

GOVERNMENT OF ROMANIA

IMPLEMENTATION PLAN
for
Council Directive 91/271/EEC
concerning urban waste water treatment,
as amended by Directive 98/15/EC

October 2004

Implementation Plan for Directive 91/271/EEC concerning urban waste water treatment

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ABBREVIATIONS

BOD₅	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
GD	Governmental Decision
ICIM- Bucharest	National Institute of Research and Development for Environmental Protection
LPA	Local Public Administration
MAI	Ministry of Administration and Interior
MeB	Mechanical Biological Treatment
MEWM	Ministry of Environment and Water Management
MPF	Ministry of Public Finance
MTCT	Ministry of Transport, Construction and Tourism
ANSRC	National Authority for Public Services of Communal Management
NARW	National Administration “Romanian Waters”
p.e.	Population equivalent
UWWT	Urban Waste Water Treatment
WD	Water Directorate
WWTP	Waste Water Treatment Plant

1. INTRODUCTION

This document presents the steps Romania is planning to take for the implementation of Directive 91/271/EEC concerning urban waste water treatment, the time schedule and costs.

The objective of the Directive is to protect the environment from the adverse effects of discharges of urban waste water and of waste water from certain industrial sectors (mainly processing and food industry).

The Directive sets out a number of requirements concerning collection systems, treatment and discharge of waste water from urban agglomerations, as well as of the biodegradable waste water from certain industrial sectors.

Member States must ensure that urban waste water from agglomerations of more than 2.000 p.e. is collected and treated prior to discharge according to the specific standards and deadlines.

As regards the treatment objectives, secondary (i.e. biological) treatment is the general rule for the agglomerations of less than 10,000 p.e., with additional nutrient removal in sensitive areas (tertiary treatment) and for agglomerations of more than 10,000 p.e. For certain marine areas primary treatment might be sufficient.

The deadlines for the implementation of the Directive vary depending on the size of the agglomeration and the characteristics of the receiving waters.

1.1. Main Aims and Provisions of the Directive

1.1.1. Planning

- Identify sensitive areas and less sensitive areas, in accordance with specified criteria, and review the identification of these areas every four years (Articles 5 and 6 and Annex II).
- Establish a technical and financial programme for the implementation of the Directive (Article 17).

1.1.2. Regulation

- Provide prior regulation and/or specific authorisation by the competent authority of the appropriate body for all discharges of urban waste water (Article 12, Annex IB) and industrial waste water from certain sectors mentioned in the Directive (Article 13, Annex III), as well as for all discharges of industrial waste water into urban waste water systems, which should meet specific requirements identified in the Annex I C of the Directive (Article 11). These regulations and/or authorizations should be reviewed and, if necessary, adapted at regular intervals.
- Ensure that collecting systems for urban waste water are provided for all agglomerations of more than 2000 p.e. (Article - 3 and Annex IA).
- Ensure that waste water treatment is provided for all these agglomerations, at the level of treatment specified and within the set deadline:
 - Secondary treatment, as basic rule for the level of treatment, i.e. biological treatment (Article-4 and Annex IB, table 1);

Table 1. Requirements for discharge from urban waste water treatment plant

<i>Parameters</i>	<i>Concentration</i>	<i>Minimum percentage of reduction¹</i>	<i>Reference methods of measurement</i>
BOD ₅ at 20° C without nitrification ²	25 mg/l O ₂	70 – 90	Homogenized, unfiltered, undecanted sample. Determination of dissolved oxygen after five days incubation at 20° ±1° in complete darkness. Addition of nitrification inhibitor.
COD	125 mg/l O ₂	75	Homogenized, unfiltered, undecanted Potassium dichromate sample.
Total suspended solids (SS)	35 mg/l 35 under Article 4(2) (more than 10000 p.e.) 60 under Article 4(2) (2000-10000 p.e.)	90 ³ 90 under Article 4(2) (more than 10000 p.e.) 70 under Article 4(2) (2000-10000 p.e.)	θ Filtering of a representative sample through a 0,45 µm filter membrane. Drying at 105° C and weighing. θ Centrifuging of a representative sample (for at least five minutes with mean acceleration of 2800 to 3200 g), drying at 105° C and weighing.

- More stringent treatment, i.e. tertiary for discharges in sensitive areas: in these cases, in addition to the secondary treatment, elimination of nitrogen and/or phosphorus and/ or of any other pollutant affecting the quality or specific use of the water has to be provided (Article 5 and Annex IB, table 2);

¹ Reduction in relation to the load of the influent.

²The parameter can be replaced by another parameter: TOC (Total Organic Carbon) or TOD (Total Oxygen Demand) if a liaison can be estimated between BOD₅ and the substitute parameter

³ This requirement is optional

Table 2 - Requirements for discharges from urban waste water treatment plants in sensitive areas which are subject to eutrophication

One or both indicators may be applied depending on local conditions. The values for concentration or the percentage of reduction shall be applied

Quality indicators/ parameters	Concentration ¹	Minimum percentage of reduction ²	Reference method of measurement
Total phosphorus	2 mg/l P (10.000-100.000 p.e.) 1 mg/l P (more than 100.000 p.e.)	80%	molecular absorption spectrophotometry
Total nitrogen ³	15 mg/l N (10.000-100.000 p.e.) 10 mg/l N (more than 100.000 p.e.)	70% - 80%	molecular absorption spectrophotometry

-less stringent treatment for certain discharges to coastal waters

1) Sensitive areas to be designated according to one or more criteria:

- θ water bodies which are found to be eutrophic or which, in the near future, may become eutrophic, if protecting measures are not taken;
- θ surface freshwaters intended for the abstraction of drinking waters, containing more than 50 mg/l of nitrates if measures are not taken;
- θ areas where advanced treatment is necessary to fulfil the provisions of the other Council Directives.

The list of sensitive and less sensitive areas must be reviewed every four years.

- 2) Ensure that biodegradable industrial water from plants belonging to specific industrial sectors (*listed in the Annex III of the Directive*) shall observe, before the discharge, the conditions set up for all discharges from industrial units representing 4,000 population equivalent or more;
- 3) Ensure that discharges from urban waste water treatment plants satisfy the following requirements:
 - θ waste water treatment plants are designed or modified, so that representative samples of the incoming waste water and of treated effluent can be obtained before discharge into the receiving waters;

¹ Reduction in relation to the load of the influent

² total nitrogen means: the sum of total Kjeldahl-nitrogen (organic N + NH₃), nitrate (NO₃)-nitrogen and nitrite (NO₂)-nitrogen

³Alternatively, the daily average must not exceed 20 mg/l N. This requirement refers to a water temperature of 12° C or more during the operation of the biological reactor of the waste water treatment plant. As a substitute for the condition concerning the temperature, it is possible to apply a limited time of operation, which takes into account the regional climatic conditions

- θ discharges from urban waste water treatment plants meet the requirements laid down in table 1 (Annex I of the Directive)

1.1.3. Monitoring

- Ensure appropriate monitoring capacity for:
 - monitoring of discharges from urban waste water treatment plants, and
 - monitoring of the receiving waters for discharges of waste water covered by the Directive(Article-15 and Annex ID)

1.1.4. Informing and Reporting

- Ensure that relevant authorities publish reports to the public, every two years, on the disposal of urban waste water and sludge in their areas (Article 16);
- Report to the European Commission regarding:
 - the transposition of the Directive into the national legislation;
 - the implementation programmes (Article 17) and the Commission Decision 93/481/EEC;
 - the situation reports on the disposal of urban waste water and sludge (Article 16);
 - certain requests of the European Commission (Article 15).

The following phases were preliminarily identified as priorities for the implementation of Council Directive no 91/271/EEC in Romania:

1.

- θ identification of the agglomeration of more than 2,000 p.e. and of agglomerations of more than 10,000 p.e., which need extension of the waste water collecting systems. Also, the agglomerations of more than 2,000 p.e. and those of more than 10,000 p.e. needing waste water treatment improvement will be identified;
- θ identification of the sensitive areas (in the preliminary stage of the elaboration of this Implementation Plan);
- θ identification of the infrastructure (sewerage networks and urban waste water treatment plants) and assessment of the improvement needs;
- θ assessment of the existing monitoring and inspection systems.

2.

- θ setting up of the programs for building up the sewerage systems and waste water treatment plants according to the Action Plan for collection, treatment and discharge of urban waste water, in which deadlines for each implementation activity are established;
- θ preparation of the investment plans;
- θ ensuring a cost recovery system.

3.

- θ to continue the building up of new urban waste water treatment plants in agglomerations; modernization of the urban waste water treatment plants; modernization of the waste

water treatment plants for agro-food industry; rehabilitation of the existing sewage systems; building up and/or extension of the urban sewage systems.

Romania carried out a series of actions provided for the implementation of Council Directive 91/271/EEC:

- θ Identification of natural waters (lakes or rivers sectors) affected by high nitrogen concentrations;
- θ Methodology for identification of sensitive areas;
- θ Identification of the sensitive areas;
- θ Present situation of collecting and waste water treatment within localities of Romania;
- θ Assessment of necessary activities for the implementation of Directive.

