WASTE MANAGEMENT

In Romania, the Ministry of Environment and Forests promoted public interest documents, such as eco-guide public official Eco-tourist guide and guide eco-citizen, containing recommendations on:

- Energy consumption reduction and energy waste and waste material avoidance, applied to both institutions and citizens;
- Separate collection of all types of waste, especially Waste Electrical and Electronic;
- Limiting environmental pollution through voluntary actions for waste management, reducing resource consumption, using biodegradable materials, the practice of responsible eco-tourism activities as against nature;

National policy documents governing waste management comprise two main components: *National Waste Management Strategy and National Waste Management Plan*, which are basic tools for EU waste policy implementation in Romania. Both documents are currently under revision process to establish updated targets and actions, for reducing the amount of waste disposed by landfilling through effective selective collection, recycling and restoring to economic systems of materials and energy from waste. Based on these documents, regional plans and county waste management were prepared, these being useful in development projects funded by European funds and optimization of investment and operating costs in waste management at district and regional level.

Basic principles of environmental policy in Romania are set in accordance with European and international provisions, ensuring protection and nature conservation, biological diversity and sustainable use of its components.

Currently, the waste hierarchy shall apply as a priority order, in four steps to according Directive 2006/12/CEE, but by the end of 2010, following the transposition of the new waste directive 2008/98/CEE there will be applied the five-step waste hierarchy: prevention, preparation for reuse, recycling, other recovery and disposal operations.

Prevention, reduction and a good environmental management of hazardous waste

To prevent, minimize and environmental sound management of hazardous waste, the Ministry of Environment and Forests established appropriate measures to prevent waste generation and its harmfulness and recovery of waste by recycling, reuse or any other process related to obtaining secondary raw materials or use of certain categories of waste as energy source.

Preventing waste generation and harmfulness is done by:

•clean and economic development technologies in natural resources utilization;

•technical development and marketing of products hence: by their characteristic of manufacturing, using and disposal after use, they do not contribute at all or in a low degree to increasing of the risk of pollution and the harmful content of waste;

•appropriate development techniques in order to dispose or neutralize dangerous substances which can be founded in waste for recovery.

Waste producers or holders of legal persons, must ensure, under its own power, recovery or waste disposal or to assure own waste teaching unit authorized for recovery or disposal, these obligations are determined by environment authorization. They also need to prevent waste production as much as possible due to the operation of industrial plants installations.

Batteries and accumulators. The legal act for waste batteries and accumulators management, a high level of collection and recycling of their governing banning the marketing of batteries and accumulators containing hazardous substances is promoted. At the moment of the first placing on the market of any type batteries and accumulators, manufacturers are required to register in the Register of manufacturers of batteries and accumulators made by the Ministry of Environment and Forests.

Registration number received from Register of Manufacturers of batteries and accumulators is communicated to the distribution manufacturer network. The used car batteries are collected through the „deposit" system, where distributors are required to take used car batteries to customer and apply the „deposit" system to selling price of car batteries.

Removal of PCB/PCT. National provisions on the disposal of PCBs (polychlorinated biphenyls)/PCT (polychlorinated biphenyls) applies to all equipment and waste or other materials containing designated compounds in concentrations of less than 50 parts per million (ppm) for a volume exceeding 5 sqdm (dm^3).

In order to avoid adverse effects on human health, on assets and on the environment, compounds like polychlorinated biphenyls are subject to a special management and control on the Elimination of disposal plans approved with phased completion dates until December 2010.

Waste Oils. National legislation for the management of waste oils applies the 'polluter pays' principle according to which the producer is responsible to provide collection and recovery systems for waste oils, for the types of oils sold, within the quantities placed on the market.

Currently a high importance is given to waste oils recovery by regeneration, if the impurification degree and the nature of the impurities found in the waste oils allow the specific operations to be applied. Co-incineration of waste oils is an alternative recovery method, where technical and economic conditions lead to unsustainable regeneration,

which is used as fuel to heat recovery. Disposal of waste oils by incineration should be done only when the regeneration and/or co-incineration are not applicable, complying with the limit values for the emissions as foreseen in the specific legislation.

Romania seeks to implement the concept of 'industrial symbiosis' which is a new way of looking at economic activity in which environmental concerns (so expensive) are transformed into opportunities for profit and benefit by coordinated action of several operators and communities.

Industrial symbiosis therefore includes separate traditional industries, but also other organizations from other sectors, in a collective approach involving physical exchange of material, energy, water and/or secondary products, and sharing of goods, logistics and expertise and encourages technology transfer.

Waste disposal. In Romania the quantity of hazardous waste generated continuously decreased in past few years. Waste disposal was done mainly by landfilling and incineration. The national legislation on waste disposal, including obtaining environmental permitting for development of these activities, transposes the EU legislation.

