waste islands are just additional solutions. Based on last year's assumption 445,000¹² inhabitants still do not have access to separate waste collection; this should be solved gradually. There is no central regulation. If the service is not working the Disaster Management Body takes over operational control.

1.1.4 The non-state stakeholders

- The Association of Public Service Providers (Köztisztasági Egyesülés) represents municipal waste-collecting companies since 1972.
- The Hungarian packaging manufacturers, distributors and enterprises established the Hungarian Association of Packaging and Material Handling (Csomagolási és Anyagmozgatási Országos Szövetség, CSAOSZ) in the 1990s.
- The packaging producers and fillers are members of the Association of Environmental Enterprises (Környezetvédelmi Szolgáltatók és Gyártók Szövetsége, KSZGYSZ). They can also be members of business associations representing specific packaging materials such as the Beverage Carton Environmental Services Association (in Hungarian: Italos Karton Környezetvédelmi Szolgáltató Egyesülés, IKSZ).
- In 1995 the Hungarian recycling companies started the Hungarian Waste Management Federation (Hulladékgazdálkodók Országos Szövetsége, HOSZ).
- Non-Governmental Organizations such as the Reflex Environmental Protection Society in Győr, the Green Circle in Hajdúböszörmény, Emisszió and Csemete¹² and the national Humusz Waste Prevention Alliance¹³ (HUMUSZ) have devoted their activities to waste issues since the mid-1990s.

1.2 Summary of Legislative Framework for Waste Management

Hungary started to establish measures aimed at aligning national legislation with that of Europe as they adopted the Act on Waste Management in 2000 (Act XLIII of 2000).

Today the waste management tasks in Hungary are regulated by:

- The Act on Waste (Act CLXXXV of 2012)
- The Act on Environmental Protection (Act LIII of 1995/2015)
- The Environmental Product Fee Act (Act LVI of 1995)

1.2.1 The Act on Waste

The updated Act on waste was adopted by the parliament in November 2012. The former Act on Waste Management (Act XLIII of 2000) was considered outdated, both from a national perspective but foremost because of the need to add obligations derived from the 2008/98/EC Waste Framework Directive (WFD) into the national enactment. The deadline for implementing the obligations set by EU was December 2010, and as Hungary did not succeed to transpose the EU Waste Framework Directive into national law until 2012 the EU Court imposed penalty payments on the country. The new Act of Waste of 2012 was

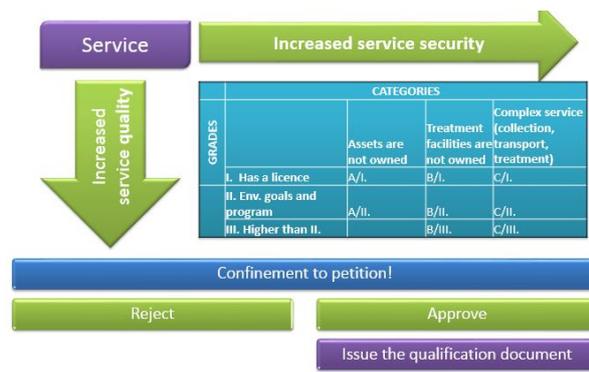
¹² Rác A (2015) A hulladékgazdálkodás és a hulladékgazdálkodási közszolgáltatás jövője

consolidated in 2013 and the latest version entered into force on 23 December 2015. The revision process was slowed down because of lack of proper databases and reliable data.

The aim of the new Act of Waste was mainly to adopt the WFD regulations and concept such as life-cycle thinking, re-use and preparing for re-use, extended producer responsibility, precaution and prevention into national law. The former waste hierarchy had three steps and two more were added in the new enactment. According to the new Act separate waste collection is compulsory from 2015. Since January 1st 2015 compulsory door-to-door separate collection should be introduced by the public service providers for paper, glass, plastic, metal and green waste.

Besides including the obligations of the WFD the new Act on Waste was meant to give the municipalities and other local entities greater responsibility over the waste management. One step towards this goal was to restrict private companies to manage municipal waste. Only non-profit companies with the majority of ownership in municipality were allowed to compete in public procurements after the adoption of the new enactment. The increased rate of state ownership was an important element of the new legislation.¹³

Between 2012 and 2014 the collector companies also have to be recorded and qualified by the National Waste Management Agency (NWMA).



Since 1st January 2015 the system of qualification has changed. It is now the responsibility of the National Inspectorate of Environment and Nature, and a new concept was introduced: the qualification permit. The permitting is now directly linked to qualification as an authority function.

Further changes related to specific tasks that the public municipal waste management companies had to carry out regarding public relations. They have to have procedure for customers' complaints, notifications for fees, data and schedules on service area, procedure of service and a webpage with this information. They also need to have an updated waste management plan every 3 years. The plan should focus on the aims of the regulations in the presentation of the activities for collection, transportation and treatment.

¹³ Dienes T (2012). Environmental assessment and policy options for solid waste systems and technologies in Budapest with EASEWASTE

Another change in the new Act on Waste was that the fees for municipal services were to be defined by the Minister responsible for National Development, after recommendation from the Hungarian Energy and Public Utility Regulatory Authority.¹⁴ The landfill fee was introduced after the adoption of the new Act and according to the Hungarian Government and the Environmental and Energy Efficiency Operational Programme 2014-2020; this led to diversion of waste from landfills to other treatment methods.¹⁵

1.2.2 The Act on Environmental Protection

The last version of the Act on Environmental Protection entered into force on 1st January 2016. The law specifies the responsibilities for the effects produced on the environment and aims to harmonize State activities with the requirements of environmental protection. It implements six Directives. The Directives implemented in the law are not related to treatment of MSW in particular but are important when it comes to environmental protection in waste related activities.¹⁶ Public participation in environmental decision and draft-making was institutionalised in the Hungarian Environmental Protection Act of 1995.¹⁷

1.2.3 The Environmental Product Fee Act

The Environmental Product Fee Act (Act LVI of 1995) is another enactment of relevance to the waste management of Hungary. This Act established the environmental product fee that had to be paid by the producers of specific waste streams such as batteries, packaging and tyres. According to the Product Fee Law at least 7 % of the budgetary allocation (through the OKTF NHI yearly budget) must be spent on environmental awareness raising.¹⁸

1.2.4 Regulations for Bio-waste

The legal background for the treatment of bio-waste is the Bio-waste regulation Nr 23/2003 and the Fertilizer Regulation Nr 36/2006. These regulations include the technical requirements of composting and the distribution of the compost product.¹⁹

1.3 Status of Waste Management Plan(s)

The Waste Framework Directive requires member states to establish one or more Waste Management Plan/s that cover the entire geographical territory. Hungary adopted the first National and Regional Waste Management Plans in 2003.

¹⁴ István, Z., Chrabák, P. (2012) The new “Act on Waste” in Hungary

¹⁵ The Hungarian Government (2014) p 15

¹⁶ FAOLEX legislative database of FAO Legal office

¹⁷ Cotta, Benedetta (2015). Wasted compliance strategies? The policy-making styles of Hungary and Poland in the implementation of European environmental directives. p 22

¹⁸ Department of Environmental Development, Ministry of Agriculture. 2015-10-27

¹⁹ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

Currently, the medium and long-term tasks are defined by the National Environmental Programme 2015-2020 and by the associated National Waste Management Plan (NWMP) 2014-2020.

