# NATIONAL WASTE MANAGEMENT STRATEGY

**CONTENT**

# 1 INTRODUCTION

The National Waste Management Strategy was developed by the Ministry of Environment and Water Management, according to the responsibilities reverting to this institution following the transposition of European legislation in the field of waste management and according to the provisions of Emergency Government Ordinance no. 78/2000 on the regime of waste, approved with amendments and completions by Law no. 426/2001. The strategy was drafted for the interval 2003 – 2013, and it is to be revised on a regular basis, according to technical progress and environment protection requirements.

The National Waste Management Strategy aims to create the necessary framework for the development and implementation of an environmentally and economically sound integrated waste management system.

The National Waste Management Strategy (NWMS) shall be approved by Government Decision and shall be reviewed on a regular basis.

The provisions contained in NWMS shall apply to all types of waste defined in Emergency Government Ordinance no. 78/2000 on the regime of waste, approved with amendments and completions by Law no. 426/2001.

For the purposes of this Strategy, each type of waste generated on the country's territory shall be formally classified into one of the following categories:

- **Municipal and similar waste**: the totality of waste generated in the urban and rural areas, which comes from households, institutional and commercial sources, service providers (household waste), street waste collected from public spaces, streets, parks, green spaces, construction and demolition waste, sludge from the treatment of urban waste waters;
- **Production waste**: the totality of waste generated by industrial activities; it falls into two categories: **non-hazardous production waste** and **hazardous production waste;**
- **Waste generated by medical activities:** this is waste generated in hospitals, clinics, medical offices and it falls into two categories:
  - **hazardous medical waste** which includes infectious waste, medical sharps, pathological wastes, including organs, waste coming from infectious disease departments, etc. and
  - **similar wastes**, including other categories of waste outside the categories mentioned above, falling into the category of **similar wastes.**

# 2 LEGISLATIVE FRAMEWORK

## 2.1 Correlation with the Environment Policy

The government programme lays down three basic principles for Romania's environment policy, according to European and international law: ensuring the protection and conservation of nature, the protection of biological diversity, and the sustainable use of their components.

The Government adopted the National Strategy for Sustainable Development in 1999, and the Strategy for Environment Protection in 2002. The latter documents lays down the following general principles:

- Conservation and improvement of the people's health status;
- Sustainable development;
- avoiding pollution by preventive measures;
- Conservation of biological diversity and ecological reconstruction of damaged systems;
- Conservation of the cultural and historical heritage;
- The "polluter pays" principle;
- Stimulation of activities for environmental recovery.

The objectives in the field of environment protection were defined based on the following criteria:

- Maintaining and improving human health and the quality of life;
- Maintaining and improving the productive and support capacity of national ecological systems;
- Ensuring protection against natural disaster and accidents;
- observing the provisions of international conventions and international Programmes on environment protection;
- Maximising the cost-benefit ratio;
- Integration of Romania into the European Union.

The strategy includes short-term objectives to be achieved by 2005, medium-term objectives to be achieved by 2010, and long-term objectives to be achieved by 2013. Outside the objectives laid down in the Strategy, the National Waste Management Plan also contains targets for the management of all types of waste, as well as the measures needed to achieve those targets.

The National Action Plan for Environment Protection includes 286 priority projects – 233 projects responding to short-term objectives, and 53 projects responding to medium-term objectives. The Plan also includes several projects concerning waste management.

## 2.2 Current State-of-Play in Waste Management

The general legislative framework for environment protection in Romania includes the following:

- The Law on Environment Protection no. 137/1995, republished with subsequent amendments and completions;
- The Law on Waters, no. 107/1996, with subsequent amendments and completions;
- Emergency Government Ordinance no. 243/2000 on the protection of the atmosphere, approved with amendments and completions by Law no. 655/2001;
- Emergency Government Ordinance no. 78/2000 on the regime of waste, approved with amendments and completions by Law no. 426/2001;
- Government Decision no. 918/2002 on establishing the frame procedure for environmental impact assessment and for approving the list of public or private projects to be submitted to that procedure;
- Emergency Ordinance no. 34/2002 on the prevention, reduction and integrated control of pollution, approved with amendments by Law no. 645/2002;
- Government Decision no. 856/2002 on the keeping of waste management records and approving a list of wastes, including hazardous waste.

The *acquis communautaire* in the field of waste management includes 16 acts, most of which have already been transposed in the Romanian legislation, as indicated in the table below.

| European Law | Romanian law |
|---|---|
| **Framework Directive on waste no. 75/442/EEC, as amended by Directive no. 91/156/EEC** | Law no. 426/2001 on approving Emergency Ordinance no. 78/2000 on the regime of waste;<br>Government Decision no. 123/2003 on approving the National Waste Management Plan – stage-level. |
| **Directive no. 91/689/EEC on hazardous waste** | Law no. 426/2001 on approving Emergency Ordinance no. 78/2000 on the regime of waste |
| **Directive no. 75/439/EEC on the disposal of waste oils, as amended by Directive no. 87/101/EEC and**<br>**Directive no. 91/692/EEC** | Government Decision no. 662/2001 on the disposal of waste oils, as completed and amended by Government Decision no. 441/2002;<br>Government Decision no. 1159/2003 on amending Government Decision no. 662/2001 on the disposal of waste oils. |
| **Directive no. 91/157/EEC on batteries and accumulators containing certain dangerous substances**<br>**Directive no. 93/86/EC on the marking of batteries** | Government Decision no.1057/2001 on the regime of batteries and accumulators containing dangerous substances |
| **Directive no. 2000/76/EC on the incineration of waste** | Government Decision no. 128/2002 on the incineration of waste<br>Order of the Ministry of Wasters and Environment Protection no. 1215 of 10 January 2003 on approving the Technical Norms on waste incineration |
| **Directive no. 94/62/EC on packaging and packaging waste** | Government Decision no. 349/2002 on managing packaging and packaging waste<br>Order of the Ministry of Waters and Environment Protection no. 1190/2002 on the procedure for reporting information on packaging and packaging waste |
| **Directive no. 96/59/EC on the disposal of biphenyls and polychlorinated terphenyls (PCB and PCT)** | Government Decision no. 173/2000 on the special management and control of polychlorinated biphenyls and other similar compounds<br>Order of the Ministry of Waters and Environment Protection no. 279/2002 on establishing the Technical Secretariat for the Management and Control of PCBs and PCTs within the Directorate for the Management of Waste and Dangerous Chemical Substances |

