

WASTE MANAGEMENT

The Hungarian waste management regime is being developed continuously, especially from the beginning of the EU accession procedure in the late 90s. The framework legislation has been established by the Act No. 53 of 2000 on Waste Management in conformity with the EU Directive 2006/12/EC on waste. The mid-term waste management strategy of Hungary is defined in National Waste Management Plans (NWMP) prepared for six-year periods, of which the first planning period 2003-2008 has been just expired. The new NWMP for 2009-2014 is under elaboration parallel to the upgrading of the Waste Management Act in order to harmonize national legislation, targets and implementation tools to the new EU Waste Framework Directive 2008/98/EC.

Sustainable development is one of the basic elements of Hungarian waste management policy and of the NWMP. The main principle is to follow and enforce the classic waste management hierarchy: prevention – recovery - disposal. In order to ensure the sustainable use of natural resources it supports the use of technologies generating minimum amount of waste with economical material and energy consumption, thereby preventing the pile-up of waste; utilization of materials producing less hazardous waste, representing lower risk; as well as recovery the generated waste materials and energy to the fullest extent by substitution of non-renewable natural resources with secondary raw materials; and finally disposal of non-recoverable waste in an environmentally friendly manner, that does not cause hazards to human health and to the environment and - as part of this - reduction to the minimum of waste landfill.

• Concrete actions taken and specific progress made in implementation

The main measures to be taken have been defined in the NWMP. Major tasks to be solved or managed by the implementation of NWMP are as follows:

- reduce both the high absolute value of waste generation and the high proportion of waste generated, as compared to the production value;
- increase the ratio of recovery which is low for most waste types, encourage economical material and energy recovery;
- minimize the currently high proportion of waste disposal by landfill;
- gradually eliminate the sources of hazard and the contaminated sites which resulted from the unsuitable waste disposal of the past decades;
- promote - through market-conform economic instruments - the solutions that are beneficial in the long term, in accordance with the principles of sustainable development, and the construction of modern, complex waste management systems, having special regard to recovery;
- promote research and technical development in line with achieving the goals of waste management;
- strengthen the co-operation between the state and the private sector, to support the local or local community initiatives, having special regard to selective waste collection and recovery;

- increase the efficiency of education, training and awareness raising activities.

Annual waste production and the GDP

	2000	2004	2005	2006	2007	2008*
Total waste production, 1000 tons/year	40 700	30 045	28 558	26 607	25 858	25 000
Total waste production, % of the previous year	90.4	93.9	95.1	93.2	97.2	96.7
GDP, % of the previous year	105.2	104.8	104.1	103.9	101.3	100.08

Source: Ministry of Environment and Water

* Estimated value

Through legislative, economic and public relation measures, progress made in a number of areas:

- The annual amount of waste decreased by 38% (from some 41 million tons to 26 million tons) from 2000 to 2007, but municipal solid waste generation changed from 4.55 million tons to 4.59 million tons. In the same time period the GDP increased by about 35%.

Generation of municipal solid waste (MSW) and the GDP

	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Generation of MSW, 1000 tons/year	4 552	4 603	4 646	4 693	4 591	4 646	4 711	4 594	4 400
Generation of MSW, % of the previous year	101.1	101.1	100.9	101.0	97.8	101.2	101.4	97.5	95.8
GDP, % of the previous year	105.2	104.1	104.4	104.2	104.8	104.1	103.9	101.3	100.08
Real income, % of the previous year	101.5	106.4	113.6	109.2	98.9	106.3	103.5	96.0	n.a.

Source: Hungarian Central Statistical Office, Ministry of Environment and Water

* Estimated value

- The recovery rate of total generated waste decreased from 27% to 25% but on municipal waste this rate increased from 3% to 20% between 2000 and 2007.
- The rate of disposal by landfills decreased from 52% to 45% between 2000 and 2007 but municipal waste landfill rate changed from 85% to 75%.