The NWMP was drafted by the Ministry of Rural Development in cooperation with the National Waste Management Agency. The first National Waste Management Plan 2003-2008 was meant to be replaced by a second NWMP 2009-2014, but this plan was postponed as the adoption of the new Waste Management Act was delayed until 2012. The NWMP 2014-2020 was declared legally adopted 31 December 2013 (according to the requirement of EU), but is still under conceptual revision in 2015.

Other relevant strategies and plans that complement the NWMP:

- The National Collection and Recovery Plan 2015 is mostly a financial plan that explains the planned cost for the collection, pre-treatment and recycling of material with product fees. The plan makes reference to data in respect of waste quantities for certain streams (packaging, WEEE, tyres and batteries), but there is no real analysis of the situation. Still, these waste streams are explained more detailed in this plan than in the NWMP. An increase in collected packaging, WEEE, and tyres are foreseen while the amount of collected batteries is expected to decline. The budget for 2015 is 12,747 billion HUF (40 billion EURO). The budget for 2016 is set to 12,750 billion HUF. The budget is based on the income from the product fees, and is supposed to cover the expenses for collection, pre-treatment and recycling of the material.
- The Strategy for the Management of Biodegradable Waste in Municipal Solid Waste Management 2004-2016.
- The Development Strategy for Municipal Solid Waste Management 2007-2016.
- The Municipal Solid Waste Management Support Strategy 2007-2015.

1.4 Summary of the Key Objectives of the Plans

1.4.1 Waste Management Plan(s)

According to the National Waste Management Plan (NWMP) the total waste generation has decreased in recent years, as a result of the economic crisis. Following this trend, the quantity of deposited as well as incinerated municipal solid waste has decreased. The recycling rates are said to have increased. The NWMP 2014-2020 adopts the position that more has to be done to the national waste management system in order to comply with the Directives. National policies and targets are set in accordance with the EU waste targets. Sustainable development is one of the basic elements of the NWMP and the main principle is to follow the waste hierarchy. The NWMP states that the role of the State and municipality in public service has to be strengthened.

The NWMP lists the activities to focus on to achieve the overall objectives:

- Increase recovery and recycling rates
 - the recycling rate for metal, paper, plastic, glass and organic waste must be increased above 40 %

- the recycling rate for metal, paper, plastic, glass and organic waste from households must be 35 % by 2014, and 50 % by 2020.
- Reduce waste
- Decrease landfilling
 - The rate of municipal waste going to the regional landfill sites should decrease to below 60 % by 2014
- Design and develop separate collection
 - the necessary infrastructure must be established for all the households
- Separate reusable components of waste products to enable preparation for reuse

When the NWMP 2003-2008 was analyzed by Orosz and Fazekas in 2008, the review identified there was a need to increase the capacity of landfills, to develop infrastructure for separate waste collection and to build new composting plants. Incineration was deemed as too costly in comparison to landfilling. The lack of a reprocessing industry for plastic and glass packaging waste was considered to hinder the rapid development into a more recycling-oriented society. One question at that time was how the quantity of illegally dumped waste could be reduced. This problem is still on the agenda 2015 in the current NWMP. The prevention of waste was not in focus. This has changed as waste prevention has a whole chapter in the current NWMP. Hungary is one of the coordinating beneficiaries of European Week for Waste Reduction, and this is being worked on with gradually increasing results seen every year.²⁰

1.4.2 Waste Prevention Plan

The Waste Prevention Plan (WPP) is part of the NWMP 2014-2020 and covers the national level.²¹

The WPP covers the sectors, Construction and infrastructures, Manufacturing, Sale, Retail, Households and Public services. It does not cover Mining, Raw Material Processing and Private Service Activities/Hospitality.

The waste types covered are Food/organic, C&D waste, Hazardous waste, Household/municipal waste, and other. Paper, Manufacturing waste and Bulky waste are not included.

The WPP does not contain specific quantitative targets. The overall objective of the plan is to:

- promote the decoupling of resource use from economic activity;
- reduce material use and waste generation;
- contribute to the realisation of a more efficient resource management system;
- promote the application of solutions that have the lowest impact on the environment during their life-cycle; and
- promote job creation.²²

²⁰ See <http://www.ewwr.eu>

²¹ Eunomia et al. p 235

The WPP plans the introduction of prevention measures grouped by five areas of action²³:

Table 1.2: Prevention Measures

Areas of Action	Measures
Reuse	<ul style="list-style-type: none"> • establishment of technical working groups to analyse the general framework of reuse • elaboration of the accreditation system for reuse centres • establishment of reuse centres • ensure financial sources for the establishment and development of the reuse network • establishment of conditions for the social-based distribution of products suitable for reuse • communication campaign and coordination.
Green Public Procurement	<ul style="list-style-type: none"> • draft a regulation on green public procurement • introduce a gradual tightening of the regulation in order to meet the criteria of the EU GPP Toolkit
Environmental friendly production and management	<ul style="list-style-type: none"> • support research and development in eco-innovation and eco-design • enable the use of food for charitable purposes which is impeccable in food security point of view but are with expired “best before date”
Awareness rising	<ul style="list-style-type: none"> • incorporate prevention into environmental education, vocational training, corporate policies, public education and into the everyday life of citizens. • encourage the development of relations among experts, to provide information to the public on the current situation of waste prevention and on the related opportunities and to transfer knowledge on waste prevention.

The European Environment Information and Observation Network (EIONET) has identified the Hungarian WPP as mostly in line with the 98/2008 Annex IV (1-16). One measure that goes beyond the activities suggested by the EU is the one regarding to food waste (enable the use of food for charitable purposes which is still safe to eat but where the “best before date” has expired). The WPP points out the need to measure the indicators for waste

²² NWMP p. 249

²³ NWMP p. 250-265

prevention annually in order to monitor and to keep track of the implementation of the programme but lacks description about the responsibility for monitoring the indicators.²⁴

The general indicators proposed in the WPP are:

- the amount of annually generated municipal waste (t); and
- the increase of the amount of separately collected municipal waste compared to the total amount of generated municipal waste (this is not, strictly speaking, a waste prevention indicator).

The specific indicators concerning MSW are:

- number of accredited reuse centres;
- the size of population provided by the reuse centres (number of individuals)
- amount of second-hand products transferred to accredited reuse centres;
- the proportion of marketed second-hand products compared to the amount transferred to accredited reuse centres;
- the proportion of 'green' elements compared to all other criteria (%) of public procurements;
- number of students participating in courses on waste prevention;
- number of events related to waste prevention

The WPP includes the expected costs of the measures and the minimum financial resources needed for municipal waste management. The costs of the implementation of the programme are financed partly by the EU and other international grants, and related national co-financing, including revenues from the landfill tax and product fees.²⁵