| European Law | Romanian law |
|---|---|
| **Decision no. 2000/532/EC, as amended by Decision no. 2001/119 establishing a list of wastes (replacing Decision no. 94/3/EC establishing a list of wastes Decision no. 94/904/EC establishing a list of hazardous waste).** | Government Decision no. 856/2002 on keeping waste management records and approving a list of wastes, including hazardous waste |
| **Regulation no. 259/93 on the supervision and control of shipments of waste within, into and out of the European Community** | Government Decision no. 1357/2002 on establishing the public authorities responsible for the supervision and control of shipments of waste within, into and out of the country<br>Government Decision no. 228/2004 on the supervision and control of shipments of non-hazardous waste destined for import, inward processing and transit<br>Law no. 6/1991 on Romania's accession to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal |
| **Directive no. 86/278/EEC on the protection of the environment, and n particular of the soil, when sewage sludge is used in agriculture** | Order of the Minister of Agriculture, Forests, Waters and Environment no. 49/2004 on approving the technical norms for the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture |
| **Directive no. 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, as well as Directive no. 2002/96/EC on waste electrical and electronic equipment (WEEE)** | (to be drafted in 2005) |
| **Directive no. 78/176/EEC on waste from the titanium dioxide industry**<br>**Directive no. 82/883/EEC on procedures for the surveillance and monitoring of environments concerned by waste from the titanium dioxide industry**<br>**Directive no. 92/112/EEC on procedures for harmonising the programmes for the reduction and eventual elimination of pollution caused by waste from the titanium dioxide industry** | (to be drafted in 2005) |

Beside the content of the *acquis communautaire* and the framework legislation for environment protection, the Romanian legislation also includes several other normative acts containing provisions referring to waste management, as follows:

- Government Ordinance no. 87/2001 on public sanitation services in settlements, approved by Law no. 139/2002, with subsequent amendments and completions;
- Government Ordinance no. 21/2002 on the administration of rural and urban settlements, approved with amendments and completions by Law no. 515/2002;
- Government Decision no. 188/2002 for approving the norms for discharging waste waters in the aquatic environment;
- Order no. 536/1997 of the Minister of Health for approving the Norms of hygiene and recommendations for the population's living environment;
- Order no. 219/2002 of the Minister of Health and Family for approving the Technical norms for the management of waste arising from medical activities, and the Data collection methodology for the national database on waste arising from medical activities;
- Law no. 98/1994 on identifying and sanctioning contraventions to the legal norms in the field of hygiene and public health, with subsequent amendments and completions;
- Government Decision no. 170/2004 on the management of used tyres;
- Emergency Government Ordinance no. 16/2001 on the management of recyclable industrial waste, approved with amendments by Law no. 465/2001 and further amended by Emergency Government Ordinance no. 61/2003;
- Joint Order of the Minister of Industry and Resources and the Minister of Public Administration no. 265/503/2001 for approving the Norms concerning the procedure to grant, extend, suspend or cancel the authorisation to collect recyclable industrial wastes from natural persons, as well as the Norms concerning the procedure to grant, extend, suspend or cancel the authorisation to valorise recyclable industrial waste;
- Joint Order of the Ministry of Agriculture, Forests, Waters and Environment no. 2/2004, of the Ministry of Transport, Constructions and Tourism no. 211/2004, of the Ministry of Economy and Trade no. 118/2004 on approving the Procedure for the regulation and control of waste shipments on Romania's territory;
- Government Decision no. 228/2004 on the supervision and control of shipments of non-hazardous waste destined for import, inward processing and transit.

The competent authority with tasks and responsibilities for waste management is the Ministry of Environment and Water Management; other public authorities with responsibilities in the field of waste management are: the Ministry of Health, the Ministry of Economy and Trade, the Ministry of Transport, Constructions and Tourism, the Ministry of Administration and Internal Affairs, the Ministry of National Defence.

## 2.3 Considerations on the State of Implementation

Based on the Framework Directive and Directive no. 1996/61/EC (on integrated pollution prevention and control - IPPC), a first National Waste Management Strategy was developed that brought together the sectoral strategies of the ministries involved. The County Waste Management Plans were also developed starting with 2001. Based on the National Strategy and the County Plans, the first National Waste Management Plan was developed, as a stage-level plan that was adopted by Government Decision no. 123/2003. These national waste management documents were later improved by the contribution of extended working groups, whose membership included representatives of the central authorities, employers' and professional associations, associations of local authorities, universities and NGOs, as well as German, French, British and Japanese experts involved in PHARE twinning programmes and the technical assistance programme offered by JICA.

After the drafting of the National Waste Management Strategy and Plan is completed, the next step will be to draft the Regional Waste Management Plans by the year 2005, based on the Drafting Guide for Regional Waste Management Plans.

The following steps have been made towards the implementation of ***Directive no. 99/31/EC on the landfill of waste***:

- establishing the legislative framework by adopting Government Decision no. 162/2002 and approving the Orders of the Minister of Waters and Environment Protection no. 867/2002 and no. 1147/2002;
- assigning responsibilities for planning and authorisation to public authorities;
- identifying, compiling an inventory and classifying existing municipal and industrial waste disposal sites;
- planning the closure and conditioning of existing municipal waste disposal sites and starting new sites;
- evaluating the types and quantities of waste existing in industrial deposits.

