

Important note:
This is not an official translation.

ROADMAP
for the implementation of the
Environmental Technologies Action Plan – ETAP in Romania
(REVIEWED PROJECT)

August 2007

Content

1. INTRODUCTION.....	2
2. RELEVANT NATIONAL POLICIES AND STRATEGIES IN ROMANIA.....	3
4.2. SYSTEMS FOR THE TESTING / CERTIFICATION OF ENVIRONMENTAL TECHNOLOGIES.....	10
4.3. ENVIRONMENT PERFORMANCE MANAGEMENT SYSTEMS.....	12
4.4. THE MOBILISATION OF FINANCING.....	17
4.5. STIMULATING THE MARKET FOR ENVIRONMENT TECHNOLOGIES AND ECO-INNOVATIONS THROUGH THE USE OF MARKET INSTRUMENTS AND STATE AID....	18
4.6. ECO-PROCUREMENT.....	26
4.7. INFORMATION, DISSEMINATION, RAISING AWARENESS AND TRAINING.....	26
4.8. GLOBAL PROMOTION OF ENVIRONMENTAL TECHNOLOGIES.....	28
5. MONITORING AND REPORTING.....	28
6. SETTING MEDIUM TERM PRIORITIES (2007 - 2009).....	28
ANNEX – List of implementation actions 2007 - 2009.....	29

1. INTRODUCTION

On January 28th 2004, the European Commission issued the Environmental Technologies Action Plan - ETAP, in the Communication from the Commission to the Council and the European Parliament "Stimulating Technologies for Sustainable Development: An Environmental Technologies Action Plan for the European Union"¹. This Action Plan aims to promote environmental technologies, with the purpose of decreasing the pressure existing over the natural resources and improving the quality of environment and life, simultaneously with economic growth. Eco-innovations and environmental technologies can generate important contributions in achieving the objectives set in the Lisbon Strategy.

The plan contains priority actions that must be completed by the Commission, the national or regional authorities, the industry and other involved parties, in order to develop and use environmental technologies at a large scale.

The objectives proposed in the Action Plan are grouped by the expected results in three priority areas, as follows:

- Getting from research to market;
- Improving market conditions;
- Acting globally.

In order to implement ETAP, each Member State must develop a concrete plan of measures, a National Roadmap, and also to establish a national system of reporting the progress in achieving objectives.

The necessity to encourage the economic competitiveness, especially during the 2007-2013 period, which for Romania is the first stage of the post-accession process, imposes as an essential requirement the reduction of the technological disparities that separates us from the other EU members, especially in the context of the intensified implementation rhythm of the reviewed Lisbon Strategy. This requires Romania – as a major objective – to create a dynamic and competitive economic environment, able to develop state-of-the-art technologies, according to the strategic requirements of long term development, without creating conflicts between economic interests and the necessity to protect the environment.

Defining the "environmental technology" concept

"Environmental technologies" are technologies *whose application generates a lower impact to the environment than the one generated by the relevant alternative technologies available on the market*. The definition has to be understood in a broader sense, as environmental technologies also include: know-how, methods and procedures, materials and services, utilities, management, organizational systems. Environmental technologies generally include: "clean" technologies:

- technologies for pollution control (air pollution control, waste management)
- the application of new technologies - less aggressive with the environment, products and services consuming less energy (e.g. fuel cells) and natural resources, more efficient administration of natural resources practices (e.g. efficient water supply systems, energy efficient technologies).

The benefits of applying environmental technologies generally consist of a high potential to reduce operational costs

- potential to increase productivity

¹ http://eur-lex.europa.eu/LexUriServ/site/en/com/2004/com2004_0038en01.pdf

- increase of competitiveness
- reduce the consumption of raw materials and energy
- reduce the pollutant emissions level
- prevention of waste production.

In the context of the definition presented above, the environmental technologies apply in almost all economic activity areas. Their use generates long term benefits, exceeds the initial investment costs by relevant amounts and creates pre-requisites for reducing the environmental externalities generated by economic activities.

2. RELEVANT NATIONAL POLICIES AND STRATEGIES IN ROMANIA

➤ *The National Reforms Program*

The efforts undertaken by Romania in the process of preparation for the accession to the European Union has enabled a positive economic evolution in the last few years. Romania intends to continue and deepen the reforms begun in order to achieve the objectives of the relaunched Lisbon Strategy.

Romania aims, through promoting the objectives of the Lisbon strategy, to speed up the transition to an innovation-intensive economy. In this context, the Romanian Government prepared the National Reform Programme, with a view to achieve Lisbon Strategy's objectives. Therefore, its major medium-term priorities are linked to: economic stability and sustainable public finances, increase in economic competitiveness and productivity and to the improvement of the functionality of the employment market.

Starting from these medium term priorities, the National Reform Programme highlights 14 key priorities, underlining the role of innovations and environmental technologies in economic development and competitiveness increase.

According to the National Reform Programme, the efficient use of renewable and non-renewable resources, as well as the protection of biodiversity are of high priority to Romania. In this direction, Romania has set as objective, to significantly reduce by 2010 the current rate of biodiversity loss, by using "clean" and eco-friendly production methods and new eco-efficient materials.