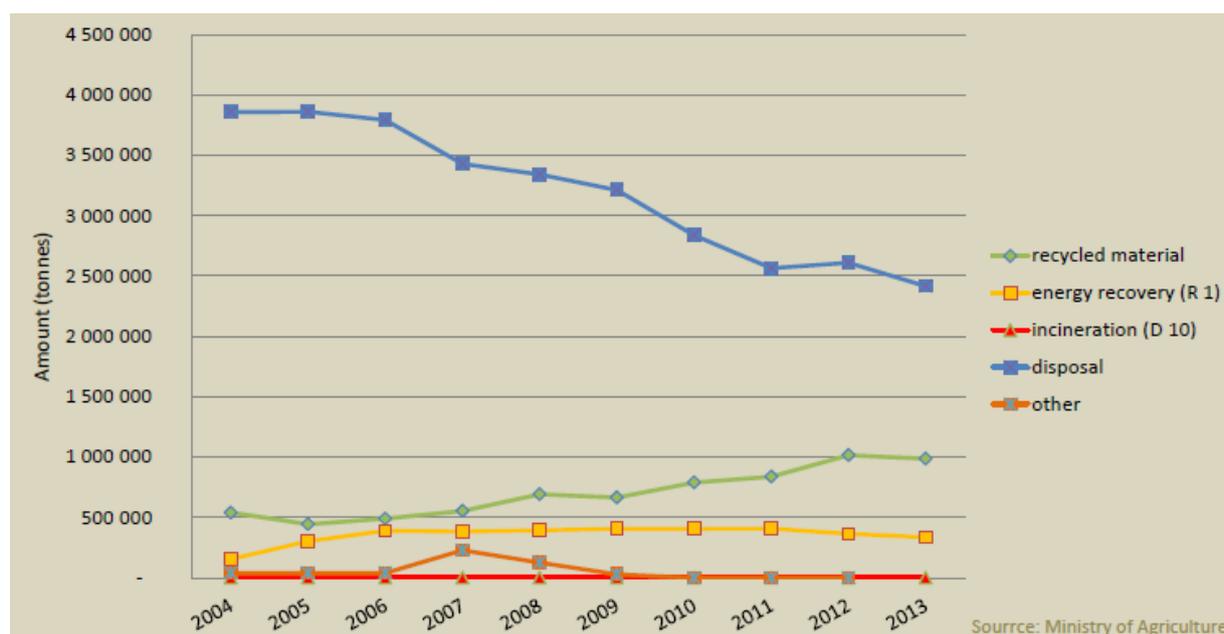
1.5 Progress towards the Fulfilment of Targets

Some progress has been seen towards fulfilment of targets as material recovery and energy recovery has increased, and as landfilling as well as waste generation has decreased in recent years (see Figure 1.2). However, the amount of landfilled waste is still high and the levels of recycling and biological treatment are low.

²⁴ <http://scp.eionet.europa.eu/facts/WPP/hungary>

²⁵ NWMP p 268 f

Figure 1.2: Treatment of municipal waste 2004-2013²⁶



The national objectives are the same as those in the EU Directives; 50 % recycling of MSW, separate collection of glass/metal/plastics/paper and reduction of landfilled biodegradable waste.²⁷

1.5.1 Landfill Directive Targets

The objective of the Landfill Directive is to prevent or reduce negative effects on the environment and on human health by introducing stringent technical requirements for waste and landfills. In order to comply with the Directive Hungary closed or updated all non-compliant landfills by the year 2009.

The Directive sets targets for reduction of biodegradable municipal waste going to landfill. The target for 2016 is to reduce the amount of BMW to 35 % of the amount landfilled in 1995. The interim targets for 2006 and 2009 were to reduce the biodegradable municipal waste to 75 and 50% of the waste produced in 1995. The Hungarian legislation initially set the targets two years ahead of the Landfill Directive Targets, which means they were to achieve 35% of the 1995 level already by the year 2014. This was revised in 2007 so that the targets are due to be met on the same date as in the Directive.

In 1995 Hungary generated almost 2 million tonnes of BMW (approximately 40% bio-waste and 40% paper). Hungary introduced a ban on the landfilling of untreated waste in 2002. This has led to establishments of MBT facilities and composting facilities.²⁸ The pre-

²⁶ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

²⁷ EEA (2013) p 10

²⁸ EEA (2013)

treatment of municipal waste in the MBT facilities are supposed to reduce the organic content going for landfills. Bans were also introduced on tyres and shredded rubber.

The quantity of landfilled biodegradable waste has been estimated at 841 000 t in 2012²⁹ and 944 000 t in 2014³⁰. A maximum of 820 000 t can be landfilled in 2016 in order to comply with the 35% reduction target. The EEOP suggests that there is a need for investments in central composting, as the 250 000 tons of current capacity has to rise to 470 000 t by 2020. According to the Ministry of Agriculture, the quantities are only estimates and new data will be presented when the Waste Management Plan is revised.³¹

According to the European Environment Agency, Hungary is on the way on fulfilling the target of the Landfill Directive. The interim targets of 2006 and 2009 were met thanks to an increase in material recovery, MBT and improved paper collection system.³² The introduction of separate collection schemes for biodegradable packaging waste (paper, cardboard and wood packaging) has helped initiate the diversion of biodegradable waste from landfills. Hungary has worked in recent years to extend the separate waste collection service to the whole population and to improve the performance of these collections where in use. These actions are thought to make it feasible to reach the objective of 35% percent reduction by 2016. The Packaging Directive (1994) has, besides the Landfill Directive, been an important EU instruments to reduce landfilling.³³ Performance data on these directives is shown in Figure 1.3.

Besides the challenge of establishing central composting capacity, as referred to above, the separate collection of green waste should be set up by 2015. An obstacle to further improvement towards the landfill directive target could be that the market for waste-derived compost is limited. Landfill sites with composting facilities are having difficulties finding markets for their products. The capacity of the facilities is only used to 50 percent and only a small amount of the compost is sold on the private market.³⁴ There are problems collecting the organic waste, treating it and utilising the final product.

A recent report suggests there is a MBT-capacity of 750 000 tonnes/year, as new facilities have been constructed.³⁵ According to the Ministry of Agriculture the capacity was 1 193 125 tonnes/year in 2014 there were approximately 23 MBT plants in operation (7 were out of order temporarily).³⁶

²⁹ The Hungarian Government (2014)

³⁰ European Commission (2015)

³¹ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

³² EEA (2013), 8-9, 15

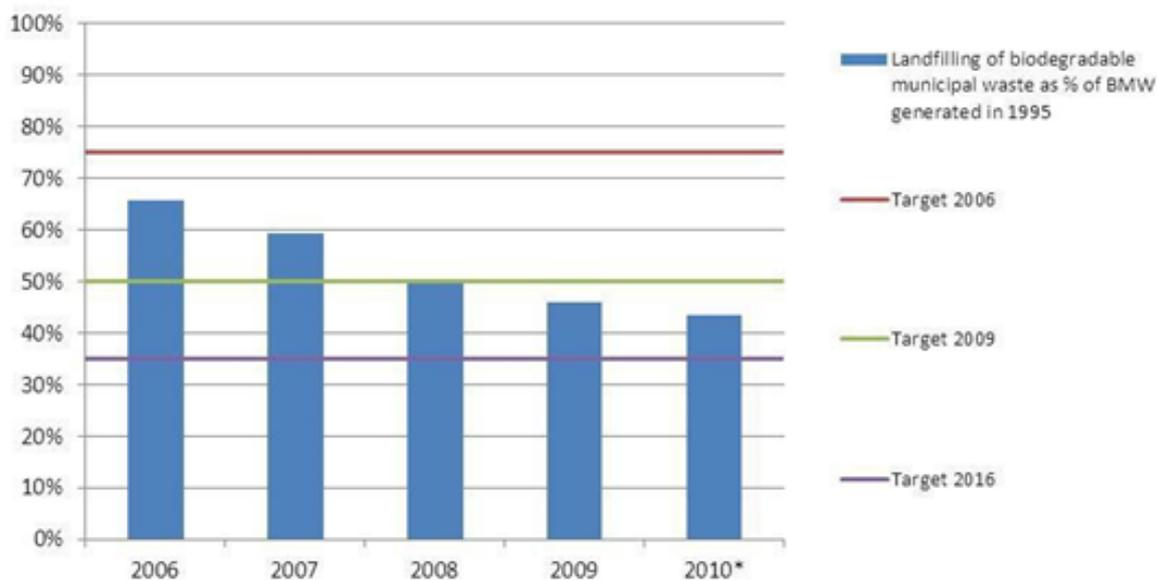
³³ EEA (2009), Diverting waste from landfills

³⁴ Ibid.