The following steps were made for implementing ***Directive no. 2000/76/EC on the implementation of waste***:

- setting up the legislative framework by adopting Government Decision no. 128/2002 and approving Order of the Minister of Waters and Environment Protection no. 1215/2003;
- establishing the competent authorities;
- setting up a system complying with the provisions of the Directive on granting authorisations for incineration plants;
- identifying and compiling inventories of the existing and potential incineration and co-incineration plants for the recovery and disposal of municipal, clinical and industrial waste;
- examining the current situation of existing incinerators;
- setting up an effective waste delivery and receipt system;
- laying down the operating conditions of incineration facilities;
- defining the calculation methods for concentrations and other limit values and measuring emissions.

The following steps were completed in the implementation of ***Directive no. 94/62/EC on packaging and packaging waste***:

- setting up the appropriate legislative framework by adopting Government Decision no. 349/2002, as well as by approving Order of the Minister of Waters and Environment Protection no. 1190/2002 and Order of the Minister of Economy and Trade no. 128/2004;
- setting up an effective system for the reuse / collection and recycling / recovery of post-consumption packaging and of packaging waste;
- monitoring pilot projects and disseminating results;
- adopting standards concerning the addition of certain heavy metals to packaging materials;
- adopting harmonised European standards whose provisions refer to packaging and packaging waste;
- establishing the obligation of economic operators involved in the packaging sector to report relevant data to the competent authority;
- setting up a database on packaging and packaging waste, in accordance with the requirements of Commission Decision no. 97/138/EC.
- the establishment of a legal person, ECO-ROM Ambalaje S.A. for the organisation of a recovery and recycling system for packaging waste, which is to take over the responsibilities of economic operators that market packaged products.

# 3 GENERAL DATA ON WASTE MANAGEMENT

Waste management includes all the waste collection, transport, treatment, recovery and disposal. **Responsibilities for waste management activities shall be assigned to waste generators, according to the "polluter pays" principle or, as the case may be, to waste producers, according to the "producer responsibility" principle.**

**Organising the collection, transport and disposal of municipal waste is one of the obligations of local public administration.**

Municipal waste includes the following categories:

- Household waste;
- Industrial and institutional waste, similar to household waste;
- Commercial waste;
- Street waste;
- Park and garden waste;
- Sewage sludge from the purification of urban waste water;
- Construction and demolition waste.

In urban areas, the management of municipal waste is performed in an organised system, by specialised services belonging to the municipalities or to sanitation operators. Waste management services are provided based on contracts concluded with individual generators, but this system only covers 95% of all municipal waste generators in the urban areas.

In rural areas, there are in general no organised waste management services, transport to disposal sites being performed individually by the waste generators. Only a limited number of rural settlements are covered by organised waste management services, particularly those located in the immediate vicinity of urban centres.

The total quantity of municipal and similar waste (along with construction and demolition waste, and sewage sludge from urban water purification plants) generated in 2002 was estimated to 9.58 million tons, the share of household waste in the total quantity being estimated taking into account the values of the average generation index (1.04 kg/inhabitant/day in the urban area and 0.15 kg/inhabitant/day in the rural area). The total value of household and similar waste generated in 2002 was therefore estimated to 7.66 million tons (out of which only 5.72 million tons were collected by the sanitation services).

The average composition of household waste generated in 2002 was the following:

- Paper and paperboard: 11 %
- Glass: 5 %
- Metals: 5 %
- Plastic: 10 %
- Textiles: 5 %
- Biodegradable organic waste: 51 %
- Other waste: 13 %.

Household waste collection is non-selective (there are only a small number of pilot projects doing that) and is disposed of by landfilling (in urban waste disposal sites); according to estimates, a mere 5 % of the total quantity of household waste is collected with a view to recovery.

**The obligation to organise the management of production waste reverts to the generator**. Economic operators use their own means for the purpose, or they conclude contracts with specialised operators. There are currently very few operators involved in the management of production waste; moreover, their services are limited both concerning the waste types they can attend to, and their working capacities.

In 2002, the total quantity of waste resulting from productive activities reported was 372.4 million tons, that is **24.5 millions tons of (hazardous and non-hazardous) production waste** and 347.9 million tons of waste that do not fall under the terms of Law no. 426/2001 on the regime of waste. Most of the waste in the latter category is represented by waste generated by mining activities.

The highest shares of production wastes were accounted for by the power generation sector (11.7 million tons), the metallurgical industry (4.8 million tons), the food industry (1.2 million tons) and the chemical/petrochemical industry (1.1 million tons).

About 33 % of the total quantity of production waste was recovered, while the remaining 67% was disposed of (by landfilling or incineration).

Approximately 600,000 tons of hazardous waste was generated in the year 2002, which accounts for 2.5% of all production waste. Out of the total hazardous waste generated, 43 % was recovered and 57 % was disposed.

Starting with 1995, the collection and processing of information referring to the types and quantities of waste was done according to the European requirements concerning classification (European Waste Catalogue, replaced in 2002 by the List of wastes and hazardous wastes) and reporting to EUROSTAT and the European Environment Agency (by means of the EIONET network).

There were significant variations in the quantities of waste generated from one year to the next, for several reasons, such as:

- the changes that occurred in the activities of industrial operators and service providers;
- recording or failing to record tailings from ore excavation as waste;
- the system used for evaluating waste quantities by each generator (weighing or estimation);
- different awareness levels among waste generators concerning the importance of data collection and reporting;
- different levels of control by the local environment authorities concerning the fulfilment of their data collection and reporting obligations by waste generators;
- periodic changes in the survey questionnaires (for instance, the modification of the 2003 questionnaire used to report data on the year 2002).
- The variations recorded between the years 2001 and 2002 may also be due (beside the other reasons mentioned above) to the fact that the new European waste list was introduced in the mean time.