1.2. Community legal acts and links to other sectors

Two EU Directives are directly related to the Directive (91/271/EEC) concerning urban waste water treatment having similar aims:

- θ Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources;
- θ Directive 76/464/EEC and “daughters” directives on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community

The Directive concerning urban waste water treatment is correlated with five other Directives, which lay down requirements on surface water quality:

- θ Water Framework Directive (2000/60/EC);
- θ Directive 76/160/EEC concerning the quality of bathing water;
- θ Directive 98/83/EC on the quality of water intended for human consumption;
- θ Directive 75/440/EEC concerning the quality required for surface water intended for the abstraction of drinking water;
- θ Directive 78/659/EEC on the quality of fresh waters needing protection or improvement in order to support fish life.

Three Directives control the disposal of the sewage sludge produced as a result of the implementation of this directive:

- θ Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when the sewage sludge is used in the agriculture
- θ Directive 99/31/EC on the landfill of waste
- θ Directive 91/676/EEC concerning the protection of waters against the pollution caused by nitrates from agricultural sources.

Directive 91/271/EEC concerning urban waste water treatment was fully transposed through GD no. 188/2002 for the approval of certain norms concerning the conditions of discharging the waste water into aquatic environment .

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The Directives connected to the provisions of Directive 91/271/EEC concerning urban waste water treatment have also been transposed:

- Directive 91/676/EEC concerning the protection of waters against the pollution caused by nitrates from agricultural sources was transposed through GD no 964/2000 regarding the approval of the Action Plan for the water protection against the nitrates pollution from agricultural sources;
- Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community was transposed through GD no 118/2002 regarding the approval of the Action Program for reducing the pollution of aquatic environment and groundwater, caused by the discharge of some dangerous substances.
- Directive 78/659/EEC on the quality of freshwaters needing protection or improvement in order to support fish life was transposed through GD no 202/2002 on the approval of the Technical Norms regarding quality of fresh waters needing protection or improvement in order to support fish life.
- Directive 76/160/EEC concerning the quality of bathing water was transposed through GD no. 459/2002 on the approval of the Norms concerning the quality of water from bathing areas.
- Directive 98/83/EC on the quality of water intended for human consumption was transposed through Law no 458/2002 on drinking water quality, amended by Law 311/2004.
- Directive 75/440/EEC concerning the quality required of surface water intended for the abstraction of drinking water has been transposed through GD no. 100/2002 for the approval of the Norms on the measurement methods, sampling and analysis frequency of the surface water intended for the abstraction of drinking water and, also, through the Order of the minister of water and environmental protection no. 377/2001 approving the reference objectives for the quality of surface waters.
- Directive 99/31/EC on landfill of waste was transposed through GD no 162/2002 on landfill of waste.

Law no. 310/2004 amending Water Law no.107/1996 was adopted and fully transposes the provisions of Water Framework Directive 2000/60/EC.

The Ministerial Order no.49/2004 on the approval of Technical Norms concerning the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture transposes the provisions of Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.

1.3. Data source

Technical and scientific support documentation has been prepared for the transposition and implementation of Directive 91/271/EEC by the National Institute of Research and Development for Environmental Protection – Bucharest (ICIM - Bucharest) in cooperation with the National Administration “Romanian Waters” (NARW)

Studies were developed and used in the process of implementing Directive 91/271/EEC:

- θ “Proposal of criteria and methodology for the identification of sensitive areas” and case study for Ialomita river basin, which were sent in October 2002 to the European Commission
- θ Assessment of sludge quantities from the urban waste water treatment plants; the assessment has been carried out based on reported and computed data;
- θ Systematisation of data collected during 2001 - 2003, regarding the waste water treatment and water supply at county and national level. The following aspects were established : number of agglomerations, status of the water supply on agglomeration categories, number of the inhabitants connected to the sewerage networks and to the waste water treatment plant for each type of agglomeration, waste water treatment plants type and treatment stages, costs for rehabilitation, extension and building up of new water supply and sewage treatment systems;
- θ Study for preparation of the implementation plan of Directive 91/271/EEC concerning urban waste water treatment (agglomerations, sensitive areas, inventories);
- θ Elaboration of the implementation programs for urban waste water treatment at local level;
- θ Systematisation of data concerning urban waste water treatment and water supply, at county level, from 2002, according to the Joint Order of the Minister of Public Administration, Minister of Waters and Environment Protection and the Minister of the European Integration no. 4324/OC/783/ACI /2487/HP/2001.

The following elements were used for the present implementation plan:

- θ Detailed action plan for the implementation of Directive 91/271/EEC concerning urban waste water treatment
- θ Identification of sensitive areas at hydrographical basin level (in the first stage)
- θ Identification and classification of urban agglomerations in accordance with the population equivalent, including the map in GIS format;
- θ Setting up the agglomerations of more than 10,000 p.e., located in the sensitive areas;
- θ Action Plan for agglomerations of more than 2,000 p.e. for identification of the existing infrastructure status and needs for the rehabilitation and extension of the sewage systems and waste water treatment plants, at hydrographical basins level;
- θ Estimation of the necessary funds for the implementation of Directive 91/271/EEC;
- θ The status of waste water treatment, on hydrographical basins;
- θ Agglomerations of more than 2,000 p.e., where there is no possibility for building up sewage networks and waste water treatment plants (at river basin level).

Data from Statistic Yearbook of Romania, Yearbook of the activities of public local utilities, Reports on water quality synthesis carried out by NARW were also used.

2. CURRENT STATUS

From the administrative point of view, Romania is divided in 41 counties and Bucharest municipality. The area of the Romanian territory is 238,391 km², with 265 cities and towns, 2686 communes and 13,092 villages. According to the March 2002 census, the total population of Romania is 21,698,181 inhabitants, out of which 11,436,736 inhabitants in urban areas (52.7 %) and 10,261,445 inhabitants in rural areas (47.3 %).

According to the same census, 7,392,131 households, constituted of 21,384.1 thousand individuals and 3,521 institutional households constituted of 314.1 thousand persons have been registered. The medium size of a household in 2002 is 2.89 individuals. Out of the total 7,392,131 households, 3,995,239 are situated in cities and towns and 3,396,892 are situated in communes.

Infrastructure for waste water collecting and treatment in Romania

The present situation reveals that 644 localities (265 cities and towns and 378 rural localities) have public collecting systems.

The total length of waste water collecting network is 16,812 km, out of which 15,738 km are in urban area. In urban area, the length of the streets with waste water collecting network represents 51.8% from total length of the streets.

A comparison between the streets with water supply systems and those with waste water collecting networks shows that only 73% of the first category also has waste water collecting systems.

Dwelling water supply is ensured for 4,313,803 dwellings (representing 53.2 %) and the sewage networks in public or private system are ensured for 4,146,814 dwellings (representing 51.1 %).

Water supply is ensured for 87.6 % of the dwellings within urban areas and for 15.1 % of the dwellings within rural areas, while the sewage is ensured for 85.6 % within the urban areas and for 12.9 % within the rural areas.

In the existing waste water treatment plants, only 77% of the total discharged waste water flow is treated in the urban collecting networks; in 47 urban localities, with more than 150,000 inhabitants, the waste water is discharged without a preliminary treatment.

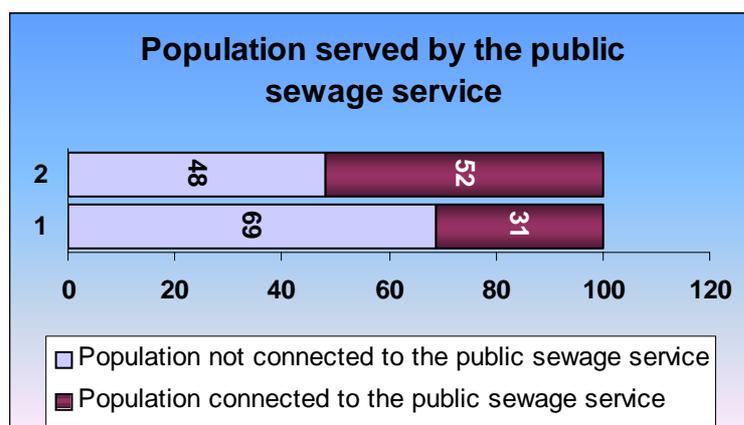
In 2003, the total volume of waste water discharged into receiving waters represented 4,494.47 million m³/year.

The availability of the waste water collecting and treatment services

In Romania, approx. 11.5 million inhabitants out of the total population of 21.7 millions have access to waste water collecting and treatment services. The population benefiting from public sewage services is more numerous in urban area - 10.3 million inhabitants (90% of the total population) than in rural area - 1.15 million inhabitants (10% of the total population).

The development of this index using as base the 1976 situation is presented in Figure 1.