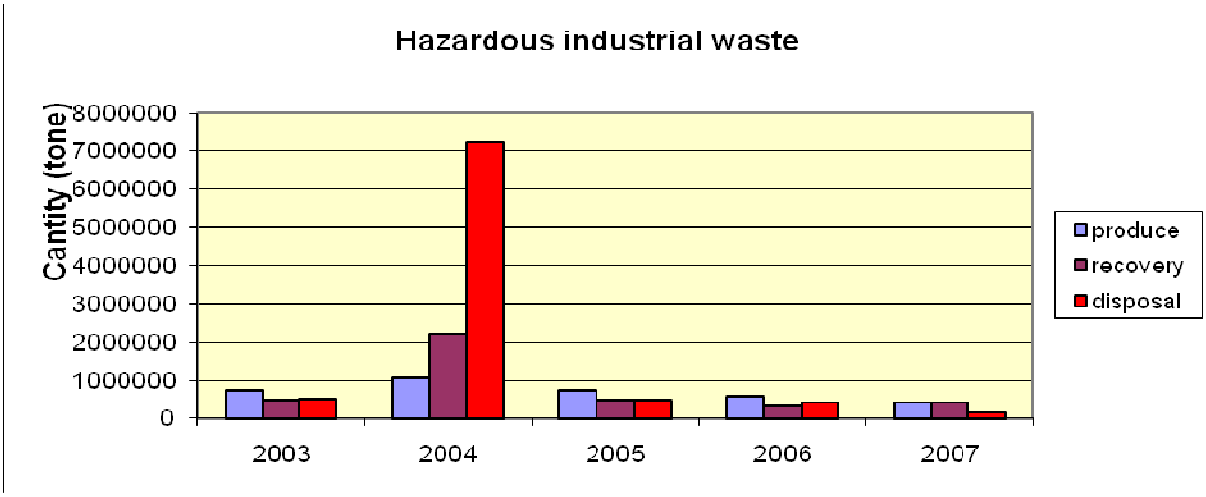
These activities are performed in a way that possible negative effects on environmental, in particular the pollution of surface water, groundwater, soil, and air, and the global environment, including the greenhouse effect, as well as any resulting risk to human health are reduce as far as possible.

According to the legislation in force, the waste producers have the responsibility management of waste including waste prevention, recycling, and disposal.

In 2007, over 419,000 tonnes of hazardous waste were generated; representing a 0.15 % of total of generated waste. Most of this hazardous waste was co-incineration or incineration in the producer own facilities or private operators' facilities, or landfilled.

Table 2. Management of hazardous industrial waste, 2003-2007

Year	Total of produced hazardous industrial waste	Total of recovered hazardous industrial waste	Total of disposed hazardous industrial waste
2003	730226	461628	514004
2004	1048400	2218000	7244000
2005	736787	458508	461668
2006	555227	337149	410787
2007	407837	406450	149824



Note:

1. contains no data of waste from extractive industry
2. there are taken in consideration **the stocks** also, but they aren't separately mentioned.

Table 3. Management of non-hazardous industrial waste, 2003-2007

Year	Total of produced non-hazardous industrial waste	Total of recovered non-hazardous industrial waste	Total of disposed non-hazardous industrial waste
2003	29808434	23605705	16178892
2004	27467200	15180500	16172900
2005	126884825	19731371	142149227
2006	111938335	12067947	106397558
2007	56831280	19154798	41080788

Note:

1. contains no data of waste from extractive industry.
2. there are taken in consideration **the stocks** also, but they aren't separately mentioned

Illegal transboundary movement of hazardous wastes

Since 15 July 2007, Romania applies the Regulation (EC) no. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste. The national legislation sets certain measures for enforcement of Regulation (EC) no.1013/2006 and establishes the responsible public authorities for supervision and control of import, export and transit of waste.

The Regulation transposes the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal adopted on 22 March 1989, to which Romania adhered by the Law no. 6/1991. The Amendment, as well as the Annexes VIII and IX of the Basel Convention, was ratified by Romania through the Law no. 265/2002.

Romania declares that the import and the disposal on its national territory of hazardous wastes and other wastes, can take place only with the prior approval of the competent Romanian authorities.

The import of any kind of wastes for final disposal is prohibited until the end of the transition period obtained by Romania through Accession Treaty to the EU.

Environmentally sound management of solid (non-hazardous) wastes and waste water, in the context of integrated planning and management of land resources

In order to comply with legislative requirements in waste management in Romania, there are developed integrated waste management projects under the National Waste Management Plan and Regional Waste Management Plans. Thus, funds have been allocated for the **development of integrated waste management systems and rehabilitation of historically contaminated sites (EUR 1.168 billion, of which the EU grants EUR 0.934 billion)** and to invest in the purchase of containers for selective collection, garbage trucks, sorting facilities, composting and recycling, construction of warehouses at European standards, closing old and non-complying landfills.