# 4 STRATEGIC PRINCIPLES AND OBJECTIVES

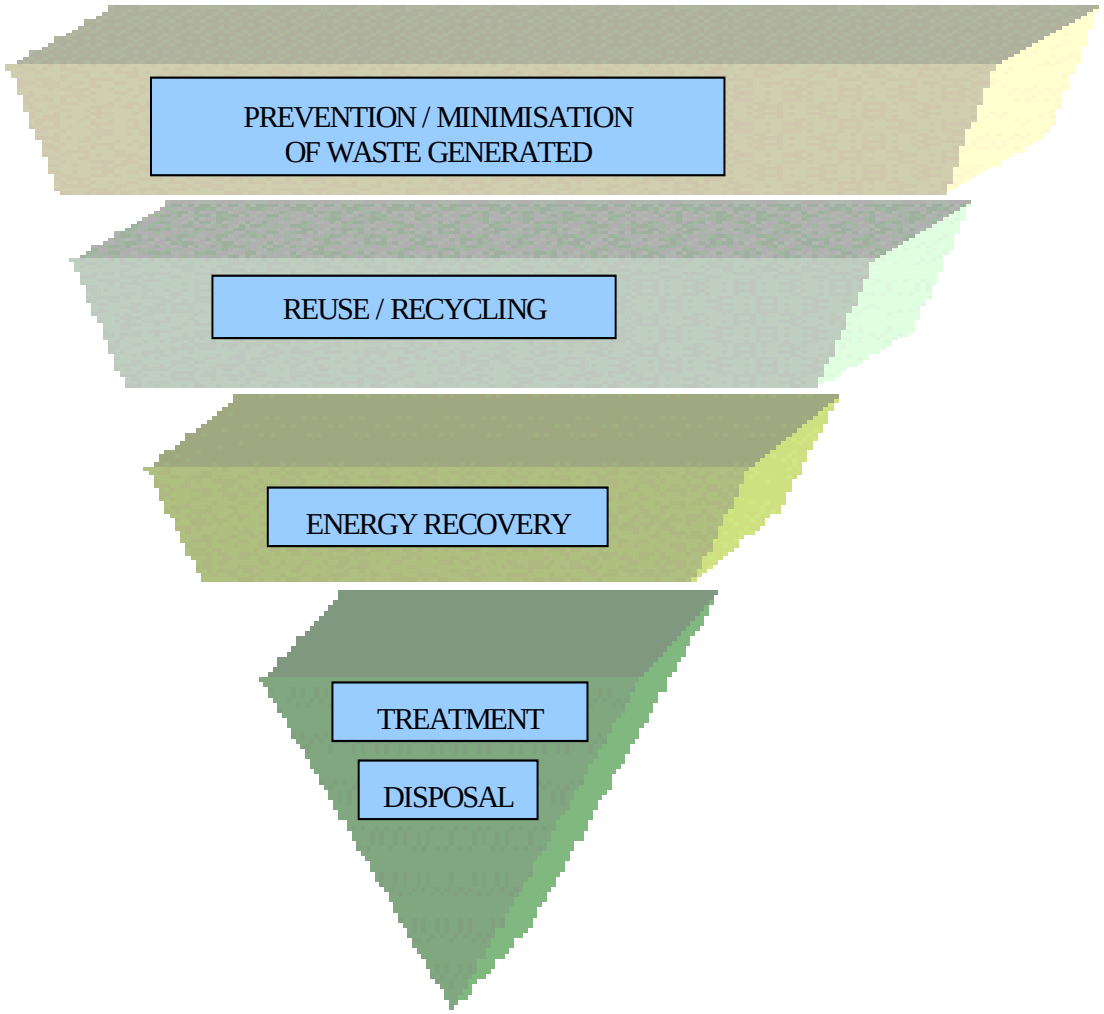
The **principles** underlying waste management activities are listed below.

- The principle of the ***protection of primary resources*** – it is formulated in the wider context of sustainable development, and it underlines the need to minimise and enhancing efficiency in the use of primary resources, particularly non-renewable resources, with an emphasis on the use of secondary raw materials.
- The principle of ***preliminary measures***, in correlation with the principle of ***BATNEEC*** ("Best available techniques not entailing excessive costs") – states that the following main aspects need to be considered in any activity (including waste management): the current state of technological development, requirements concerning environment protection, selection and implementation of economically feasible measures.
- The *prevention* principle – sets up a hierarchy of waste management activities, in the decreasing order of attention they should be given: avoiding waste arisings, minimising quantities, treatment for recovery, treatment and disposal in environmentally sound conditions.
- The ***polluter pays*** principle, correlated with the principle of ***producer responsibility*** and ***user responsibility*** – states the need for setting up an adequate legislative and economic framework, according to which waste management costs should be covered by the generators of waste.
- The *substitution* principle – emphasises the need to replace dangerous raw materials by non-dangerous raw materials, thus avoiding hazardous waste arisings.
- The *proximity* principle, correlated with the ***autonomy*** principle – states that waste should be treated or disposed of as close as possible to the site where it was generated; moreover, exports of hazardous waste should only be made to countries where appropriate disposal technologies are available, and with the observance of the conditions applying in international waste trade.
- The *subsidiarity* principle (in correlation with the proximity principle and the autonomy principle) – states that responsibilities should be assigned in such a way as to allow waste management decisions to be taken at the lowest administrative level above the source of generation, but based on uniform regional and national criteria.
- The *integration* principle – states that waste management is an integral part of the social-economic activities generating the waste.

Waste management **options** should be considered in the decreasing order of priorities presented below:

- Waste prevention– by application of “clean technologies” in waste generating activities;
- Reducion of waste quantities – by implementing best practices in every waste generating activity;
- Valorification – by reuse, material recycling and energy recovery;
- Disposal – by incineration and landfill.

**Figure 1: Priorities in waste management**



The general objective of the National Waste Management Strategy is to develop an economically efficient, integrated waste management system which ensures the protection of human health and the environment.