³⁵ European Commission (2015) Detailed evaluation report for assessing the waste management plan of Hungary

³⁶ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

Figure 1.3 Landfilling of Biodegradable municipal waste 2006-2010³⁷



Data on pre-treatment and sorting of waste (incl. MBT) are not covered as categories in the waste data reporting to Eurostat. In practice, the amounts delivered to mechanical biological treatment or sorting should be reported on the basis of the subsequent final treatment steps. However, the way these amounts are allocated to the four treatment categories (incineration, landfilling, recycling and composting) varies significantly. In the case of Hungary there is no official data on the treatment of the BMW and other waste streams going through MBT-facilities and thus it is not clear how this is accounted for in the statistics.

Figures show that 26 000 tonnes of the RDF output from MBT goes to cement kilns.³⁸ The rest is landfilled. The biostabilised material from MBT is intended to be used, but it is not clear to what extent this currently happens in practice. The landfill fee for these residues is lower than for municipal solid waste that has not gone through treatment.

The landfill fee was introduced in January 2013. The fees are paid by the landfill operators and the revenue is supposed to go to support of waste prevention systems and increase of recycling rates and awareness-rising activities. The fee was set at 10.7 EUR in 2013 with the plan to increase the fee radically within four years. The fee is the same for municipal waste, demolition waste, hazardous waste and sludge, while the fee for treatment residues is set at a lower level.

The treatment residues are divided into non-recoverable and recoverable fractions of residual waste from the production of products from waste. The fee for the recoverable fractions is not included in the table above, but was set to 19 EUR in 2014. The fees

³⁷ EEA (203)

³⁸ There is the potential for more material to be used at cement kilns. However, the Ministry's data is not sufficient to confirm how much of the remaining material could be used in this way, or the location of other kilns that could also receive this material.

representing 2014 above were still in use November 2015.³⁹ The landfill fee is calculated according to the following formula (based on data returns for each quarter):

$$\text{Landfill fee in Forint} = \sum [H_i (\text{tonne}) \times E_i (\text{Forint/tonne})]$$

Where

H_j: payable landfill fee

H: weight of waste of payable landfill fee

E: unit price of waste of payable landfill fee

i: type of waste of payable landfill fee

It is intended that this fee will cover the cost of the treatment, although there is no data to confirm that this is the case.

1.5.2 Waste Framework Directive Targets

The WFD emphasises the importance of waste minimisation, the protection of the environment and human health as priorities, and advocates the waste management hierarchy. The objective of the Directive is to reach the whole population by selective waste collection. Article 11.2 of the Directive requires Member States to get the level of preparation for re-use and recycling of waste materials (including at least paper, metal, plastic and glass from households and the same kind of waste from similar origin) to increase to a minimum of overall 50 % by weight by 2020. The rules and four different calculation methods for verifying compliance with the targets set in Article 11.2 are laid down in Commission Decision 2011/753/EU.

The four calculations methods imply substantial differences in the effort that the member state needs to put into the national improvement of recycling.

Hungary has selected method 2 to calculate the rate of recycling. This method means that the recycling rate of household and similar waste is calculated through dividing the recycled amount of paper; metal; plastic; glass waste (and other single waste streams from households or similar waste streams) with these fractions' total generation. This is the most commonly chosen method. It is noted that this method would allow Hungary to meet the target by recycling considerably less than 50% of MSW in total.

All policy and legislation in Hungary has been aligned to the principles of the waste management hierarchy.

The plan is to establish a network of re-use centres aimed at preparation for reuse, with three centres to be available by 2022. The packaging collection system and separate collection of MSW was introduced in 2001.⁴⁰ Ensuring all settlements have access to separate collection, and improving the performance of existing separate collection systems, are among the main goals of the NWMP. Hungary has made separate collection legally

³⁹ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

⁴⁰ EEA (2013), p 15

binding for 100 % of households from 2015. According to the NWMP 5 million inhabitants had access to separate collection system for packaging in 2009. Two years later 6.2 million were served and 2012 9.1 million could use the system. This means that over 90 % of the population had access to separate collection in the form of bring systems in 2012. The numbers presented in Table 1.5 show that approximately 30 % of all household in Hungary had access to waste collection and separate collection in 2011; it is assumed that this relates to bring systems rather than door to door collection, although this is not always clearly indicated in the information provided by the authorities. There is no punishment for the authorities if the separate waste collection continues on a low level; it is not clear whether any sanctions would be applied in the event that coverage is not complete, and if so, on which body (the authorities or the EPR body) these would fall.⁴¹

The separate collection comprises three different collection systems; door-to-door, waste yards and waste islands. Door-to-door collection started in 2006, the first waste-yard was opened 2001 in Budapest and the first waste island was opened in 2004, also in Budapest.

Since January 1st 2015 compulsory door-to-door separate collection should be introduced by the public service providers for paper, glass, plastic, metal and green waste. There is one exclusion: if it is not economically feasible other approaches could be used to ensure the service is accessible to everyone. Waste yards and waste islands are just additional solutions. Based on last year's assumption 445.000 inhabitants still do not have access to separate waste collection, this should be solved gradually.⁴²

The current ratio of "recovery of the four fractions of communal waste" was according to the Hungarian Government 38.5 % when the EEOP was written in the end of 2014. In the EEOP the term recovery is used instead of preparation for re-use/recycling, which raise the question of how the ratio is calculated and if more treatment methods are included in the numerator. The EEOP takes the view that once the whole country is covered by well-functioning separate collection, it will be feasible to reach the goal of 50% of the material going to preparation for reuse and/or recycling by 2020.⁴³ It is not clear what method or data they have used to for these calculations. According to the review by the European Environment Agency it is possible to reach 47% by 2020 if the rate of recycling from the last 5 years is maintained; MSW recycling was 20% in 2010 and 21% in 2011.⁴⁴ According to the "Detailed evaluation report for assessing the waste management plan of Hungary" it is possible to fulfil the recycling target when using Method 2 for calculation. The Hungarian estimation in the NWMP is 62%.⁴⁵ As the terms recovery and recycling sometimes seem to be used with no distinction there is a need to clearly specify the actual activities. Calculation method 2 may also include "other single waste streams from households or similar waste streams", which makes it difficult to know how the result is derived.

⁴¹ Dienes T (2012)

⁴² Rácz A (2015) A hulladékgyűjtés és a hulladékgyűjtési közszolgáltatás jövője

⁴³ Hungarian Government (2014)

⁴⁴ EEA (2013), p 10

⁴⁵ European Commission (2015)

1.6 Implementation of Specific Waste Framework Directive Articles

This section summarises how the Waste Management Plan indicates that the articles from the Waste Framework Directive have been implemented in law and how policies are supporting the implementation.