Figure 1



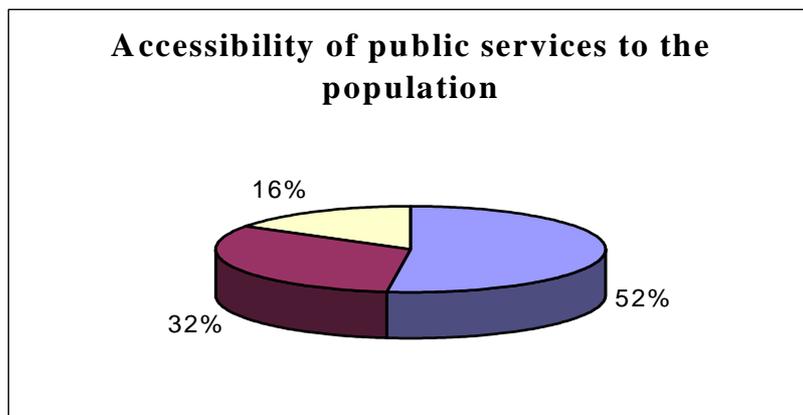
Legend:

1 – in 1976

2 – in 2002

The quality of freshwater is influenced by the waste water discharged. The waste water is either not preliminary treated or insufficiently treated before the discharge into receiving waters. The biggest volume of untreated water comes from the sewage systems of localities (over 89%) and the industrial sectors (chemical and petrochemical industry - 3%, energy sector-8%). The large urban agglomerations of more than 150,000 p.e. are responsible for significant pollution with organic substances. Other major polluters of freshwater are the industrial activities (chemical and petrochemical industry, mining activities, metallurgical industry, food industry and livestock).

Depending on the accessibility of public services (water supply systems and waste water treatment plants) to population, the population is divided in the following categories (Figure 2):

Figure 2**Legend:**

- 52% - Population served by water supply systems and waste water treatment plants
- 16% - Population served only by drinking water supply systems
- 32% - Population served by no public service

Competent authorities

As regards the regulatory bodies in the field of environmental protection, the Environmental Protection Agencies (EPAs) were established at county level and 8 Regional Environmental Protection Agencies (REPAs) were established at regional level, being subordinated to the Ministry of Environment and Water Management.

At the same time, the local structures of the County Commissariats of the National Environmental Guard have as responsibilities the inspection and control of compliance to environmental regulations, in collaboration with EPAs.

The Water Directorates, subordinated to the National Administration “Romanian Waters” function on each hydrographical basin. Their responsibilities are described in detail in the action plan for Directive 91/271/EEC concerning urban waste water treatment.

2.1. Transposition

Council Directive 91/271/EEC concerning the urban waste water treatment was fully transposed into the Romanian legislation through Governmental Decision no 188/2002 for the approval of certain norms concerning the conditions of discharging the waste water into the aquatic environment.

G D no. 188/2002 includes:

- **Annex no. 1- NTPA 011/2002** “Technical Norms concerning the collection, treatment and discharge of urban waste water” which transposes the requirement of the directive;
- **Annex to Technical Norms NTPA 011/2002** –“Action Plan concerning the collection, treatment and discharge of urban waste water” including a setting up of an overview of actions, deadlines and responsibilities for the implementation activities;

- **Annex no. 2 – NTPA 002/2002** “ Normative concerning the conditions for waste water discharge into urban collecting systems or directly into waste water treatment plants “;
- **Annex no.3 - NTPA 001/2002** “ Normative establishing the pollutants limits for urban and industrial waste water when discharged into natural receivers”

The action plan concerning the urban waste water collection, treatment and discharge, presented in the Annex to the technical norms NTPA 011/2002 establishes deadlines for each implementation activity.

The objectives of the action plan are:

- a) to ensure the protection and functioning of the localities’ sewage network and urban waste water treatment plants.
- b) to protect the population and the environment against the negative effects of the urban and industrial waste water discharges.

GD no. 188/2002 on the approval of the norms regarding the wastewater discharge conditions in the aquatic environment will be amended, by including the provision regarding the decision to declare the whole territory of Romania as sensitive area and the compliance deadlines resulted from negotiations. The revision of GD no.188/2002 and of other relevant legislation will be accomplished **until March 2005**.

2.2. Implementation

2.2.1. Competent Authorities

- **Ministry of Environment and Water Management (MEWM)** is responsible for:
 - θ Establishing the water quality standards and objectives
 - θ Regulating the waste water discharges from human agglomerations and agro-food industries, in accordance with NTPA 001/2002 and NTPA 002/2002 Norms
 - θ Monitoring the quality of surface water and of natural receivers in which urban or industrial waste water is discharged
 - θ Controlling the compliance with the legislation in force
 - θ Elaboration of an Action Plan for the rehabilitation, modernization and construction of urban waste water collection and treatment system
- **Ministry of Administration and Interior (MAI)** is responsible for the elaboration of an Action Plan for rehabilitation, modernization and construction of urban waste water collection and treatment system within agglomerations of more than 2,000 p.e
- **Ministry of Transport, Constructions and Tourism (MTCT)** is responsible for the promotion of standards and technical regulations concerning the construction and operation of the collection systems and urban wastewater treatment plants.
- **National Regulatory Authority for Public Services of Communal Management (ANSRC)** is responsible for regulating and licensing the public service operators

- **Local Public Administration (LPA)** is responsible for carrying out the sewage systems and urban wastewater treatment.
- **National Environmental Guard (NEG)** is responsible for inspection and enforcement of the environmental legislation.

Stakeholders and their responsibilities related to the implementation of Directive 91/271/EEC are shown in **Table 3**.

Table 3

Stakeholder	Responsibilities
MEWM (Ministry of Environment and Water Management)	Establishment of standards and water quality objectives Elaboration of norms for discharging conditions Establishment of monitoring system of the waste water discharges
MAI (Ministry of Administration and Interior)	Elaboration of the Action Plan for rehabilitation, modernization and construction of collection systems within agglomerations of more than 2,000 p.e.
Ministry of Transport, Constructions and Tourism	Promotion of the standards and technical regulations concerning construction and exploitation of the collection systems and urban waste water treatment plants
National Environmental Guard (NEG)	Inspection and control of waste water discharges
National Administration "Romanian Waters" (NARW) and River Basin Water Directorates (RBWD)	Licensing/permitting of waste water discharge from agglomerations or assimilated agro-food industry, in accordance with normatives NTPA 001/2002 and NTPA 002/2002 Monitoring the quality of surface water and natural receiving waters, in which urban and industrial waste water are discharged.
National Authority for Public Services of Communal Management (ANSRC)	Licensing the operators for waste water treatment public services
Local Public Administration	Development of the sewage systems and urban waste water treatment
Local Water and Sewage Companies (under municipal authority or state ownership)	Operation and maintenance of collecting systems and urban waste water treatment plants Self-monitoring and reporting to the RBWD Compliance with discharging conditions Sludge management and sludge disposal

2.2.2. Water management authorisation

In accordance with the provisions of Water Law no. 107/1996 (amended by Law no. 310/2004), the Ministry of Environment and Water Management is authorized to elaborate the national strategy and policy in the field of water management, to establish the regime of the water resources use, regardless the owner, to organize and develop, on hydrographical basins, the unitary, rational and complex activity for water resources management and to ensure the coordination and enforcement of the legal regulations in this field.

The present legislation does not refer to sensitive areas, but the water authority may impose stricter limits, if the quality of the receiving waters justifies it.

For the rational management of water resources and for water resources protection against exhaustion and pollution, in connection with the water management and sustainable development principles, Water Law no. 107/1996 (amended by Law no. 310/2004) introduces the obligation of water user to request and obtain a “*water management permit*”, starting with the designing stage. The permit regulates the regime of the works carried out on water or related to water and the social-economical activities, with potential negative effects on the environment. The putting into operation or the operation of these works is made only on the basis of a “*water management licence*”.

The legal framework for authorisation in water management and water protection is represented by the Water Law no.107/1996 (amended by Law no. 310/2004) and the Ministerial Order no.1141/2002. According to these norms, the National Administration” Romanian Waters” (NARW) and the River Basin Water Directorates (RBWD) are the competent authorities for issuing water management permits and licenses.

The water management permits and licenses are granted by NARW through its specialized departments organized for this purpose both at central and local level, on each River Basin Water Directorate (RBWD). The NARW has well trained personnel for this activity.

For waste water discharges from agglomerations of more than 2,000 p.e. and for industrial waste water discharges from industrial sectors into natural receivers (as stipulated within table 4, Annex 1 - Technical Normative NTPA 011/2002) of the GD no 188/2002,) permits/licenses should contain compliance conditions with the requirement of the Annex 1 and Annex 3 of the GD no 188/2002, namely Technical Normative NTPA-011 and NTPA-001/2002.

Waste water discharges from industrial sources are authorised in Romania since 1974.