The **objectives** of the National Waste Management Strategy are shown in Tables 1 – 4 below, as follows:

| | |
|---|---|
| Table 1 | General Strategic Objectives for Waste Management |
| Table 2 | Specific Strategic Objectives for Certain Waste Flows |
| Table 3 | General Strategic Objectives for the Management of Hazardous Waste |
| Table 4 | Specific Strategic Objectives for Certain Flows of Hazardous Waste |

**Table 1 General Strategic Objectives for Waste Management**

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 1.Policies and legislative framework | 1.1. Harmonising national policies and legislation in the field of waste management with European policies and legislation, as well as with the provisions of the international agreements and conventions Romania is a party to. | 1.1.1. Setting up an appropriate legislative framework for the entire waste management system, with a clear specification of all the "parties involved (professional associations, employers' associations, NGOs, trade unions, the civil society, etc.)", their responsibilities and obligations. |
| | 1.2. Integrating waste management related issues in sectoral and company policies. | 1.2.1. Correlating domestic policies and normative acts with European and international legislative provisions in the field of waste management. |
| | 1.3. Improving efficiency in the implementation of waste management legislation. | 1.3.1. Granting more importance to the implementation of legislation and monitoring implementation. |
| | | 1.3.2. Strengthening institutional capacity |
| | | 1.3.3. Encouraging private initiative in the field of waste management |
| 2. Institutional and Organisational Matters | 2.1 Adapting and developing the institutional and organisational framework in order to meet national requirements and make them compatible with European structures. | 2.1.1. Creating the conditions for improving the efficiency of institutional structures and the systems related to waste management activities. |
| | | 2.1.2. Strengthening the administrative capacity of government institutions at all levels (national, regional, county, local) by developing skills and assigning responsibilities in the implementation of the legislation |
| 3.Human Resources | 3.1. Securing a sufficient number of human resources, with adequate professional training | 3.1.1. Securing sufficient numbers of well-trained staff, equipped with adequate facilities at all levels, both in the public and private sectors. |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 4.Financing of the waste management system | 4.1. Setting up and using economic-financial systems and mechanisms for waste management while observing all general principles, in particular the “polluter pays” principle | 4.1.1.Stimulating the setting up and development of a viable market for recyclable waste |
| | | 4.1.2. Making best use of all the funding available (environment fund, private funds, structural funds, etc.) for capital expenditures in the field of waste management |
| | | 4.1.3. Supporting a system for the management of municipal waste (calculating taxes, special programs using budget money) |
| | | 4.1.4. Supporting a system for the management of hazardous production waste. |
| | | 4.1.5. Supporting a system for the management of special waste flows: accumulators and batteries, waste oils, used tyres, packaging, waste electrical and electronic equipment, end-of-life vehicles, etc.<br>(deposit systems, raising awareness among producers, eco-financing mechanisms) |
| | | 4.1.6.Using national and international funds (ISPA, etc.) |
| | | 4.1.7.Financing a national monitoring system in the field of waste management |
| | | 4.1.8.Financing the intermediary securing and final rehabilitation of orphan contaminated sites |
| 5. Raising awareness among all parties involved | 5.1 Promoting an information, awareness-raising and incentive system for all parties involved | 5.1.1.Intensifying communication among all parties involved |
| | | 5.1.2.Organising and implementing public education and awareness-raising programmes |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 6. Information and data system on waste management | 6.1. Obtaining complete and accurate data and information corresponding to the national and European reporting requirements | 6.1.1. Improving the national system for data and information collection, processing and analysis on waste management |
| 7. Preventing waste generation | 7.1. Maximising the prevention of waste generation | 7.1.1. Promoting and applying the principle of prevention in industry |
| | | 7.1.2. Promoting and applying the principle of prevention among consumers |
| 8. Valorising the useful potential in wastes | 8.1. Exploiting all the technical and economic possibilities for waste recovery | 8.1.1. Developing a market for secondary raw materials and encouraging the use of products made of recycled materials |
| | | 8.1.2. Decoupling waste generation from economic growth and achieving a global reduction of waste quantities |
| | 8.2. Developing materials and energy recovery activities | 8.2.1. Giving priority to materials recovery to the extent that technical and economic constraints allow it in such a way as to safeguard human health and the environment |
| | | 8.2.2. Promoting energy recovery in highly energy-efficient installations, in case the recovery of materials is not feasible from a technical and economic perspective, there is a positive energy balance resulting from incineration and a possibility to make efficient use of the energy obtained |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 9. Waste collection and transport | 9.1. Providing collection and transport services to as many waste generators as possible–setting up systems covering the entire area of waste generators | 9.1.1. Expanding waste collection systems in the urban and rural areas |
| | | 9.1.2. Optimising transport schemes |
| | 9.2. Selecting the best options available for waste collection and transport, in order to allow effective recovery | 9.2.1. Formulating unitary principles and requirements for the operation of all sanitation operators |
| | | 9.2.2. Separating hazardous waste streams from non-hazardous waste streams |
| | | 9.2.3. Introducing and expanding selective waste collection at the source |
| | | 9.2.4. Ensuring more efficient control for domestic and transboundary waste transport activities |
| 10. Waste treatment | 10.1. Promoting waste treatment in order to ensure rational environmental management | 10.1.1. Encouraging waste treatment with a view to:<br>▪ enhancing recovery<br>▪ facilitating handling<br>▪ reducing the hazardous nature of waste<br>▪ reducing the final disposal of waste in such a way as to safeguard human health and the environment |
| 11. Disposal | 11.1. Disposing of waste according to the requirements of the waste management legislation in order to protect human health and the environment | 11.1.1. Securing the necessary waste disposal capacities by giving priority to waste disposal installations at area level. |
| | | 11.1.2. Closing down waste disposal sites failing to meet EU requirements. |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 12. Research and development | 12.1 Encouraging and supporting Romanian research in the field of integrated waste management | 12.1.1. Adapting clean production technologies to local conditions. |
| | | 12.1.2. Developing new technologies for the neutralisation and disposal of hazardous waste. |
| | | 12.1.3. Improving availability for developing new solutions in waste prevention, minimisation, recycling and disposal. |
| | | 12.1.4. Disseminating information on new solutions and new technologies. |