1.6.1 Article 4: Application of the Waste Hierarchy

Article 4 requires the application of the waste hierarchy as a priority order in waste prevention and management legislation, encouraging the best environmental outcome.

The Hungarian Waste Management Act is based on the system of waste hierarchy and in the first section of the NWMP the steps of the hierarchy are explained. The concept and approach in accordance with the implementation of the EU waste hierarchy is clearly defined. The objectives of the NWMP are the same as those in the EU Directives; 50% recycling of MSW, separate collection of glass/metal/plastics/paper and also reduction of biodegradable waste landfilled to 35% by 2016. Important aims in the NWMP are to prevent waste and increase recycling, to view waste as a resource, to increase the use of EPR and only to landfill non-recoverable waste.

Progress in the management of MSW between 2004 and 2012 include:⁴⁶

- Material recovery increased from 12 % to 25 %
- Energy recovery remained 8-10 %
- Landfill rate reduced from 84 % to 65 %

To make the waste management and use of resources more sustainable, Hungary has introduced:

- Product fees in 1995 - the system was revised in 2011;
- A landfill fee (referred to as a tax in some sources) in 2013;
- A ban on the landfilling of untreated waste in 2003; and
- Mandatory separate collection of dry recyclables by 2015.

Other instruments in order to be able to climb the waste hierarchy are proposed and planned in the NWMP, but there is no evidence how and if these instruments have been implemented. The deposit scheme for glass bottles is one of these instruments where information regarding the implementation is vague.

There is a part of the NWMP devoted to Waste Prevention and, as mentioned above, there are intentions to establish a network of re-use centers for preparation for reuse, with three planned to be available by 2022.⁴⁷ The EEOP discusses the importance of awareness-rising activities and informed shopping and the use of more durable products is mentioned as parts of a solution to reduce waste generation.⁴⁸

⁴⁶ European Commission (2015) p 16

⁴⁷ Ibid p 13

⁴⁸ The Hungarian Government (2014) p 65, 68

Although Hungary has highlighted the waste hierarchy in the NWMP and has introduced some important mechanisms that aim to change the waste management system in line with the waste hierarchy, the rate of landfilling is still high and the recycling levels low. The Ministry of Agriculture has started to work with the idea behind Circular Economy⁴⁹, which is a step in the right direction.

1.6.2 Article 10: Recovery

Article 10 states that Member States should take necessary measures to ensure that waste undergo recovery operations in accordance with Articles 4 and 13: waste shall be separately collected where technically, environmentally and economically practicable to facilitate recovery.

Separate collection was introduced in 2006 and the idea is that door-to-door collection will increase the levels of recycled material. The separate collection system of municipal waste is mandatory by 2015 and it is understood that door-to-door collection is preferred, although rural areas will still be served by the bring-system. There is no official data on the proportion of door-to-door collection yet, but there will be in 2016. The coverage of bring-sites, or waste islands, has decreased as the door-to-door collection has increased. Glass is still collected from the waste islands, however, as it is not part of the door-to-door collection scheme. The waste islands in Budapest have decreased from 900 to 245 in recent years.⁵⁰

Table 1-4 shows the number and rate of households with separate collection up until 2011. The coverage of regular collection of municipal waste has increased in recent years and is now practically 100%.

⁴⁹Department of Environmental Development, Ministry of Agriculture. 2015-10-27

⁵⁰Department of Environmental Development, Ministry of Agriculture. 2015-10-27

Table 1.4: Households covered by waste collection and source separation⁵¹

Year	Number of households covered by regular waste collection	Number of households covered by regular waste collection with source separation	Total number of households	Households covered by regular waste collection (%)	Households covered by regular waste collection with source separation (%)
2001	3,524,781		4,077,410	86.45	
2002	3,624,544		4,104,019	88.32	
2003	3,778,719		4,133,975	91.41	
2004	3,800,568		4,172,787	91.08	
2005	3,813,261		4,209,472	90.59	
2006	3,893,453	212,220	4,238,452	91.86	5.01
2007	3,939,517	270,752	4,270,497	92.25	6.34
2008	3,974,678	553,986	4,302,827	92.37	12.87
2009	3,994,914	742,373	4,330,681	92.25	17.14
2010	4,012,061	993,822	4,348,955	92.25	22.85
2011	4,021,121	1,269,911	4,358,858	92.25	29.13

Today the amount of coverage is obviously higher than showed in the table above. A system with two bins or a bin and bag system is the typical method for door-to-door collection; one for mixed waste and one for recyclables. In Budapest the system is based on three bins; as there is an additional bin for used oils, batteries and hazardous waste. In some areas collection of garden waste is also possible.

The Ministry of Agriculture presents the results of collected dry recyclables from the city of Miskolc. Miskolc is the fourth largest city in Hungary and has approximately 161,000 inhabitants. The data shows that the monthly collected material has increased between 2014 and 2015. Taking into consideration the size of the city this would mean a collection rate of 2.76 kg paper, 1.32 kg plastic and 0.24 kg metal per inhabitant and year. The Ministry is also presenting data from Municipal Public Services Nonprofit Inc. representing collected material in Budapest.⁵² Based on this data and calculations made by the project team every inhabitant (1.74 millions) would contribute with 12.6 kg paper and 6 kg of mixed plastic and metal to the separate collection scheme. There seems to be a discrepancy between the statistics reported to Eurostat and the data presented by the Ministry of Agriculture as the Eurostat has higher amount of generated and treated packaging material (see Table 1.5).

The above data can also be compared with the national data on waste generation. For plastics, for example, composition data indicates that waste plastics should account for

⁵¹ Eunomia et al. (2013), European Reference Model on Municipal Waste Management, Member State Consultation Questionnaire

⁵² Department for Environmental Development. Ministry of Agriculture. 2015-10-27

14.5% of 377 kg, or close to 55 kg. By comparison, the amount of waste plastic packaging according to the Eurostat data is only 27.9 kg per capita.

Table 1.5: Recovery and Recycling rates of paper, plastic and glass in selected Member States (2012)⁵³

	Paper and cardboard packaging				Plastic packaging				Glass packaging			
	Generated kg/cap	Total recovery rate	Material recycling	Energy recovery	Generated kg/cap	Total recovery rate	Material recycling	Energy recovery	Generated kg/cap	Total recovery rate	Material recycling	Other recovery
Belgium	60.3	97%	89%	8%	29.5	91%	39%	52%	35.9	100%	100%	0%
Bulgaria	18.5	89%	89%	0%	13.3	41%	41%	0%	10.2	61%	61%	0%
Czech Republic	37.9	92%	88%	4%	20.5	72%	60%	12%	18.8	75%	75%	0%
Hungary	39.3	87%	78%	9%	27.9	56%	31%	25%	10.3	32%	32%	0%
Austria	61.1	98%	84%	13%	34.1	100%	34%	66%	32.2	89%	85%	4%
Sweden	54.5	78%	78%	0%	23.2	100%	46%	54%	20.6	89%	89%	0%
United Kingdom	60.3	102%	89%	13%	35.2	46%	32%	15%	37.4	68%	68%	0%

The Hungarian recovery rate of all waste streams, not only packaging material, was approximately 45 percent in 2012.⁵⁴

1.6.3 Article 11: Reuse and Recycling

Article 11 confirms the need for measures to promote reuse and high quality recycling, including the need for separate collection for (at least) paper, metal, plastic and glass, with a minimum of 50% of these materials to be collected for recycling by 2020.