Governmental Decision no.188/2002 - Annex to Technical Norms, Article 9 –Authorization - transposes the provisions of **Article 11 of the Directive** regarding the discharge of industrial wastewater into collecting systems and urban wastewater treatment plants which are subject to water permit/license.

In accordance with the regulations in-force, wastewater discharge into the aquatic ecosystems should not lead to the deterioration of the natural receivers. Before being discharged into natural receivers, the urban waste water shall be subject to appropriate treatment - by any process and/or disposal system, which allows the receiving waters to meet the conditions provided by GD no. 188/2002 and by water management permits and licenses in force.

2.3. Sludge management

The water management permits and licences also refer to sludge landfilling or use that should reduce to minimum the negative impact to environment. In addition, sludge discharging into surface waters is banned, as stipulated by Water Law no. 107/1996, amended by Law no. 310/2004.

Currently, in Romania, the sludge from wastewater treatment plant is landfilled in urban waste landfills.

Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture was transposed in Romanian legislation by Ministerial Order no. 49/2004 for the approval of Technical Norms for the protection of environment and, especially, of soils when sewage sludge is used in agriculture.

The sludge quantity produced in 2001 was 171,086 tones. The present situation regarding the sludge from treatment plants is presented in Table 4:

Table 4

**SYNOPTIC TABLE ON THE QUANTITY OF SLUDGE DISCHARGED BY
THE MUNICIPAL WASTE WATER TREATMENT PLANTS FROM ROMANIA
- Distribution on hydrographical basins -**

No.	Hydrographical basin	Number of WWTP	Quantity of sludge discharged (kg d.s. ¹ /day)		
			Primary	Secondary	Total
1	Arges Vedeia	31	13,979.86	13,194.53	19,462.65
2	Bega Cerna Timis	14			32,657.18
3	Crisuri	25	9,407.44	15,717.63	25,125.07
4	Dunare	12	5,741.53	2,897.64	8,639.17
5	Ialomita -Buzau	43	21,088.69		
6	Jiu	14	7,397.31	25,604.82	45,432.49
7	Litoral	13	3,560.12	6,282.57	9,842.69
8	Mures	45	21,608.43	27,175.29	48,783.72
9	Olt	41	26,397.24	42,308.67	68,705.91
10	Prut	26	19,580.48	34,396.08	53,976.56
11	Siret	46	22,191.12	38,484.81	60,675.93
12	Somes-Tisa	30	21,909.46	37,990.17	59,899.63
	TOTAL(kg d.s./day)	340	186,056.22	283,945.44	468,731.64
	TOTAL (t/year)				171,086

¹ dried substance

Public services operators (for urban waste water collecting and treatment) monitor the discharged effluents (self-monitoring) and report the pollutants' concentrations (load), the discharged waste water quantities and treatment technologies to the Local Water Companies and River Basin Water Directorates (RBWD).

2.3. Technical Compliance

2.3.1. Water utilities

The total length of the Romanian sewage network in 2002 was 16,812 km. The development of this index is presented in Table 5.

51.7% of the urban street total length had sewage system installed at the end of 2001.

Table 5

The total length of the sewage network

	1995	1996	1997	1998	1999	2000	2001	2002
Total length of the sewage network (km)	15,199	15,291	15,502	16,012	16,080	16,348	16,590	16,812
Number of localities	607	616	619	636	654	674	682	689

Source: National Institute for Statistics

The water treatment efficiency is negatively influenced by the equipment inefficiency and the sewage network losses.

The wastewater treatment plants flow rate in 2001 was 5,151.7 thousand m³/day, (*out of which 5,067.78 thousand m³/day within municipalities and towns*) with 73.9 thousand m³/day more than in 2000.

In Romania, there are 2,609 agglomerations of more than 2,000 population equivalent, as presented in Table 6.

Table 6

	Agglomeration	Total population equivalent	% from total population equivalent
2,000-10,000 p.e.	2,346	10,192, 131	39
10,000-150,000 p.e.	241	7,012,655	27
> 150,000 p.e.	22	9,562,512	34
Total	2,609	26,767,398	100

Out of the 2,609 agglomerations, identified according to Annex 5 of the Directive, 320 agglomerations have sewage systems and 340 agglomerations have wastewater treatment plants. The distribution of the agglomerations on each type of sewage systems and each type of wastewater treatment plant, are presented in tables 7 and 8. Out of these 660, 2 sewage systems

are complying with the requirements of Directive 91/271/EEC and 11 wastewater treatment plants are in compliance only at secondary treatment level.

Table 7

Divided sewage system	Unitary sewage system	Mixed sewage system	Combined sewage system	Total agglomeration with sewage systems
211	11	88	10	320

Table 8

Mechanical waste water treatment plants	Mechanical – biological waste water treatment plants	Mechanical – biological – chemical waste water treatment plants	Mechanical – chemical waste water treatment plants	Total waste water treatment plants (in agglomerations)
112	212	10	6	340

2.3.2. Wastewater management from agro-food industry

31 agro-food units that discharge directly into surface water had been identified with an equivalent organic loading of more than 4,000 population equivalent. Out of these, 5 units do not have wastewater treatment plants and discharge directly into surface water and 26 agro-food units have mechanical or mechanical – biological treatment plants. Out of the total 31 agro-food units, identified according to Article 13 of the Directive, only 3 units comply with the provisions of Directive 91/271/EEC.

The agro-food industry units, which directly discharge into the receiving water and currently do not comply with the provisions of the Directive are authorized from the water management point of view. The water management license, which is a technical document, legally binding, contains a compliance programme referring to the endowment, extension and upgrading works, which also includes the deadlines by which the units must be in compliance. These compliance deadlines do not surpass the date of accession. In case of non-compliance, the water management authority applies penalties and if the problem persists, the water management license of these units will be withdrawn by the date of accession and their activity will be ceased or these units will be shut down.

2.3.3. Monitoring system for urban wastewater

In Romania, the Water Integrated Monitoring System has an informational structure and a hierarchical type. The local water management authorities (Water Management Systems) are responsible for obtaining, collecting and transmitting the information to the water basin river authority (Water Directorates) and further up to the national water management authority (National Administration “Romanian Waters”) and to the central water management authority (Ministry of Environment and Water Management). The NARW is in charge with the monitoring of pollution sources, which directly discharge wastewater into natural receivers. 100 automatic stations are available for sampling and analysis. These data are sent to the basin centre to be processed together with other data.

The local water management authorities monitor the urban wastewater and industrial water discharged into urban sewage systems. The local water management authorities have to annually report the data (regarding the waste water collection and treatment) to the NARW (according to GD no. 188/2002, Annex to the Technical Norms, Article 12). Information is validated and stored into a database and written reports.

In Romania, the National Administration “Romanian Waters” is the responsible authority of the Water Integrated Monitoring System and of the specific database. Presently, the informational system of NARW collects, processes, send, stock and disseminates data. The national network for data transmission, in electronic format, in the field of water management is divided on 4 levels (local, county, basin and national level). The data transmission is carried out mainly by radio transmission and also by Internet – Intranet system between the data provider and the upper decisional level.

For the improvement of the network system capacity, starting October 2004, a project will be developed for 12 months within the PHARE 2002 Programme RO 586.04.12.04 – “*Establishing an informational system and a database in the field of water management, in accordance with the requirements of Water Framework Directive*”. The objectives of this project are: the improvement of the data collection quality and efficiency at different information levels, establishing the necessary works for infrastructure modernization on upper, lower and horizontal level, between the organisational structures of NARW. After completing this project, the conditions for EU reporting, in accordance with the provisions of Article 15 of the Directive, will be ensured.

After accession, the central water management authority shall report the data to the European Commission. In order to achieve this, the NARW will update its national monitoring system in 2005. A methodology for collecting, evaluation and reporting of the monitored data will be drawn up starting with 2005, within the PHARE project RO 2001/IB/ST-0107.04 – “Compliance of Romanian statistics with European statistical system”.

3. IMPLEMENTATION PLAN

3.1. Approach and objectives

Romania is currently constructing and upgrading the sewage and waste water treatment systems in accordance with Governmental Decision no. 188/2002 for the approval of the norms concerning the conditions of discharging the waste water into the aquatic environment.

The objectives of the implementation plan are to focus the efforts and resources on the compliance with the requirements of the Directive.

I. Main objective of the Directive

The objective of the Directive concerning urban wastewater treatment is to protect the environment from the adverse effects of urban wastewater discharges and of the wastewater discharges from certain industrial sectors, mainly processing and food industry.