These projects are developed and implemented in urban and rural areas, at county/regional level and seek to extend/complete waste management systems so as to cover the whole country and population. Given the exclusive attributions of local authorities to implement and ensure the operation of integrated waste management in each locality, they are required to impose fees/charges for waste collection and landfill, which vary according to each types of waste.

Regarding the prevention of packaging waste, producers/importers of packaged products must take all measures to ensure compliance with relevant harmonized European standards or do not exceed specific consumption package/type of material/product.

At the same time, the actions in the National Waste Management Plan focus on encouragement of prevention of packaging waste through source reduction in the amount of packaging products.

In accordance with the 'polluter pays' principle, costs of waste disposal operations shall be supported by owner of waste or by the previous owner of waste or manufacturer of the resulting waste product. When the producer / holder of waste are unknown, costs of cleaning and environmental cleanup are supported by local government authority. After identifying the holder, he has to support both the costs incurred by the local government and those relating to actions taken for identification.

Table 4. Indicators for municipal waste generation

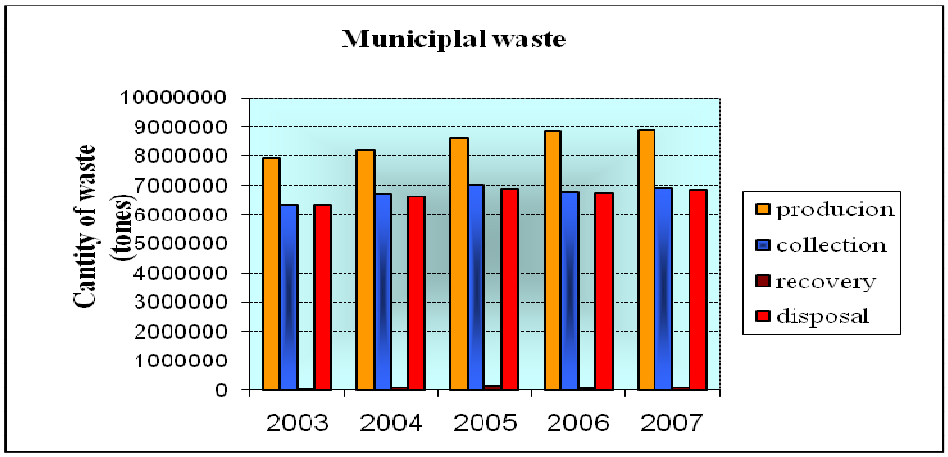
Municipal waste *(kg/inh.year)*	**Year**
364	2003
378	2004
398	2005
410	2006
412	2007

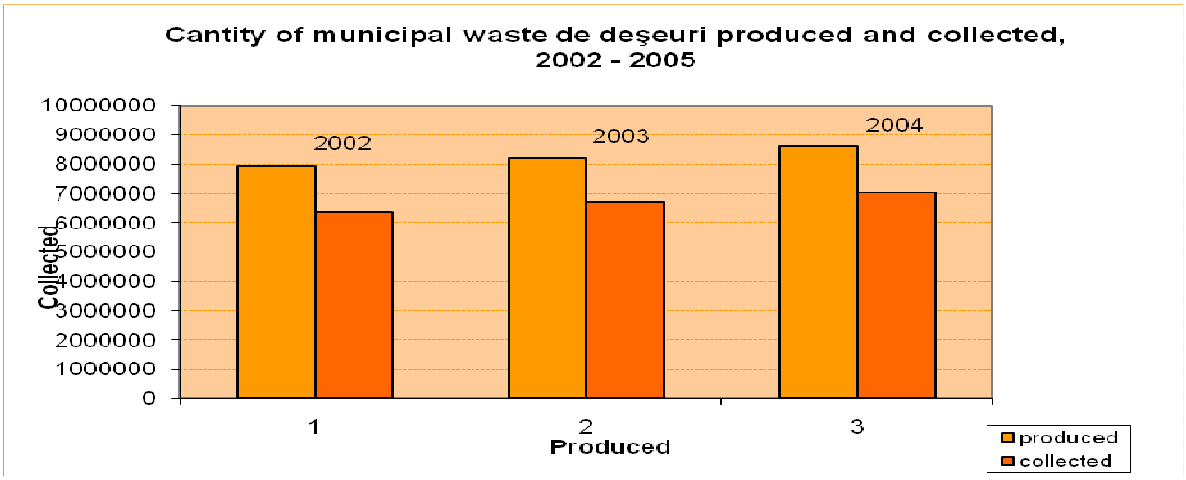
Romania has fulfilled the obligations of EU Accession Treaty on packaging waste recycling and recovery.

In parallel, there are education and information campaigns on waste management issues, noting that it is not only sufficient infrastructure development but also public involvement, to achieve effective systems of integrated waste management.