Hungary introduced product fees in 1995 as a result of discussion between the Hungarian Ministry of Environment and the Hungarian Packaging and Filling Industry. This was in line with the polluter pays principle, which gives producers incentives to make products easier to recycle and gives them responsibility for the recycling of the collected material. The State income from the fees was intended to be used for improving collection and recycling.

The collection, recovery and recycling of packaging waste on behalf of the producers were carried by the first recovery organisation established in Hungary, Öko-Pannon, founded in 1996.

⁵³ Eurostat 2015

⁵⁴ European Commission (2015) p 28

The packaging waste directive was implemented in the Hungarian law in 2002 and in 2012 there were important changes to the system. A state-owned agency (National Waste Management Agency – OHÜ) was created to coordinate and finance the collection and recycling. This Agency replaced earlier recovery schemes funded by industry. Another change was that the product fee had to be paid by the producers of the packaging material instead of by the agents filling the packages. The product fees were increased.

In 2015 the National Inspectorate for Environment and Nature - National Waste Management Directorate took over the responsibility from the NWMA.

The low recycling of glass in Hungary in particular needs to be addressed. Glass is, in general, collected from the waste islands and is not part of the door-to-door collection. It could be included if the service providers decide to include it. According to the National Collection and Recovery Plan the product fee for glass is too low and is not covering the cost of the management.⁵⁵

Hungary collected 44 000 tonnes of WEEE in 2013⁵⁶ and all was sent for recycling.

1.6.4 Article 14: Costs of Waste Management

Article 14 indicates that the costs of waste management should be borne by the original waste producer in accordance with the polluter pays principle, although costs can also be borne partly by the producer of the product, through product charges. Economic instruments can play a significant role in diverting waste from landfill if they manage to change the behaviour of households, waste companies and producers.

The Municipal Solid Waste Management Support Strategy (A Települési Szilárdhulladékgazdálkodás támogatási Stratégiája) for the period 2007-2015 has the following assumptions:

- treatment capacities will be established by the end of 2015;
- the amount of waste to incineration will not change (approx. 420.000 tons/y);
- separate waste collection must be increased;
- the organic fraction should be composted (with focus on home composting); and
- landfilling need to be decreased (by using mechanical biological treatment)⁵⁷

The Hungarian Energy and Public Utility Regulatory Authority defines the prices for the collection of municipal residual waste from households. The waste fee is regulated by the Municipal Council and depends of the size of the city. Public service companies are carrying out the collection to households, while businesses have their municipal waste collected either by public service companies or other companies. The cost for the collection from businesses is defined by individually negotiated contracts, not by the Hungarian Energy and

⁵⁵ The National Waste Management Directorate (OKTF-NHI), A 2015. Évre vonatkozó Országos Gyűjtési és Hasznosítási Terv

⁵⁶ Eurostat, <http://ec.europa.eu/eurostat/web/waste/key-waste-streams/weee>

⁵⁷ Illés, Z. (2009) Hungarian Waste Management Policy,

Public Utility Regulatory Authority.⁵⁸ In Budapest in 2012 the property owners paid the full price for the collection and disposal of the residual waste.⁵⁹

In many areas, a pay per bin-system for residual waste has been used for decades, with the bins usually being 120 or 1100 litres.⁶⁰ The nationwide applied Pay-as-You-Throw (PAYT) system for municipal residual waste is to be organised and maintained by the public service/municipality. It is not clear whether the full cost of disposal is charged.

In addition to the above system, in some areas there is a parallel system with pre-paid residual waste bags, for example in Budapest and in touristic regions. This system is also a pay-as-you-throw system as the collection is based on the fees paid for every bag in advance and no extra fee is charged at pick-up.

The separate collection of packaging waste is financed through the EPR-system since 1995 (Extended Producer Responsibility), and is thus based on the extra fees for certain products paid by the customers. Hence, there is no extra charge for the service of the separate collection. The cost for the management of packaging waste in 2015 was expected to be 8,628 billion HUF.⁶¹ The fee is determined centrally. Hazardous and non-recyclable products have a higher fee than non-hazardous and recyclable products. A packaging with light material has lower fee than a heavy packaging. The civic amenity sites for bulky waste etc. are financed by the local authorities.

There is no compulsory deposit system in use, but some sources indicate the intention is to implement this for bottles and cans in 2016 (although in other cases the year 2014 is mentioned). There are voluntary systems in some chains of supermarkets. Another way of using the deposit scheme is with electronics; if a TV is returned when buying a new one there is a reduction of the price for the new TV.

The total cost of the waste management in the regions is shown in Figure 1.4.

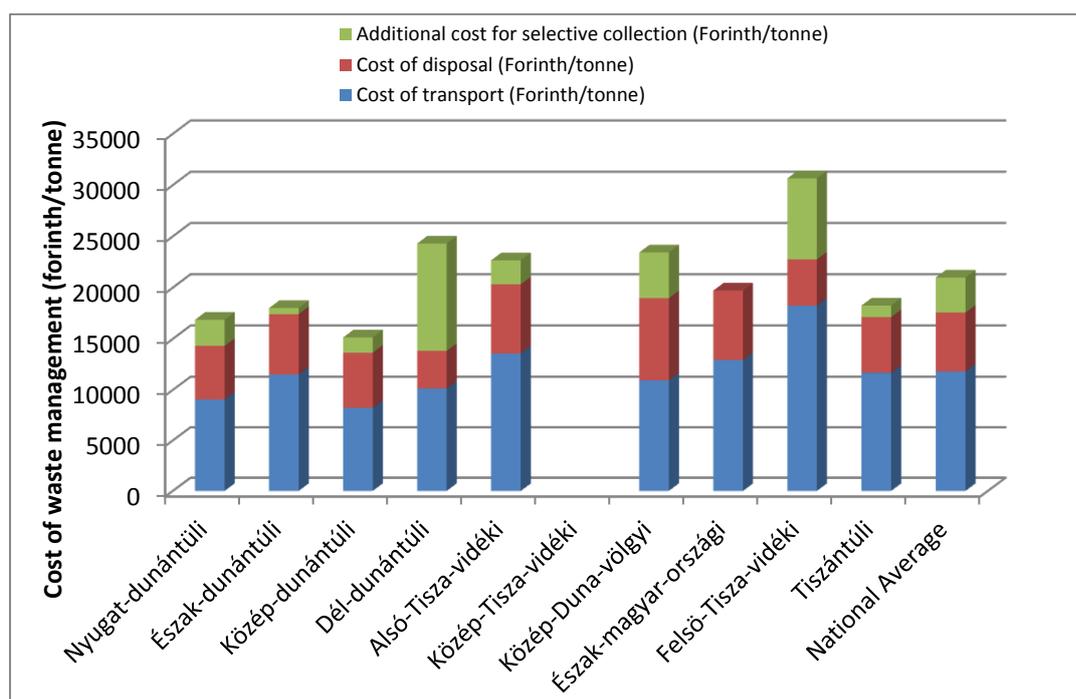
⁵⁸ Eunomia et al. (2013) p 9, 16-18

⁵⁹ Dienes T (2012) p 197

⁶⁰ Dienes T (2012)

⁶¹ The National Waste Management Directorate (OKTF-NHI), A 2015. évre vonatkozó Országos Gyűjtési és Hasznosítási Terv

Figure 1.4: Total cost of the waste management in the regions⁶²



The national average cost for the different steps of the waste management is presented in Table 1.6.