II. Plan for meeting the requirements of the Directive

A. Main requirements:

1. To designate the whole territory of Romania as sensitive area (Article 5 para 8).
2. To ensure that all agglomerations of more than 2,000 p.e. are provided with collecting systems of urban waste water (Article 3).
3. To ensure that urban waste water entering the collecting systems of agglomerations of more than 2,000 p.e. are before discharge subject to secondary treatment or an equivalent treatment (Article 4).
4. To ensure that urban waste water entering in collecting systems from agglomerations of more than 10,000 p.e. and situated in sensitive areas are before discharge subject to more stringent treatment and the discharges satisfy the relevant emission standards for nitrogen and phosphorus (Annex I, Table 2, Article 5 para 2,3,4).
5. To ensure that urban waste water entering in the collecting systems of agglomerations of less than 2,000 p.e. for discharges into fresh waters and of less than 10,000 p.e. for discharges to coastal water are before discharge subject to appropriate treatment (Article 7).
6. To ensure that, where waters within the area of jurisdiction of a Member State are affected by discharges of urban waste water from another Member State, the affected Member State notifies to the other Member State and the Commission the relevant facts. (Article 9).
7. To ensure that urban waste water treatment plants are designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions (Article 10).
8. To ensure that the discharges of industrial waste water into collecting systems and urban waste water treatment plants (Article 11), the discharges from urban waste water treatment plants (Article 12) and the disposal of sludge from urban waste water treatment plants are subject to prior regulations and/or specific authorisations by the competent authority.
9. To ensure that biodegradable industrial waste water from plant, which does not enter urban waste water treatment plants, complies with conditions established in prior regulations and/or specific authorisation by the competent authority (Article 13).

10. To ensure the monitoring of discharged waste water, the monitoring of relevant receiving waters and the monitoring of sludge disposal procedures concerning sludge arising from urban waste water treatment (Articles 14 and 15).
11. Horizontal requirements
 - 11.1. Determination of responsibilities;
 - 11.2 Reporting – Article 16 – To ensure that every two years the relevant authorities publish reports on the disposal of urban waste water and sludge in their area.
 - 11.3. Compliance – Article 17 – To establish a programme for the implementation of this Directive
 - 11.4. Representation of Romania in the Committee – Article 18
 - 11.5. Romania shall bring into force the laws, regulations and administrative provisions necessary for the compliance with the Directive.

B. Plan for implementation of the requirements

1) Decision to designate the whole territory of Romania as a sensitive area

a) Summary of objectives

In accordance with Article 5(8), a Member State does not have to identify the sensitive areas if more severe requirements regarding treatment are applied (laid down in paragraphs 2, 3, 4 of Article 5) on its whole territory.

The decision to declare the whole territory of Romania as sensitive area, as well as the results of the negotiations will be introduced in a GD, which will amend the GD no.188/2002. This amendment will be made by March 2005.

Urban waste water from the sewage networks must be subject to a more stringent treatment, if they are discharged into sensitive areas and if they come from agglomerations of more than 10,000 p.e., in accordance with Article 5 (2).

Discharges from urban waste water treatment plants described in paragraph 2 must satisfy the relevant requirements of Annex I B of the Directive.

Article 5 (4) lays down that more stringent treatment requirements are not necessary in sensitive areas, if a minimum percent for the reduction of total pollutant load of 75% for total nitrogen and total phosphor, for each of the two parameters, could be reached.

Responsibility: MEWM
Deadline: until 03/2005

b) Identification of the implementation steps

- ∅ Identification of relevant necessary data (agglomerations of more than 10,000 p.e., status of endowing of these agglomerations with collecting systems, conditions for collecting systems and waste water treatment plants to achieve tertiary treatment)
- ∅ The agglomerations were identified and classified depending on the population equivalent .

263 agglomerations of more than 10,000 p.e. needing tertiary treatment were identified.

Responsibility: MEWM
Deadline: 12/2004 - accomplished

2) To ensure that all agglomerations will be endowed with collecting systems of urban waste water, namely the agglomerations with a population equivalent of more than 10,000 by 31 December 2000 at the latest, and for the agglomerations with a population equivalent of between 2,000 and 10,000 by 31 December 2005 at the latest.

a) Summary of objectives

Article 3 requires Member States to ensure that all agglomerations will be provided with collecting systems of urban waste water, namely the agglomerations of more than 10,000 p.e., by 31 December 2000 at the latest and the agglomerations of between 2,000 and 10,000 p.e., by 31 December 2005 at the latest.

For urban waste water discharging into receiving waters which are identified as sensitive areas, Article 3 further requires to ensure that agglomerations with a population equivalent of more than 10,000 will be provided with collecting systems by 31 December 1998, at the latest.

The Directive makes possible the use of individual systems or other appropriate systems that achieve the same level of environmental protection, where the establishment of a collecting system is not justified either because would produce no environmental benefit or would involve excessive costs. Collecting systems shall satisfy the requirements of Annex I (A).

b) Identification of the implementation steps

- Ø Identification of the relevant necessary data (agglomerations of more than 2,000 p.e., status of endowing of these agglomerations with collecting systems, condition of collecting systems)
- Ø Identification and classification of the agglomerations depending on the population equivalent.

Out of the total of 2609 agglomerations identified according to the Directive, 320 agglomerations have sewage systems (out of which 211 with divided system, 114 with unitary system, 88 with mixed system, and 10 having a combination of these systems), and 340 agglomerations have waste water treatment plants (out of which 112 mechanical, 212 mechanical – biological, 10 mechanic –biological – chemical, 6 mechanical – chemical). Out of these, 2 sewage systems comply with the Directive requirements and 11 waste water treatment plants comply only at secondary treatment level.

A list of agglomerations of more than 2,000 p.e on each county, containing data about the level of endowment with urban waste water treatment facilities and sewage networks, indicating costs and deadlines for compliance with the provisions of the Directive is provided in the Annex 3 to the Implementation Plan. This situation was finalized on the basis of the information provided by the county public administration authorities. For the assessment of the current situation and

for planning the necessary investments in the field of urban wastewater collection and treatment, the local authorities, together with the water management authorities, drew up local action plans.

The necessary investments for the sewage systems and treatment plants were selected on the basis of cost/benefit criteria and referred to the agglomerations of more than 2,000 p.e., in accordance with the provisions of the Directive. In this respect, an agglomeration to be endowed with a common treatment system was constituted by connecting either large and medium towns with communes in their proximity or several communes.

The geographical and administrative conditions, as well as the population dispersion in some communes, also lead to the establishment of the agglomeration only by conjunction of several villages, fact that justifies the number of agglomerations: more than 2,000.

Responsibility: MEWM, MAI
Deadline: 06/2002 - accomplished

θ Collection and evaluation of relevant data

Responsibility: MEWM
Deadline: 05/2003 - accomplished

θ Development of the Action programme for the rehabilitation, upgrading and construction of collecting systems in agglomerations of more than 2,000 p.e., and of the financial strategy for its achievement

Responsibility: MEWM, MAI, MPF
Deadline: 06/2004 – accomplished

θ Implementation of the programme for the rehabilitation, upgrading and construction of collecting systems in agglomerations of more than 2,000 p.e.

Responsibility: local authorities
Deadline: until 31 December 2018

θ Periodical reviews of implementation and updating of financing strategy for collecting systems in agglomerations of more than 2,000 p.e.

Responsibility: MEWM, MAI, MPF
Deadline: yearly, starting with 2005

3) To ensure that urban waste water entering collecting systems of agglomerations is, before discharging, subject to tertiary treatment or an equivalent treatment, namely for the agglomerations with a population equivalent of more than 10,000 by 31 December 2000 at the latest and the agglomerations with a population equivalent between 2,000 and 10,000 by 31 December 2005 at the latest

a) Summary of objectives

Article 4 requires Member States to ensure that urban waste water entering collecting systems of agglomerations is before discharge subject to the secondary treatment or an equivalent treatment, namely the agglomerations of more than 10,000 p.e. by 31 December 2000 at the latest and the agglomerations of between 2,000 and 10,000 p.e. by 31 December 2005 at the latest.

Discharges from urban wastewater treatment plants must meet the requirements provided in Table 1 of Annex I of the Directive. Discharges from urban waste water treatment plants into sensitive areas subject to eutrophication as identified in Annex IIA a) must in addition meet the requirements provided in Table 2 of this Annex. More stringent requirements than those shown in Table 1 and/or Table 2 shall be applied where required, in order to ensure that the receiving waters satisfy any other relevant Directives.

b) Identification of implementation steps

θ Identification of relevant necessary data (agglomerations of more than 2,000 p.e., status of endowing of these agglomerations with urban waste water treatment plants, conditions of existing urban waste water treatment plants and treatment performances)

Responsibility: MEWM, MAI
Deadline: 06/2002 – accomplished

θ Collection and evaluation of relevant data

Responsibility: MEWM
Deadline: 05/2003 – accomplished

θ Development of the Action programme for rehabilitation, upgrading and construction of wastewater treatment plants in agglomerations of more than 2,000 p.e and of the financial strategy for their achievement.

Responsibility: MEWM, MAI, MPF
Deadline: 06/2004 – accomplished

θ Implementation of the programme of rehabilitation, upgrading and construction of wastewater treatment plants in the agglomerations of more than 2,000 p.e.