**Table 2 Specific Strategic Objectives for Certain Waste Flows**

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 1. Waste from agriculture, animal breeding, forestry and wood processing, food industry | 1.1. Vegetable waste, faeces, sawmill waste, wood waste | 1.1.1. Enhancing the efficiency of controls concerning the disposal of untreated wastes | |
| | | 1.1.2. Encouraging recycling by means of aerobic and anaerobic treatment | |
| | | 1.1.3. Supporting energy recovery in case materials recovery is not feasible technically and economically, in such a way as to safeguard human health and the environment | |
| 2. Waste from the generation of heat and power, incineration and co-incineration | 2.1. Slag, bottom ash, fly ash, waste gypsum from thermal power stations | 2.1.1. Supporting materials and energy recovery | |
| | 2.2. Slag, bottom ash, fly ash, waste gypsum from incineration and co-incineration installations | 2.2.1. Treatment before disposal in case recovery is not possible | |

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 3. Construction and demolition waste | 3.1. Construction and demolition waste (whether contaminated or uncontaminated) | 3.1.1. Supporting the reuse and recycling of uncontaminated construction and demolition waste | 3.1.1.1. Materials and/or energy recovery and recycling of demolition waste |
| | | 3.1.2. Treating contaminated construction and demolition waste with a view to recovery or disposal | |
| | | 3.1.3. Developing a facility system allowing adequate disposal | |
| | 3.2. Soil excavation waste (contaminated and uncontaminated) | 3.2.1. Reuse and recycling, to the extent the excavation waste is not contaminated | |
| | | 3.2.2. Developing facilities for the treatment of contaminated soil excavation waste with a view to recovery or disposal, and adequate disposal | |
| | 3.3. Road construction waste | 3.3.1. Reuse and recycling, to the extent it is not contaminated | |
| | | 3.3.2. Treatment of contaminated road construction waste for recovery or disposal, and adequate disposal | |

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 4. Sludges from water purification plans | 4.1. Sludges from water purification plants | 4.1.1. Pressing or pre-treatment for energy recovery by co-incineration in cement kilns | |
| | | 4.1.2. Preventing uncontrolled use on soils | |
| | | 4.1.3. Preventing sludge discharge in surface waters | |
| | | 4.1.4. Ensuring, to the extent it is possible, the recovery of sludge and using it in agriculture for the purposes of fertilisation or improvement | |
| 5. Biodegradable waste | 5.1. Biodegradable waste: household waste, as well as similar waste from commercial, industrial, service, and institutional sources, street waste, urban sewage sludge) | 5.1.1. Reducing the quantity of biodegradable waste by recycling and processing (minimising the amount of organic matter in the waste in order to reduce the quantity of leachate and landfill gas) | |

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 6. Packaging waste | 6.1. Ambalaje | 6.1.1. Improving the level of packaging reuse and recyclability | |
| | | 6.1.2. Optimising the quantity of packaging per packaged product | |
| | 6.2. Packaging waste | 6.2.1. Reducing the quantity of packaging waste generated by product unit | |
| | | 6.2.2. Increasing the quantity of packaging waste collected, as well as the efficiency of selective waste collection | |
| | | 6.2.3. Optimising the materials recovery schemes | |
| | | 6.2.4. Setting up and optimising energy recovery schemes for packaging waste (where materials recovery would not be “feasible”) | |
| 7. Tyres | 7.1. Tyres | 7.1.1. Enhancing the materials and energy recovery of used tyres | |

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 8. End-of-life vehicles | 8.1. End-of-life vehicles | 8.1.1. Setting up a collection network for end-of-life vehicles, adequately represented across the country's territory | |
| | | 8.1.2. Providing owners of end-of-life vehicles with the possibility to deliver their vehicles free of charge to collection / recovery facilities | |
| | | 8.1.3. Restricting the use of heavy metals in the manufacturing of vehicles | |
| | | 8.1.4. Encouraging the setting up of recovery facilities for end-of-life vehicles | |

| Waste category | Sub-category | Main objective | Subsidiary objective |
|---|---|---|---|
| 9. Electrical and electronic equipment | 9.1. Electrical and electronic equipment (EEE) | 9.1.1. Reuse of EEEs and recycling of WEEEs | 9.1.1.1. Encouraging the designing and production of EEEs that facilitate their repair, improvement, reuse, dismantling and recycling |
| | | 9.1.2. Reducing dangerous components in EEEs | 9.1.2.1. Encouraging research for replacing dangerous materials with materials having a low impact on human health and the environment |
| | 9.2. Waste electrical and electronic equipment (WEEE) | 9.2.1. Selective and separate collection of WEEE | 9.2.1.1. Collecting a quantity of at least 4 kg/inhabitant/year of waste electrical and electronic equipment starting with 2007 |
| | | | 9.2.1.2. Encouraging consumers to return WEEEs |
| | | 9.2.2. Setting up the necessary facilities for the dismantling, recycling, treatment and disposal of WEEE | |