Table 5. Quantity of municipal waste: generated, collected, recovered and disposed, for 2003-2007

Municipal waste produced	**Municipal waste collected**	**Municipal waste recovered**	**Municipal waste disposed**	**Year**
7923787	6353315	19768	6333547	**2003**
8198800	6716600	83800	6632800	**2004**
8640000	7025256	145412	6879844	**2005**
8866424	6808837	40945	6767892	**2006**
8895190	6921660	72566	6849094	**2007**





Sludge from waste treatment plants in cities and other wastewater treatment plants with a composition similar to municipal wastewater can be used in agriculture only if they comply with national technical rules which transpose Directive 86/278/CE. In Romania, national limits for heavy metals contained in sludge are more stringent than UE directive. Typically, sewage sludge is dehydrated and then stored. Only a small amount of sludge is used in agriculture.

Table 6. Management of sludge, 2003-2007

Year	Dry sludge (tones)	Recovery sludge on non-agriculture lands (tones)	Incineration (tones)	Landfill disposal or owner's storage (tones)
2003	206146.01	4474	10.8	201661.21

2004	166599.24	1915	3868	160816.24
2005	134322.26	3824	750	129748.26
2006	137145.76	1720	0	135425.76
2007	138849	282	0	138567

Energy recovery from waste is one of the objectives of the National Waste Management Strategy.

In Romania, co-incineration of waste in cement kiln is made according to conditions specified in the environmental permit. The main condition is that waste recovery should not contribute to a significant increase in emissions and content of harmful substances in the end product.

Creating and implementing an integrated waste management system is also supported by economic and legal instruments integrated with other sectoral policies. Financing resources for an integrated waste management system is required by the law through:

- Environment Fund
- In addition to the state budget based on programs in the amounts allocated to this destination
- Local budgets
- Public-Private Partnership
- Structural Funds
- Banks
- Private investors
- Sectoral research and development programs
- ISPA, PHARE

In Romania, the Environment Fund Administration is the economic-financial tool for supporting and achieving priority environmental projects in accordance with rules and standards in force.

Environmental Fund contributes through:

- controlling and reducing air, water, soil pollution, including the use of clean technologies;
- protection of natural resources, waste management, including hazardous waste;
- protection and biodiversity conservation;
- education and public awareness on environmental protection.

Currently, Romania does not participate in the negotiations concerning the transport and storage of **radioactive wastes** from the European Union. Romania takes part, through the Nuclear and Radioactive Wastes Agency (ANDR), in the ERDO project (European Repository Development Organization) which aims to analyze to possibility of developing a regional geologic storage deposit for highly active wastes.

The ERDO group (European Repository Development Organization), formed by 8 states, (The Netherlands, Italy, Poland, Romania, Slovakia, Lithuania, Slovenia and Bulgaria) analyzes at a theoretical level the feasibility of implementing the idea of a regional storage deposit.

The ERDO discussions don't approach the possibility of storage EU radioactive wastes in Romania because the amended Law no. 111/1996 concerning the safety, regulation, permitting and control of the nuclear activities prohibits the import of radioactive wastes. Romania continues its national program of building a deep-seated geologic storage deposit exclusively for the wastes produced in the country.

Currently, Romania has only one radioactive wastes storage deposit, the National Radioactive Wastes Deposit from Băița Bihor, where low and medium radioactive wastes with short life-cycle resulting from medicine, research and traditional industry are stored.

The radioactive wastes generated by the Nuclear Electric Plant from Cernavodă, currently being in intermediary storage in special installations at the location of the plant, require the construction of two new final storage deposits: a final surface storage space for the low and medium active wastes and a deep seated geologic storage space for those highly active. The storage for the low and medium active wastes will be operational until 2014 and the geologic storage for the highly active wastes will be finalized in 2055.

Both final deposits will have as funding source the Radioactive Wastes Management Fund, established in 2007 through the Ordinance no. 11/2003 amended and detailed in the Government Decision no. 1080/2007, thus complying with the principle 'the polluter pays'.

Constraints and challenges of waste management policies

Waste management policy, eco-design and clean technologies promotion are direct influenced by economical changes and financing possibilities.

Moreover, potential valuable resources for recycling and composting reach final disposal, and one of Romania's challenges in order to minimise this loss is to change mentality of people, public authorities and economic sector toward an environmental friendly behaviour.

Romanian Government supports the development of clean environmental technologies by financing programmes; strengthen of institutional capacity, bilateral cooperation and participation at international conferences.

Various research programmes run by the Ministry of Education Research, Youth and Sport aim developing of new environmental friendly technologies as well as new technologies on waste recovery.

Technical and scientific data regarding environmental aspects of waste are available on environmental authority web sites. The results of communication sessions, national and

international conferences are also available on organisers' web sites (e.g. universities, NGOs, associations, others).