Responsibility: local authorities
Deadline: until 31 December 2018

θ Periodical reviews of the implementation and updating of financing strategy for wastewater

Responsibility: MEWM, MAI, MPF
Deadline: yearly, starting with 2005

4) To ensure that urban waste water entering collecting systems of agglomerations of more than 10,000 p.e. and situated in sensitive areas are, before discharge into sensitive areas, subject to more stringent treatment and the discharges satisfy the relevant emission standards for nitrogen and phosphorus

a) Summary of objectives

Member States shall ensure that all agglomeration of more than 10,000 p.e. are provided with collecting systems for urban waste water discharged into receiving waters regarded as sensitive areas by 31 December 1998 at the latest (Article 3). This urban wastewater shall be, before discharge into sensitive areas, subject to more stringent treatment than described in Article 4.

Discharged urban wastewater shall satisfy the relevant requirements of Annex IB and Table 2 as regards total nitrogen and phosphorus parameters. Discharges from urban waste water treatment plants of the agglomerations of more than 10,000 p.e. which are situated in the relevant catchment areas of sensitive areas and which contribute to the pollution of these areas shall also meet the above-mentioned requirements.

Member States shall ensure that the identification of sensitive areas is reviewed at intervals of no more than four years. Member States shall ensure that areas identified as sensitive in the later stage following initial identification shall meet the above - mentioned requirements for seven years.

b) Identification of implementation steps

Ø Identification and collection of necessary data (agglomerations of more than 10,000 p.e., status of urban waste water treatment plants in these agglomerations, treatment performances)

Responsibility: MEWM
Deadline: 05/2003 – completed

Ø Periodical reviews and adjustments of water management permits and licences for discharges of urban waste water into sensitive areas

Responsibility: MEWM
Deadline: starting with 12/2003

Ø Drawing up of an action programme for the rehabilitation, upgrading and construction for urban waste water treatment plants in the relevant agglomerations and of the financial strategy for the implementation strategy for the implementation of the programme.

Responsibility: MEWM, MAI, MPF
Deadline: 06/ 2004 - accomplished

Ø Implementation of the programme for the rehabilitation, upgrading and construction of urban waste water treatment plants in relevant agglomerations

Responsibility: local authorities
Deadline: until 31 December 2018

5) To ensure that those urban waste water entering collecting systems of agglomerations of less than 2,000 p.e. are before discharge subject to appropriate treatment, namely by 31 December 2005 at the latest

a) Summary of objectives

Article 7 requires Member States to ensure that urban waste water entering collecting systems of agglomerations of less than 2,000 are before discharge subject to appropriate treatment by 31 December 2005 at the latest.

Appropriate treatment means treatment of urban waste water by any process and/or disposal system that after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and other Community Directives.

b) Identification of implementation steps

θ Identification and collection of the necessary data (agglomerations of less than 2,000 p.e., collection and waste water treatment situation)

Responsibility: MEWM
Deadline: 05/2003 - accomplished

θ Drawing up an action programme for waste water treatment in the agglomerations of less than 2,000 p.e.

Responsibility: MEWM, MAI
Deadline: 06/2006

θ Identification of the instruments for the programme implementation support

Responsibility: MEWM, MAI, MPF
Deadline: 06/2006

θ Implementation of the action programme for waste water treatment in the agglomerations of less than 2,000 p.e.

Responsibility: local authorities
Deadline: until 31 December 2018

θ Periodical reviews of the implementation and amendment of the programme

Responsibility: MEWM, MAI
Deadline: yearly, starting with 2005

6) To ensure that where waters within the area of jurisdiction of a Member State are affected by discharges of urban waste water from another Member State, the affected Member State notifies to the other Member State and the Commission the relevant facts.

a) Summary of objectives

Article 9 requires Member States to ensure that, where waters within the area of jurisdiction of a Member State are affected by discharges of urban waste water from another Member State, the affected Member State notifies to the other Member State and the Commission the relevant facts.

The Member State concerned shall make, where appropriate, with the Commission, concerted effort necessary to identify the discharges in question and the measures to be taken at source to protect the waters that are affected.

b) Identification of the implementation steps

- Establishing a co-operation framework for notification in case of pollution with transboundary effect

Responsibility: MEWM, NARW

Deadline: accomplished

- Identification of the discharges with transboundary adverse effect

Responsibility: MEWM, NARW

Deadline: accomplished

- Establishing the measures at source for the protection of waters that are affected

Responsibility: MEWM, NARW

Deadline: continuously

7) To ensure that urban waste water treatment plants are designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions and that collecting systems satisfy the requirements laid down by the Directive

a) Summary of objectives

Article 10 requires Member States to ensure, that the urban waste water treatment plants are designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions.

b) Identification of implementation steps

- θ Analysis of existing water management technical regulations and standards according to the requirements of the Directive

Responsibility: MEWM, MTCT, MAI

Deadline: 10/2004

- θ Drawing up a programme for updating the technical regulations and standards

concerning the construction and operation of collecting systems and urban waste water treatment plants

Responsibility: MEWM, MTCT, MAI
Deadline: 12/2004

Ø Updating the technical regulations and standards concerning construction and operation of collecting systems and urban waste water treatment plants

Responsibility: MTCT
Deadline: continuously, starting with 2004

Ø Issuing of new and updated water management permits and licences for construction and operation of collecting systems and urban waste water treatment plants

Responsibility: MEWM
Deadline: continuously

8) To ensure that the discharges of industrial waste water into collecting systems and urban waste water treatment plants, the discharges from urban waste water treatment plants and the disposal of sludge from urban waste water treatment plants are subject to prior regulations and/or specific authorisations by the competent authority

a) Summary of objectives

Articles 11, 12 and, respectively, 14 require Member States to gradually ensure that the discharges of industrial waste water into collecting systems and urban waste water treatment plants, the discharges of waste water from urban waste water treatment plants, discharges of biodegradable industrial waste water and the disposal of sludge from urban waste water treatment plants are subject to prior regulations and/or specific authorisations by the competent authority.

Regulations and/or authorisations shall be reviewed and if necessary adapted at regular intervals.

Competent authorities or appropriate bodies shall monitor the discharges from urban waste water treatment plants and the amounts and composition of sludge disposed of to surface water. Information collected by competent authorities or appropriate bodies shall be retained by the Member State and made available to the Commission within six months of receipt of a request. Member States shall ensure that every two years the relevant authorities or bodies with publish situation reports on the disposal of urban waste water and sludge in their areas and send them to the Commission.

b) Identification of the implementation steps

Ø Analysis of the existing legislation in the field of water management and waste management according to the requirements of the Directive

Responsibility: MEWM
Deadline: 05/2003 - accomplished

θ Update of the existing legislation in the field of water and waste management

Responsibility: MEWM, MAI, ANSRC
Deadline: 12/2004

θ Issuing the relevant water management permits and licences for construction and operation of urban waste water treatment plants

Responsibility: MEWM
Deadline: continuously

θ Periodical reviews and adaptation of the relevant legislation

Responsibility: MEWM
Deadline: every 5 years

θ Periodical reviews and adaptations of the relevant water management authorisations for construction and operation of urban waste water treatment plants

Responsibility: MEWM
Date: every 5 years

9) To ensure that biodegradable industrial waste water from plants belonging to the specified industrial sectors, which do not enter urban waste water treatment plants, before discharge to receiving waters respect before discharge conditions established in prior regulations and/or specific authorisation by the competent authority

a) Summary of objectives

Article 13 requires Member States to ensure that by 31 December 2000 biodegradable industrial waste water from plants belonging to the industrial sectors listed in Annex III of the Directive, which does not enter into the urban waste water treatment plants shall respect, before discharge to receiving water, the conditions established in prior regulations and/or specific authorisation by the competent authority or appointed body.

b) Identification the implementation steps

θ Data collection and analysis of existing situation concerning biodegradable industrial waste water from plants belonging to the industrial sectors listed in Annex III which discharge in water resources

Responsibility: MEWM
Deadline: 05/2003 - accomplished

θ Issuing of the relevant water management permits and licences according with the requirements of the legislation in force

The agro-food units are authorised from the water management point of view, according to the legislation in force. Water management licenses impose discharge limits, taking into account the nature of the discharged waste water. For the units that are not under the provisions of Directive 91/271/EEC, compliance plans, included in water management licenses, are set up; these units are obliged to comply by carrying out the measures laid down in the plans until the date of accession.

Responsibility: MEWM
Deadline: until the date of accession

Ø Periodical reviews and adaptation of relevant legislation.