**Table 3 General Strategic Objectives for the Management of Hazardous Waste**

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 1. Policies and legislative framework | 1.1 Setting up a system for the management of hazardous waste that is environmentally and economically sound and socially fair (e.g.: applying the polluter pays principle) | 1.1.1. Setting up administrative systems and financial mechanisms that provide holders of hazardous waste with incentives to comply with legal obligations |
| | | 1.1.2. Preparing the transposition and constant, step-by-step implementation of EU directives |
| 2. Institutional and organisational considerations | 2.1. Strengthening the administrative capacity of government institutions | 2.1. 1 Strengthening the administrative capacity of all government institutions (at national, regional and county levels) with responsibilities in implementing legislation on the management of hazardous waste |
| 3. Human resources | 3.1. Securing a sufficient number of human resources, with adequate professional training at all level | 3.1.1. Securing sufficient and well trained staff at all levels, both in the public and private sectors:<br>▪ strengthening the capacity of EPAs concerning the implementation of legal provisions on hazardous waste.<br>▪ strengthening the capacity of waste generators for the environmentally sound management of hazardous waste. |
| 4. Preventing and minimising waste generation | 4.1. Promoting and applying the prevention principle in the generation of hazardous waste, as well as of the proximity principle, to the extent that is possible | 4.1.1. Supporting the implementation of waste minimisation and enhanced treatment techniques specific to various categories of hazardous waste |
| | 4.2. Minimising the impact of hazardous waste on human health and the environment | 4.2.1. Training and enhancing the responsibility of economic operators concerning the undertakings and installations falling under the terms of Law no. 645/2002 on approving and amending Government Ordinance no. 34/2002 |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 5. Materials recovery (recycling) and energy recovery | 5.1. Minimising the impact of hazardous waste on public health and the environment | 5.1.1. Promoting the recycling of non-ferrous materials using the existing foundries |
| | | 5.1.2. Promoting heat and energy recovery from hazardous waste in cement kilns |
| 6. Waste collection and transport | 6.1 Setting up collection and transport services for hazardous waste | 6.1.1 Setting up a collection and transport system for hazardous waste that meets the generators' needs |
| | | 6.1.2 Monitoring the collection and transport of hazardous waste in accordance with EU requirements and developing existing facilities. |
| 7. Waste treatment and disposal | 7.1. Disposing of hazardous waste in an environmentally sound, economically efficient and socially acceptable manner. | 7.1.1 Encouraging the treatment of hazardous waste for:<br>▪ recovery (if feasible)<br>▪ facilitating manipulation<br>▪ favouring disposal<br>▪ reducing their dangerous nature |
| | | 7.1.2 Ensuring adequate conditions for waste treatment and disposal facilities |
| | | 7.1.3 Making sure facilities (installations) are designed, built and operated in compliance with EU requirements |
| | | 7.1.4. Facilitating exports in adequate conditions of certain hazardous wastes for an environmentally sound management |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 8. Management of contaminated land | 8.1 Safeguarding public health by preventing/minimising the exposure of the population to contaminated land, contaminated water and contaminants themselves | 8.1.1. Achieving quality objectives for surface waters and groundwater, and ensuring the fulfilment of Romania's international obligations concerning the conservation of biodiversity and the prevention of environmental incidents on the River Danube (Danube Framework Convention) |
| | | 8.1.2. Making available to the public information on contaminated lands |
| | 8.2 Preventing new land contamination | |
| 9. Financing the management system for hazardous waste | 9.1. Developing and efficient implementation of economic and financial systems and mechanisms for the management of hazardous waste while observing general principles, particularly the polluter pays principle. | 9.1.1 Developing and efficient implementation of economic and financial instruments that can ensure a viable market for hazardous production waste by the application of the polluter pays principle and the producer responsibility principle. |
| | 9.2 Improving the access of the industrial sector to the financing they need for efficient and economically justified investments in environment protection, in using clean production technologies and upgrading existing installations | 9.2.1. The capacity of commercial banks to finance (grant credits for) environment projects under favourable terms. |

| Domain / Activity | Main objectives | Subsidiary objectives |
|---|---|---|
| 10. Information system for waste management | 10.1. Developing an information system for hazardous waste in accordance with international and EU requirements | 10.1.1. Improving the authorisation and control system in the domain of hazardous waste |
| | | 10.1.2. Improving the information and data processing system at regional and national levels in order to support planning in the field of waste management (and strategy development) |
| | | 10.1.3. Making available to the public information on the management of hazardous waste |
| | 10.2. Implementing a data reporting system for waste management in compliance with EU requirements | |
| 11. Raising awareness | 11.1. Raising public awareness concerning the impact of hazardous waste on public health and the environment | 11.1.1. Raising awareness concerning the consequences of applying inadequate practices in the management of hazardous waste from the point of view of environment protection |
| | | 11.1.2. Raising awareness concerning the need to apply best practices in the management of hazardous waste |
| | 11.2. Raising awareness concerning the benefits of implementing clean practices and technologies | 11.2.1. Raising awareness of the industrial sector concerning clean production and IPPC provisions |
| | | 11.2.2. Raising awareness among EPAs and central authorities concerning clean production and IPPC provisions |
| | 11.3. Raising awareness concerning the obligation to observe the producer responsibility principle and the polluter pays principle | 11.3.1. Improving industrial performance by observing the producer responsibility producer. |

**Table 4** **Specific Strategic Objectives for Certain Flows of Hazardous Waste**

| Categories of hazardous waste | Sub-categories | Main objectives | Subsidiary objectives |
|---|---|---|---|
| 1. Waste containing PCB/PCT | • Used oils containing PCB/PCT<br>• Equipment containing PCB/PCT | 1.1 Management of this waste according to the provision of Romanian law harmonised with EU law | 1.1.1 Regular updating of the national inventory of waste containing PCB/PCT |
| | | | 1.1.2 Enhancing responsibility among economic operators concerning the banning of equipment that contains PCB/PCT |
| | | | 1.1.3 Safe disposal of waste containing PCB/PCT without affecting public health and the environment |
| | | | 1.1.4 Eliminating existing stocks using the best technically and economically sound methods in the shortest while possible |
| 2. Expired waste pesticides | • Expired pesticides identified before 30 May 2002 that are the object of the PHARE 2002 project of the MAWF<br>• Other waste pesticides and waste pesticide packaging identified outside the PHARE 2002 project | 2.1 Managing these substances according to the applicable legal requirements | 2.1.1 Regular updating of the national inventory of expired pesticides |
| | | | 2.1.2 Safe disposal without affecting public health and the environment |
| | | | 2.1.3 Eliminating existing stocks using the best, technically and economically sound methods in the shortest while possible |

| Categories of hazardous waste | Sub-categories | Main objectives | Subsidiary objectives |
|---|---|---|---|
| 3. Waste chlorinated organic solvents | | 3.1.Reducing the quantity of waste generated | 3.1.1 Reducing solvent consumption and waste solvent generation by using clean technologies |
| | | | 3.1.2. Reducing the quantity of waste chlorinated organic solvents generated by recovery and reuse |
| | | 3.2.Reducing emissions in the environment | 3.2.1 Reducing waste solvent discharges in the environment |
| | | 3.3. Disposing of this waste category in adequate conditions | 3.3.1 Setting up an adequate management and disposal system for waste chlorinated organic solvents |
| 4. Used oils | | 4.1. Enhancing the collection of used oils from users / the public | 4.1.1 Eliminating the illegal used oil market, whose use has a negative impact on public health and the environment |
| | | 4.2. Reducing the impact of these substances on public health and the environment by improving the management of used oils | 4.2.1 Encouraging the use of oils in an environmentally sound manner in cement kilns |