Table 1.6: The unit cost of household waste management (€/tonne)⁶³

Regional Environment, Nature and Water Inspectorate	Cost of transport	Cost of disposal	Cost selective collection treatment	Revenue from selective collection	Additional cost for selective collection	Total cost of waste management	Transport cost (€/tkm)
National Average	39.98	19.47	15.41	4.31	11.57	71.72	0.3045

1.6.5 Article 22: Encouraging the Separate Collection of Bio-waste

The management of bio-waste is regulated by the provisions of the Landfill Directive, obliging Member States to reduce the amount of biodegradable municipal waste that they landfill to 35 % of 1995 levels by 2016. This target means that by the year 2016 Hungary needs to decrease the amount of untreated landfilled bio-waste to less than 820 000 t/year.

The NWMP states that the bio-waste quantities will increase with the introduction of the new system; there is no detail on how this is expected to happen. A working group was

⁶² Eunomia et al. (2013), European Reference Model on Municipal Waste Management, Member State Consultation Questionnaire

⁶³ Eunomia et al. (2014), "Development of a Modelling Tool on Waste Generation and Management" Appendix 1: Baseline Report

drafting a new Bio-waste legislation which was due by the end of 2015. The new legislation will not regulate food waste and there is no plan to collect food waste. Instead, the Ministry of Agriculture is working on preventing food waste and they are encouraging cooperation with food-banks. Later on the collection of food waste might be an issue. Increased source separation of green waste will be implemented as part of door-to-door collection by 2015. Home composting and communal compost in villages will be encouraged for the green waste.⁶⁴ In 2013 the collection was only 4% of the generated waste, but it is assumed that this will increase to 10 % in 2015, when collection is changed to door-to-door, and to further increase to 15% in 2020.⁶⁵

The Ministry of Agriculture is aware that there are data gaps in respect of organic waste. Discussion at the workshop confirmed there was a lack of data for food waste specifically; this an area where further assistance on calculation methods would be welcomed. The percentage of biodegradable waste in the MSW was 31 percent (1 250 000 t) in 2010. The total amount of MSW is expected to increase until 2020 and with the percentage of BMW being constant, the biodegradable waste will increase from 1 271 000 t in 2014 to 1 364 000 t 2020.

All of the separately collected bio-waste (200 000 tonnes) is composted or treated through bio gasification. The majority of the generated BMW in the mixed waste is landfilled (944 000 t) or incinerated with energy recovery (127 000 t). Up to 750 000 tonnes of waste is sent to MBT facilities; some of the waste sent to MBT facilities is also included within the landfilled and incinerated figures.⁶⁶

Only 820 000 tonnes of biodegradable waste can be disposed of in landfills during 2016 to fulfil the target of the Landfill Directive.⁶⁷ Provided the waste is treated through a biostabilisation process, the increased MBT capacity will help in meeting these targets, but in future years some material will also need to be treated using composting or anaerobic digestion, and this, in turn requires the introduction of separate collection systems for this material.

Biological composting was only used for 0.5-3 % of the waste in the Hungarian regions in 2013.⁶⁸ To start a well-functioning central composting facility there is a need for a stable waste stream, and this implies the more widespread introduction of separate collection systems.

The compost has to be accepted and used in agriculture to get a logistic functional system. In order to get the compost clean and safe there is a need to develop quality standards on this material, which is mentioned in the NWMP. The NWMP also states that developing sorting plants is a concern to reach the target.⁶⁹

⁶⁴ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

⁶⁵ Eunomia et. al. (2014) p 239

⁶⁶ European Commission (2015) p 18

⁶⁷ European Commission (2015)

⁶⁸ EEA (2013) p.10

⁶⁹ European Commission (2015) p 14

It is further understood that there is a strategy document for the Management of Biodegradable Waste in Solid Waste Management 2004-2016, but the project team has not been able to obtain this document.

1.7 Summary of Policy Mechanisms and Instruments to Meet Targets

The National Waste Management Plan lists the different types of planned activities and measures that will increase source separation and make Hungary follow the waste hierarchy, in order to comply with EU targets. Some activities will, when fully implemented, work to fulfil both the Landfill Directive and the Waste Framework Directive.

Economic instruments

- The landfill fee was introduced in 2013, with the intention to divert waste to other treatment options. The values were intended to increase sharply up to 2015, but the fee has not been raised as planned.
- The Environmental product fees were implemented in 1995.
- The NWMP is discussing the role of Green Public Procurement as a mean to change the waste streams.
- Plans for deposit-refund system for bottles and cans by the year 2016 are mentioned in various sources, there appears to be no official system implemented yet. Some supermarkets have their own deposit-system and PET-bottles are worth 1 HUF and aluminium cans 2 HUF.⁷⁰
- Waste pricing and PAYT are discussed in the plan, and have been implemented to some extent.

Legal instruments

- There are quantitative targets stemming from EU Directives implemented in laws and plans.
- Hungary has adopted mandatory separate collection of dry recyclables in 2015, although this appears to be based on bring systems, and does not cover organic materials.
- Extended Producer responsibility (EPR) is used for batteries/accumulators, WEEE and End-of-Life Vehicles.
- Hungary is planning to develop quality standards for compost but these are not yet in place.

Administrative instruments

There is no sign of this kind of instruments in use for municipal waste.

However, there are information exchange tools and monitor/tracking schemes for industrial waste and for Construction and Demolition waste. There is also a waste management information system database which provides data on waste treatment in Hungary.

⁷⁰ Dienes T (2012) p 204

Information

The EEOP and NWMP are listing awareness-rising activities as important to achieve the objectives of the waste management. The target group are mainly households and producers of certain waste types. There is no evidence of activities that have been carried out yet.

1.8 Investment in Waste Management Infrastructure

Approximately 80% of the waste management projects carried out between the entrance in EU and the year 2009 was financed by EU.⁷¹ The Hungarian Environment and Energy Efficiency Operation Programme 2014-2020 claims that the state of the current infrastructural facilities are not in compliance with the expectations laid on the municipalities and public organisations to carry out professional waste management. These bodies have got an increased role according to the legislation, but they need investments in infrastructure to deliver results. Hungary has had waste related development projects funded by ISPA (Instrument for Structural Policies for Pre-Accession) and the CF (Cohesion Fund) but there are still regions in the country that need to put a lot of effort to develop their waste management systems.⁷²

Landfilling

In 2005 there were 178 landfills.⁷³ Today there are 70 operating official landfills. In 2009 Hungary closed or upgraded landfills that did not comply with the technical rules of EU. 41 landfills were upgraded and 29 passed the control and could carry on their operations. 60 of these are majority-owned by the municipality, 8 are owned by foreign private companies and 2 are owned by Hungarian private companies.⁷⁴ It is understood the facilities are mainly co-financed by financial support from EU. There is also low capacity in some regions and higher in others, as a result of improper geographical distribution.⁷⁵ There are no plans to establish new landfills.⁷⁶ If landfill deposit rates remain the same, landfill capacities presently provide adequate capacity for more than 25 years. However, the amount of landfilled waste has been decreasing since 2005.⁷⁷

There are approximately 1000 illegal dumps according to the NWMP. Mostly demolition waste is dumped. The municipality is responsible and the authorities are seldom involved. There are awareness programs at kindergarten and grassroots' voluntary programs for clean-up. Sites are cleared and new ones appear all the time. However, this problem has decreased recently as citizens are becoming more aware.