Responsibility: MEWM
Deadline: every 5 years

10) To ensure the monitoring of discharged waste water, of relevant receiving waters and of sludge disposal procedures concerning sludge arising from urban waste water treatment plants

a) Summary of objectives

According to Article 15 of the Directive, the competent authorities shall monitor:

- o meeting the required emission limits of discharging waste water from urban waste water treatment plants in order to verify the compliance with the requirements of Annex IB in accordance with the control procedures laid down in Annex ID
- o amounts and composition of the sludge from urban waste water treatment plants disposed of to surface waters
- o effect of discharging waste water upon relevant receiving waters.

b) Identification of the implementation steps

Ø Analysis of the existing state of the monitoring according to the requirements of the Directive

Responsibility: MEWM
Deadline: 03/2003 – accomplished

Ø Updating of the national monitoring system for water quality

Responsibility: MEWM
Deadline: 05/2005

Ø Drawing of a methodology for collection and evaluation of monitored data

Responsibility: MEWM
Deadline: 10/2004

Ø Evaluation of the monitored data

Responsibility: MEWM
Deadline: continuously

θ Periodical monitoring according to the requirements of the Directive

Responsibility: MEWM
Deadline: continuously

θ Adaptation of the Methodology for the collection and evaluation of the monitored data

Responsibility: MEWM
Deadline: starting with 2005

11) Horizontal requirements

11.1. Designation the competencies

Ministry of Environment and Water Management (MEWM) has the main responsibility for the implementation of the UWWT Directive especially for:

- establishing the water quality standards and objectives;
- the permitting/licensing of the waste water discharges from human agglomerations or from food industries, in accordance with NTPA 001/2002 and NTPA 002/2002 Normative;
- the monitoring of surface water and of natural receivers in which urban or industrial waste water is discharged;
- the control of the compliance with the actual legislation and reporting to the European Commission.

Ministry of Administration and Interior (MAI) has the responsibility for the development of an Action Plan for the rehabilitation, modernization and construction of collecting systems and waste water treatment plants within agglomerations of more than 2,000 p.e.

Ministry of Transport, Constructions and Tourism (MTCT) is responsible for promoting the standards and technical regulations concerning the construction and operation of the collecting systems and urban waste water treatment plants.

As regards the Local Public Authorities, they have the responsibility of building sewage and waste water treatment systems (the implementation of the programme of rehabilitation, upgrading and construction of urban waste water treatment plants in relevant agglomerations; implementation of the action programme for waste water treatment in the agglomerations of less than 2,000 p.e.).

11.2. and 11.3 Reporting and compliance

According to Article 17, Member States shall establish a programme for the implementation of the Directive and provide the Commission with information on this programme and its updating. The basic information is provided by preparation of this implementation plan.

The first report on the status of implementation of the Directive in Romania in accordance with the requirements of Article 17 will be sent to the European Commission.

Responsibility: MEWM
Deadline: for reporting - starting with the date of accession
for compliance – until the end of 2018

11.4 Representation of Romania in the Committee

According to Article 18, the Commission shall be assisted by a Committee composed of the representatives of the Member States. Romania shall nominate its own representative to this Committee after the date of accession.

3.2. Transition period

Taking into account the environmental protection aspects, without neglecting the technical and financial problems involved by this decision, Romania commits itself to apply the provisions of Article 5 (8) of the Directive and declares its whole territory as a sensitive area. Romania also applies the provisions of Article 5(4).

The decision to declare the whole Romanian territory as a sensitive area requires a longer transition period, respectively 12 years.

In order to implement and comply with the provisions of the Directive no 91/271/EEC on urban waste water treatment, Romania requests transition periods **for the collecting of urban waste water** (Article 3):

- θ by 31 December 2013, compliance with the Directive will be achieved in 263 agglomerations of more than 10,000 p.e., representing 61.9 % of the total biodegradable load;
- θ by 31 December 2018, compliance with the Directive will be achieved in 2346 agglomerations of less than 10,000 p.e., representing 38.1% of the total biodegradable load.

In order to implement and comply with the provisions of the Directive no 91/271/EEC on urban waste water treatment, Romania requests transition periods for **urban waste water treatment and discharge** (Article 4, paragraph 1, letters a, b and paragraph 4 and Article 5(8):

- θ by 31 December 2015, compliance with the Directive will be achieved in 263 agglomerations of more than 10,000 p.e., representing 61.9 % of the total biodegradable load;
- θ by 31 December 2018, compliance with the Directive will be achieved in 2346 agglomerations of less than 10,000 p.e., representing 38.1% of the total biodegradable load.

Romania does not request transition period for the implementation of Article 7 of the Directive, regarding the necessity of “appropriate treatment” (in accordance with Article 2(9) of the Directive) of waste water collected from the agglomerations of less than 2,000 p.e. and of less than 10,000 p.e. in coastal areas, before discharge into the receiving waters.

This is due to the fact that Romania has 405 agglomerations of less than 2,000 p.e. and 7 agglomerations of less than 10,000 p.e. in coastal areas, representing only approx. 0.02 % of the total biodegradable load.

These 7 agglomerations do not have a numerous population and the resulting waste water will be treated in the same type of treatment systems with the agglomerations of less than 10,000 p.e., which are not situated in coastal areas.

At the same time, many agglomerations of less than 2,000 p.e. are located in mountainous or hilly areas, where the geo-morphological or climatic conditions require specific and individual solutions: mini treatment plants, natural treatment in lagoons, other non-conventional modalities.

The projects and the financial support through the SAPARD and SAMTID Programmes also ensure the treatment of waste water resulted from these agglomerations, as well as from the agglomerations of less than 10,000 p.e., located in coastal areas.

The substantiation of the requested transition period is the following:

- θ The current situation of the infrastructure for urban waste water collection and treatment, especially in rural areas, requires a large amount of civil works;
- θ Huge costs for the implementation, taking into account the commitment to comply with the UWWT Directive for all agglomerations of more than 2,000 p.e by 31 December 2020;
- θ The limited capacity to ensure financing resources for capital investment brings about difficulties of achievement of infrastructure works over a short period of time;
- θ At present, small municipalities lack the capacity to design, finance and carry out large investment projects;
- θ Carrying out in a short period of time the collection and urban waste water treatment works will lead to an important increase of the collecting and waste water treatment tariffs, while the major part of the population cannot afford it;
- θ The costs for the collection and treatment of urban waste waters will be supported by the owners of water management infrastructure (cities, associations of municipalities, etc.) and mainly by families, who also need to support the costs for the implementation of other environmental directives (the quality of drinking water, waste management);
These costs include the population contribution to public works, individual works for connection to sewage network, and on the other hand the operation and maintenance costs for collection and treatment of waste water;
- θ A 2001 PHARE project (PHARE-RO 00/IB/EN-01) showed a compliance period of between 12 and 30 years after evaluating the costs for the implementation of water directives (quality of drinking water and urban waste water treatment) - public and private works – and comparing them with the population financial resources.
This period was established by taking into consideration the best and the worst-case scenario as far as the economic growth is concerned;
- θ A sustainable implementation of the Directive will imply the operation of existing installations together with the modernization of the equipment and systems up-grading and also remunerative waste water services.
Taking into account the experience of other EU countries, for water services to be sustainable they must not require more than 5% of a family budget;

- θ A fast implementation would lead to a sharp increase in the price of water service in a short period of time that would generate a refusal of the public to pay the water services;
- θ For a family not connected to water utilities (drinking water and waste water treatment) the costs for connection to infrastructure and endowment could vary between EUR 500 and EUR 1500, while the average income/family in Romania, in 2004, is EUR 180;
- θ Due to the provisions of Directive, all agglomerations of more than 10,000 p.e. should benefit of tertiary treatment, making it difficult to be supported by the service operator and, especially, the consumer in a short period of time

Romania considers that no further deterioration will occur because completing the improvements within the timescale would be disproportionately expensive and the natural conditions do not allow timely improvement in the status of the water body.

The issue of implementing the Directive concerning urban waste water treatment represents one of the main measures that will be included in the River Basin Management Plans elaborated in Romania in accordance with Article 13 of Water Framework Directive (WFD). In accordance with Article 4 (4) (b) of WFD, Romania will analyse the possibility to extend the deadline and, if necessary, Romania will present the specific reasons of this extension in the River Basin Management Plans. According to Article 4 (4) (c) of WFD, “the extensions shall be limited to a maximum of two further updates of the river basin management plan except in cases where the natural conditions are such that the objectives cannot be achieved within this period”.

The River Basin Management Plan will contain a summary of the measures required under Article 11 of Water Framework Directive, which are envisaged as necessary to bring the bodies of water progressively to the required status by the extended deadline, the reasons for any significant delay in making these measures operational and the expected timetable for their implementation. Also, according to Article 4 (4) (d) of WFD, “the review of the implementation of these measures and a summary of any additional measures shall be included in updates of the River Basin Management Plan”.

4. COSTS

4.1 Administrative costs

Implementation of Directive requires administrative resources mainly for the permitting activities at national and river basin directorates and appropriate sampling and monitoring system.

Water Law no. 107/1996 (amended by Law no. 310/2004) gives the National Administration “Romanian Water” the responsibility for these activities under the coordination of the Ministry of Environment and Water Management.

It is estimated that EUR 50,000/year for permitting activities and staff will be needed. The increase of the staff of NARW with 87 by 2007 would mean an additional EUR 198,000 for salaries yearly, until 2007.

For the development of the monitoring system, in order to collect data and to transfer it to the Ministry, EUR 30,000 are required for monitoring instruments until 2007.