| Categories of hazardous waste | Sub-categories | Main objectives | Subsidiary objectives |
|---|---|---|---|
| 5. Waste arising from medical activities and research institutions (clinical waste) | • Infectious waste (codes 18.01.01 ; 02 and 03) arising in medical and research units<br>• Hazardous waste, other than infectious waste | 5.1. Separate collection of infectious and hazardous waste (other than infectious waste) | 5.1.1. Reducing the quantities of infectious and dangerous clinical waste by hospitals by means of separate collection (by waste categories) and final disposal in an environmentally sound and economically efficient manner |
| | | 5.2. Separate collection of non-hazardous waste | |
| | | 5.3. Safe disposal of clinical waste without affecting staff or public health | 5.3.1 Setting up environmentally sound temporary waste disposal sites for infectious and hazardous wastes |
| | | | 5.3.2 Banning the landfilling of hazardous wastes without pre-treatment, before it is fully inert. Moreover, pre-treatment methods for infectious and hazardous waste that transfer pollutants to other environments shall also be banned. |

| Categories of hazardous waste | Sub-categories | Main objectives | Subsidiary objectives |
|---|---|---|---|
| 6. Batteries and accumulators | • Batteries and accumulators | 6.1. Management of spent batteries and accumulators in compliance with the specific requirements of the national legislation, harmonised with European legislation | 6.1.1. Restricting the marketing of batteries and accumulators containing certain dangerous substances |
| | | | 6.1.2. Separate collection for spent batteries and accumulators |
| | | | 6.1.3. Recovery of reusable materials contained in spent batteries and accumulators |
| | | | 6.1.4. Disposal of the non-reusable components of spent batteries and accumulators in conditions safeguarding human health and the environment |

# 5 INSTRUMENTS FOR ACHIEVING STRATEGIC OBJECTIVES

**Regulatory instruments** – the legislative framework for waste management activities shall be completed and improved as follows:

- regulatory acts with an environmental impact;
- regulatory acts concerning activities for materials/energy recovery;
- regulatory acts concerning the responsibilities of waste generators/producers of goods that become waste;
- regulatory acts concerning the responsibilities of the public authorities and the relations that need to be defined between those authorities and other factors involved.

**Economic instruments** meant to ensure that the cost of waste management activities is reflected both in product prices, and in the producer's market status. The correct application of financial incentives, on the one hand, and penalties, on the other, is going to encourage waste management activities by prevention, reduction and recovery, at the same time leading to the elimination of waste management practices that have an impact on the environment or that contradict the "polluter pays" principle.

**Statistical instruments** based on which to obtain correct data referring to waste generation and management, which allow the evaluation of the current state-of-play and the formulation of the objectives to achieve. The improvement and adaptation of the current data collection, validation and reporting system both at county and national level needs to be improved.

**Other instruments**

- implementing existing legislation and monitoring implementation;
- drafting waste management plans;
- setting up committees that include representatives of all the factors involved in the management of certain types of waste;
- performing product life cycle assessments and eco-balances, with a view to implementing best practices in waste management.

# 6 FACTORS INVOLVED

The achievement of national and European objectives in the field of waste management practically calls for the involvement of the entire society, represented by:

- central and local public authorities (environment, administration, health, industry, finances);
- waste generators (natural and legal persons);
- professional associations and research and development institutes;
- the civil society (consumers, non-governmental organisations, etc.).

# 7 CONCLUSIONS

- The National Waste Management Strategy was developed by the Ministry of Environment and Water Management, according to the responsibilities reverting to this institution following the transposition of European legislation in the field of waste management and according to the provisions of Emergency Government Ordinance no. 78/2000 on the regime of waste, modified and approved by Law no. 426/2001.

- The aim of the National Waste Management Strategy is to create the necessary framework for developing and implementing an integrated waste management system, which is also environmentally and economically sound.

- The provisions in the NWMS apply to all categories of waste defined in Emergency Government Ordinance no. 78/2000 on the regime of waste, modified and approved by Law no. 426/2001.

- The competent authority with tasks and responsibilities for waste management is the Ministry of Environment and Water Management; other public authorities with responsibilities in the field of waste management are: the Ministry of Health, the Ministry of Economy and Trade, the Ministry of Transport, Constructions and Tourism, the Ministry of Administration and Internal Affairs, the Ministry of National Defence.

- Starting with 1995, the collection and processing of information referring to the types and quantities of waste was done according to the European requirements concerning classification (European Waste Catalogue, replaced in 2002 by the List of wastes and hazardous wastes) and reporting to EUROSTAT and the European Environment Agency (by means of the EIONET network). The information collected and reported refers to: urban waste (household waste, park and garden waste, sludge from the treatment of urban waste waters), (hazardous and non-hazardous) industrial waste, waste generated by medical activities.

- Waste management activities are conducted based on the following principles: the principle of protection of primary resources, the principle of preliminary measures correlated with the use of BATNEEC, the prevention principle, the “polluter pays” principle correlated with the principle of producer responsibility and of user responsibility, the principle of substitution, the principle of proximity correlated with the principle of autonomy, the principle of subsidiarity, the principle of integration.

- The options available for waste management are, in the decreasing order of priorities, the following: prevention or reduction of waste arisings; reuse/recycling; materials/energy recovery; treatment/disposal.

- The objectives of the National Waste Management Strategy are the following: general objectives for waste management; specific objectives for the management of special waste flows; general objectives for the management of hazardous waste; specific objectives for the management of special flows of hazardous waste.

- In order to achieve the objectives formulated in the strategy, the following instruments are needed: regulatory instruments, economic instruments, statistical instruments, other instruments.

- The achievement of national and European objectives in the field of waste management practically calls for the involvement of the entire society, represented by: central and local public authorities; waste generators; professional associations and research institutes; the civil society.