⁷¹ Illés, Z. (2009)

⁷² The Hungarian Government (2014) p 66, 30

⁷³ Dienes T (2012)

⁷⁴ The National Waste Management Plan p 46

⁷⁵ Dienes T (2012)

⁷⁶ Eunomia et al. (2013) p 236

⁷⁷ Holdonner et al (2014)

Incineration

There is one incinerator plant in Hungary, located in Rákospalota, Budapest. It was built in the late 1970s and modernized 2003-2005 to meet the standards set by the EU Waste Incineration Directive. The capacity is 420 000 tonnes and the capacity used for MSW is 400 000 tonnes. 52 percent of the waste from Budapest is treated in this facility. The combined heat and power functionality was added in 1981 and the plant rebuilt between 2002 and 2005. The generated waste is used by 25 000 citizens in a district heating system. Electricity is forwarded to 140 000 citizens.⁷⁸ An additional 70 000 tonnes is incinerated in cement kilns.⁷⁹ There is no official plan to build additional incinerators or to expand the capacity in the existing plant, but as the waste infrastructure is reviewed the path is not clear.

Mechanical Biological Treatment (MBT)

To enable a diversion of BMW from landfills the Hungarian Government sees the need for investments in new or enlarged MBT-facilities.⁸⁰ There are 23 MBT plants in operation with 7 out of order. The capacity is 1 193 125 t/year. The output from MBTs is primarily landfilled; it is not clear to what extent this material has been stabilised. The extracted RDF-output of the MBT facilities will continue to be treated in cement kilns, not in the incinerator plant.⁸¹ It is understood that historically many MBT facilities have faced a shortage of demand of their RDF.⁸² Cement kilns are said to prefer to import waste from Italy instead of burning RDF from the Hungarian MBT plants. 35 % of the waste going into the MBT is coming out as RDF and the treatment plants have to pay to get rid of this output.⁸³

Central composting

In order to use central composting there is a need for separately collected bio-waste. As the amount of collected bio-waste is low composting as treatment method is not widely used. In 2009 the compost facilities in Hungary operated at less than 50 % of their capacity.⁸⁴ There are plans to expand door-to-door collection to include separate collection of biological waste and in some cases there is collection of food waste in separate pre-paid bags. The collected amount may rise if Hungary chooses to prioritise this. Another important obstacle seems to be that the scepticism towards the composted soil. If no one will accept this resource on their fields there will be no market for the material. A quality standard on the compost is under discussion and listed as an activity in the NWMP.

⁷⁸ Dienes T (2012)

⁷⁹ CEWEP (2013)

⁸⁰ The Hungarian Government (2014) p 15

⁸¹ Eunomia et al. (2013) p 236

⁸² EEA (2013) p.13

⁸³ Eszter Tanka, National Inspectorate For Environment and Nature - National Waste Management Directorate, 2015-10-27

⁸⁴ EEA (2009)

Recycling

In 2013 there were 1 022 362 tons of generated packaging waste and 502 755 was material recycled.⁸⁵ According to the NWMP the capacity was expected to be 400 000 tons by the year 2014. This collection system is solely financed by the product charges from the EPR-scheme. In 2013 there were approximately 5,000 public collection facilities (waste islands) and 130 civic amenity sites (waste yards).⁸⁶

As the separate collection is now mandatory there is a need for more sorting capacity. There are plans to open additional facilities in 2016.⁸⁷

2.0 Summary

The Hungarian accession to the EU led to updated legislation according to the goals of EU. The policies and plans are, according to the Hungarian Government, set up to follow the waste hierarchy, and in recent years the country has made reasonable progress towards meeting the targets in the directive. Yet there is still work to be done to improve the waste management situation. According to official data returns to Eurostat, Hungary is some way behind the average performance of the EU-28 in respect of packaging recycling. Under the European Commission's Circular Economy package, the targets will increase in the future, further increasing the challenges in the future.

The Hungarian system is very much state-controlled with relatively little private sector involvement. However the current waste management plan is under revision, and as such there is an opportunity now to tackle some of the deficiencies in the existing systems. A review of waste infrastructure will also take place before 2017.

The positive aspects in the policies put in place to date include the following:

- The separate collection of dry recyclables and green waste is being implemented across the country.
- A landfill fee was put in place in 2013. The initial idea was to raise the fee radically in a few years' time. However, the fee has not been changed since 2014 and is at 21.4 EUR/tonne for MSW.
- Some households appear to be being directly charged for the collection of residual waste although it is not clear to what extent this covers the actual cost of collection and treatment, and the proportion of population covered by this system is also not clear.
- According to the NWMP, there are ambitions to create reuse centres and to hold information campaigns to spur waste prevention activities. There is an extensive National Waste Prevention Plan, although quantitative targets are absent.

⁸⁵ Department for Environmental Development, Ministry of Agriculture, 2015-10-27

⁸⁶ EEA (2013) p 14

⁸⁷ Nyilas, Krisztina, National Inspectorate For Environment and Nature - National Waste Management Directorate, 2015-10-27

There is, however, still work to be done to make sure that Hungary is able to meet the targets in both the Landfill Directive and the Waste Framework Directive. The main deficiencies of the waste management situations are listed below:

- The status of the ban on landfilling of untreated waste is unclear, raising questions concerning enforcement capability / capacity. Although the data suggests a substantial reliance on landfilling, it is important to note that some of this material has been treated by an MBT system, and this does not appear to be accounted for in the data. However, the performance of these systems is unclear, and much material appears to be landfilled without going through the MBT systems.
- It is not clear whether the landfill fee covers the full cost of landfilling, and there still appear to be problems with illegal dumping. No landfill tax is in place.
- The extent of the coverage of separate collection for households is not entirely clear. However, there is an apparent reliance on bring-based systems for source segregated materials in some areas, and no clear plan yet in place with regard to the roll out of door to door collections. Bring systems deliver poor quality recyclables, and reliance on this approach makes it difficult to introduce other policies such as PAYT systems which drive high recycling performance.
- Particularly given the previous point, and the apparent frequency of the collection points (which seems to be low according to the available data), the stated performance of the separate collection systems seems very high, suggesting there may be issues with the data collated on the performance of these systems. There are also discrepancies between the national datasets and the calculations sent to Eurostat.
- There is very little collection of food waste or other organic material, and no clear plans are in place to introduce these systems; without this, it is likely to be difficult for Hungary to meet future landfill directive targets. The existing composting facilities appear to have difficulty in finding markets for the product, suggesting work on market development is required, along with the introduction of further collection systems.
- There appears to be relatively little involvement of the private sector and there seems to be a lack of technical and financial capacity in government bodies at the local level to carry out their obligations.
- The quantities of collected and recycled glass is extremely low and as the National Collection and Recovery plan is stating that the fees from the producers are too low to cover the cost of management.

The identified weaknesses will feed into the roadmap of the Hungarian waste management, which includes recommendations to improve performance thereby ensuring compliance with the EU Directives.

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