Training would be needed for the staff, which will require EUR 100,000/year.

4.2 Technical compliance costs

The major problem is building up sewage networks (collecting system) and urban waste water treatment plants in order to achieve technical compliance with the provisions of the UWWT Directive. Therefore, the major constraints are directly related to the finances available for large investments.

In order to estimate the implementation costs in agglomerations of more than 2000 p.e., an cost/agglomeration model was created. The model implies the use of a databases on the current situation, comparisons between the current expenditure for wastewater facilities (baseline) and that required by the Directive, according to the assumptions selected (the size of agglomeration, the level of treatment, rural or urban area).

These costs imply the following measures:

- θ Construction of new urban waste water treatment plants;
- θ Up-grading of the existing urban waste water treatment plants;
- θ Up-grading of the existing waste water treatment plants in the agro-food industry;
- θ Rehabilitation of the existing urban sewage collecting systems;
- θ Construction and/or extension of urban sewage collecting systems.

Unit costs for construction of urban waste water treatment plants and rehabilitation /construction of urban sewage collecting systems were assessed according to the population equivalent.

The relationship population equivalent - investment costs was checked against ongoing projects.

Depending on the size of a town and the technology type, units investment costs in urban waste water treatment plant vary between EUR 250 (for agglomerations of more than 10000 p.e. and tertiary treatment), EUR 120 (for agglomerations between 10000 - 5000 p.e. and secondary treatment) and EUR 180 (for agglomerations of less than 5000 p.e. and secondary treatment).

The investments also depend on the type of upgrading. When the increase of plant capacity is needed, additional specific assumptions are used (level of treatment, technological endowment).

The costs/p.e. for sewage systems were estimated according to the size of the agglomeration and type of collection networks (gravity system or combined with pump stations). Extensive investigations showed the same cost/p.e. for all categories of collection systems: EUR 160 for agglomerations of more than 5000 p.e. and EUR 75 for agglomerations of less than 5000 p.e..

The estimated costs for the implementation of UWWT Directive are about EUR **9.5 billion** for investments, out of which EUR **5.7 billion** for waste water treatment plants and EUR **3.8 billion** for urban sewage collecting systems. Operating costs, for a transition period of 12 years, are estimated about EUR **3.4 billion**.

4.3 Financial Resources

The national sustainable development strategy in the field of public services was finalized at the beginning of 2004.

Several measures laid down in this strategy have as purpose to establish the realistic financing request for the works in the field of water services, as well as a credible and stable framework for the investment planning, on the basis of some principles recognized at international level (e.g. subsidiarity, efficiency and “polluter pays”).

The financial resources envisaged are: multilateral grants, loans for public service and infrastructure investments with governmental or local guaranties, stimulation of private funds and public-private partnerships.

The pre-accession instruments (ISPA, SAPARD, SAMTID, PHARE) are also used to finance the works in the field of waste water sewage and treatment.

Thus:

- 23 investment projects in water infrastructure of large agglomerations (of more than 150,000 p.e.) have already been financed through **ISPA** in a total amount of over EUR 850 million; the total amount for a project is more than EUR 5 million; the project proposals for other agglomerations will allow their financing by 2010, in a total amount of approx. EUR 600 million;
- the **SAPARD** programme regards the financing of investment projects in the rural environment, for small agglomerations; from the available data, by 2006, projects financed through this financial instrument, in a total amount of EUR 277 million, will be developed (the total amount for a project does not exceed EUR 1 million);
- **SAMTID** Programme will support small and medium towns infrastructure development for 230 small and medium towns (with a population of 6.2 million inhabitants), by using funds of EUR 380 million (out of which 50% are grants) for 10 years, by 2014.

Starting with the date of accession, as Member State, Romania will benefit of **cohesion funds** for environmental infrastructure. On the basis of the financial assessment, for the environmental sector, during 2007 – 2009, EUR 994 million will be allotted, out of which more than a half would be used for the investments in the field of water.

Funds from the state budget, local administration or private investors will be added to the above-mentioned funds, so that, during the requested transition period, there would be sufficient financing possibilities for the investment works, for compliance.

The support of international financing institutions: **BIRD** (International Bank for Reconstruction and Development); **EIB** (European Bank for Investments); **EBRD** (European Bank for Reconstruction and Development) should also be mentioned.

The main financing sources are: approx. 40% from EU funds; 30% from national and local budget, 20% credits and public-private partnerships, 3% Environment Fund, 7% population.

The funds allocated for the above-mentioned transition periods, taking into account the financial sources, are presented in Table 9

Table 9

No	Year	Financial sources (Euro)			TOTAL
		State d local budget	EU funds	Other sources	
1	2004	15,000,000	100,000,000	25,000,000	140,000,000
2	2005	53,000,000	100,000,000	25,000,000	178,000,000
3	2006	40,000,000	100,000,000	70,000,000	210,000,000
4	2007	80,000,000	100,000,000	75,000,000	255,000,000
5	2008	180,000,000	150,000,000	75,000,000	405,000,000
6	2009	200,000,000	250,000,000	100,000,000	550,000,000
7	2010	276,000,000	395,000,000	230,000,000	901,000,000
8	2011	256,000,000	395,000,000	250,000,000	901,000,000
9	2012	306,000,000	344,000,000	250,000,000	900,000,000
10	2013	306,000,000	344,000,000	250,000,000	900,000,000
11	2014	275,000,000	344,000,000	300,000,000	920,000,000
12	2015	256,000,000	344,000,000	300,000,000	900,000,000
13	2016	225,000,000	295,000,000	300,000,000	820,000,000
14	2017	206,000,000	295,000,000	300,000,000	800,000,000
15	2018	176,000,000	244,000,000	300,000,000	720,000,000
	Total	2,850,000,000	3,800,000,000	2,850,000,000	9,500,000,000

Thus, during 2004-2007, the state and local budgets will increase from EUR 15 million in 2004, to EUR 80 million in 2007, with a corresponding increase of the investments in the water field from EUR 180 million to EUR 306 million during 2008-2013. During 2014-2018, the support from the state and local budget will decrease from EUR 275 million to EUR 176 million.

A significant external support is expected during 2010-2016, mainly from the EU funds (EUR 344-395 million), respectively from to sustain the majority projects from the agglomerations of more than 10,000 p.e.

To these resources, the credits, different public-private partnership would be added.

4.4. Summary and conclusions

At present, the estimated costs for the implementation of UWWT Directive are about **EUR 9.5 billion** for investments, **EUR 5.7 billion** for waste water treatment plants and **EUR 3.8 billion** for urban sewage collecting systems.

For succeeding in the implementation of the UWWT Directive, important financial efforts are needed. A progressive, annual financial schedule, and a contribution of between EUR 550 million/year and EUR 800 million/year, for **12 years after the accession date**, is needed.

GOVERNMENT OF ROMANIA

Taking into account the present financial situation of Romania and the costs generated by the implementation of the UWWT Directive, the proposed annual financial schedule conclude that:

- the direct environmental effects are more significant on the short term if the actions are focused on large agglomerations, where important quantities of waste water are concentrated;
- financial capacities can be more easily mobilized in the large agglomerations than the smaller ones;
- larger investments in treatment are needed for small agglomerations, due to the particular solutions requested;
- from the technical point of view, it is easier and more rapid to extend or to rehabilitate the sewage system or a waste water treatment plant than to build a new facility;

Having in mind the negative effects of waste water on environment from different classes of agglomerations, it may be considered that an integrated and unitary approach is needed in the conditions of a prudential and rational use of water resources. This means an important, constant financial effort of Romania, together with the external support, mainly from the European Union.

Transitional measures
under Directive 91/271/EEC on urban waste water treatment

Waste water collection (Article 3)

Agglomerations	No.	p.e.	Implementation
Sensitive areas: Agglomerations of >10 000 p.e.	263	16 575 167 (61.9 %*)	31 December 2013
Agglomerations of 2 000-10 000 p.e.	2346	10 192 231 (38.1%*)	31 December 2018

* Percentage covered by the Directive (agglomerations above 2000 p.e.)

Collecting systems to be provided:

- for 60.8% of the overall population equivalent of 26 767 398 by the end of 2010;
- for 69.1% by the end of 2013;
- for 80.2% by the end of 2015 and
- for 100.0% by the end of 2018.

Waste water treatment (Articles 4 and 5)

Agglomerations	No.	p.e.	Implementation
Sensitive areas: Agglomerations of >10 000 p.e.	263	16 575 167 (61.9 %*)	31 December 2015
Agglomerations of 2 000-10 000 p.e.	2346	10 192 231 (38.1%*)	31 December 2018

* Percentage covered by the Directive (agglomerations above 2000 p.e.)

Waste water treatment to be provided:

- for 50.5% of overall population equivalent of 26 767 398 by the end of 2010;
- for 60.6% by the end of 2013;
- for 76.7% by the end of 2015 and
- for 100.0% by the end of 2018.