Waste treatment in Hungary (without waste water sludge)

	2004		2005		2006		2007	
	tons	%	tons	%	tons	%	tons	%
Recycling	8 892 837	29.8	7 630 197	26.9	6 697 451	25.2	4 629 467	18.4
Energy recovery	911 322	3.1	1 271 472	4.5	1 627 237	6.1	1 354 938	5.4

Incineration	169 852	0.6	52 756	0.2	101 434	0.4	77 935	0.3
Landfill	17 415 456	58.3	13 602 494	48.0	14 288 930	53.7	11 325 094	45.0
Other	2 461 033	8.2	5 799 114	20.4	3 892 287	14.6	7 758 880	30.9

Source: database of the Waste Information System (HIR)

Treatment of municipal solid waste (1000 tons)

	2000	2001	2002	2003	2004	2005	2006	2007
Recycling	350	360	400	490	540	444	490	554
Energy recovery	340	350	280	240	155	303	389	383
Landfill	3 760	3 800	3 890	3 900	3 857	3 859	3 792	3 428
Other	n.a	n.a	n.a	n.a	40	40	40	229

Source: Hungarian Central Statistical Office, Ministry of Environment and Water

* The fluctuation of the values of 'energy recovery' is caused by the stopping the operation of the Waste Recovery Plant of Budapest and restarting it due to reconstruction.

- In accordance with the EU regulations Hungary introduced the extended producer responsibility for certain products (waste electrical and electronic equipment - WEEE, packaging, end of life vehicles - ELV, batteries), and fulfilled the EU obligations on the reduction of heavy metal contents of the goods available on the market, and waste collection and recovery targets.
- To promote the collection and recycling of certain products' waste a special product fee is used (on packaging, electronics, accumulators, tyres, oil-products, advertising papers, cooling agents); producers pay reduced product fee if they collect and recover the waste of their products. Steps were also taken to promote the use of reusable packaging and regulations encouraged the bottle deposit scheme.
- Special subsidizing systems were elaborated
 - = for companies to introduce and develop low-waste and recovery technologies, and for marketing environmental-friendly, and/or recycled products,
 - = to help R+D+I of such kind of technologies and products,
 - = to develop complex regional municipal solid waste management systems, including the investments in reuse centers, home-composting, selective collection systems, composting and up-to-date landfill sites.

The base of these supporting programs is the National Development Plan; the sources are covered by different EU funds and the self-contribution of the investor.

• **Lessons learned**

Prevention:

Since 2000 the volume of total waste generated has decreased significantly because of the decrease of the waste-producing economic activities ("production waste"). The decrease of production waste was due to the decline of the main waste generating sectors (for example mining, metallurgy), the application of modern production methods and new technologies and the development of industries of low material input and high skill requirements (electronics and car manufacturing).

The amount of collected municipal waste increased slightly between 2000 and 2007. The reason was the unfavorable change in consumer preferences and the development of public services in the field of municipal solid waste collection and management. No real

link between GDP and municipal waste generation observed but there is a strong link between real wages and the level of consumption.

Recovery:

Recovery industry is very sensitive to the actual raw-material market circumstances; when demand and prices of secondary raw materials were higher, the recovery rate reached 35%. Parallel to the economic situation, especially during the crisis, recovery rates fall dramatically.

On the other side legislation on producers' responsibility can considerably raise demand for the development of selective collection and recovery industry, especially when it is combined with economic incentives.

• **Recent trends and emerging issues**

In the recent global economic market and fiscal system the natural trends show that increasing consumption generates more household waste, but economic trends and efficiency motivations push the production sector generating less waste.

Increasing of recovery depends mainly on demand of raw materials and on consumption patterns.

In Hungary the main tasks in the next couple of years would be:

- elaboration of an effective national waste prevention program,
- raising demand on secondary raw materials and recycled products,
- increasing the recovery of construction/demolition waste,
- increasing the use of waste as fuel, replacing non-renewable energy sources,
- minimization of landfill in general and those of biodegradable waste in particular.

• **Major constraints and challenges**

Waste management policy has to concentrate on changing economic and fiscal interests, and at the same time on changing consumption patterns. For this sake strengthened legislation is needed with quantitative targets, enforcement and wider use of producers' responsibility and more effective economic incentives.

Trends can be changed or turned only if external environmental costs are built into prices of primary goods, making more expensive the use of them, and raising demand on secondary goods. At the same time subsidies are continuously needed for the development and marketing of durable and reusable, easily recyclable products, and for low-waste or non-waste technologies and for recycling industry.

Changing public and private procurement patterns is also needed to encourage the use of secondary raw materials and recycled products.