➤ *Public policy documents sustaining the development of environmental technologies*

- The National Development Plan 2007 – 2013, the Sectoral Operational Programme for Environment 2007 – 2013 and the Regional Operational Programme 2007 – 2013;
- The National Strategic Framework 2007 – 2013;
- The National Strategy for Research, Development and Innovation 2007 – 2013;
- The 2nd National Research – Development – Innovation Plan (PNII);
- The National Reform Programme 2007 – 2010;
- The National Strategy for Air Protection and the National Action Plan for Air Protection
- Romania's National Strategy on Climate Change 2005 – 2007 and the National Action Plan on Climate Change;
- The National Strategy and the National Plan for Waste Management;
- The National Strategy for Water Management and the Framework Water Management Schemes for Hydrographic Basins;
- The National Action Plan for Environmental Protection, Regional and Local Action Plans for Environmental Protection;
- Sectoral Operational Program "Increasing Economic Competitiveness" 2007 – 2013;
- Romania's Industrial Policy 2005 – 2008 and the Action Plan for the Implementation of Romania's Industrial Policy for 2005 – 2008;

- The National Strategy for Energy Efficiency and the National Action Plan for Energy Efficiency;
- The Strategy on the Use of Renewable Energy Sources;
- The Strategy for State Aid (2006 - 2013).

Regional Innovation Strategies (RIS) are pending to be created. The Development Region 5 – West has already created such a strategy and an action plan for its implementation. These strategies are materialized into Action Plans, which also include projects of regional and local interest. The innovation priorities are included in the Regional Development Plan, the Regional Operational Program and in the Sectoral Operational Program “Increasing Economic Competitiveness”.

The Sectoral Operational Program for Environmental Infrastructure (SOP Environment), prepared by the Management Authority for SOP Environment within the Ministry of Environment and Sustainable Development, was adopted by the European Commission on July 11th, 2007. The general objective of the SOP Environment is to invest in the environmental infrastructure. This objective will be achieved by implementing projects concerning:

1. the improvement of quality and access to water and wastewater infrastructure, by providing water supply and wastewater services in most urban areas by 2015 and by setting efficient regional water and wastewater management structures;
2. the development of sustainable waste management systems, by improving waste management and reducing the number of historically contaminated sites in minimum 30 counties by 2015;
3. the reduction of negative environmental impact and mitigation of climate change caused by urban heating plants in most polluted localities by 2015;
4. the protection and improvement of biodiversity and natural heritage by supporting the management of protected areas, including the implementation of NATURA 2000;
5. the reduction of the incidence of natural disasters affecting the population, by implementing preventive measures in most vulnerable areas by 2015,
6. the support for SOP management and evaluation; the support for the information on, and the promotion of, SOP Environment .

The total budget for SOP Environment is estimated at 5.6 billion Euros, out of which 4.5 billion Euros represents Community contribution and over 1.1 billion Euros represent national contribution.

Romania will elaborate the *National Sustainable Development Strategy (SDS)* by 2008. The legal framework (Government Decision no. 368/2007 on the organization and functioning of the Ministry of Environment and Sustainable Development) and institutional framework (the general direction for sustainable development inside the Ministry of Environment and Sustainable Development) have been created in order for the Ministry of Environment and Sustainable Development to coordinate the elaboration and implementation of this Strategy.

3. THE CURRENT STAGE OF ENVIRONMENTAL TECHNOLOGIES IN ROMANIA

The implementation of the *acquis communautaire* in Romania requires the re-orientation of economic development and environmental protection strategies, becoming impossible to continue to use a sectoral approach in solving problems, only by limiting their effects.

The development of high-performance technologies, with special emphasis on the environment, represents a State interest. The application of these technologies creates the pre-requisite for the access of the Romanian products to the free European market, the increase of export opportunities, which is beneficial for the Import – Export Trade Balance.

An important step in introducing efficient environmental technologies in Romania was made in 2002, when the legal framework for integrated pollution prevention and control (modified and completed in 2005) was created. During the period 2002 – July 2007, there were issued integrated permits for 551 installations at national level, out of the 660 IPPC installations inventoried. These installations correspond to the following categories of activity: energy production, construction materials, waste management, chemicals and petrochemicals, intensive pig and bird breeding. Efficient environmental technologies have been or are currently being introduced for each of these activities, according to the recommendations of the reference documents for the best available techniques (BREF).

In order to ensure the competitiveness of the environmental technologies and to make use of their full potential, clear legal provisions, as well as financial incentives (dispensations of VAT, low rate credits, tax waiver, etc.) are necessary.

4. THE NATIONAL ACTION PLAN FOR ENVIRONMENTAL TECHNOLOGIES

4.1 RESEARCH – DEVELOPMENT

In Romania, the activity of research, development and innovation (RDI) currently covers over 50 specific scientific and technological areas and continues to be predominant in the public sector (over 60%).

In accordance with the orientation of the Lisbon Strategy, Romania has firmly committed to increase the public expenditures for research to a level of 3% GDP by 2010.

The budget allocated to research registered the following trends during the 2006 – 2010 period:

- the 2006 budget increased with approx. 80% compared to 2005, reaching approx. 0.4% of the GDP (almost twofold increase compared to 0.2% of GDP in 2004);
- the approved budget for 2007 estimates an increase of approx. 50% compared to 2006, which will represent about 0.5% of the GDP;
- for the period 2008 – 2010: Law 486/ 2006 for the 2007 state budget provides for the increase of public funds allocated to RDI to approx. 0.75% of the GDP in 2008, 0.9% of the GDP in 2009 and 1% of the GDP in 2010, according to the objectives set by the Lisbon Strategy.

The National Authority for Scientific Research (NASR) is the governmental institution responsible for policy-making and implementation in the fields of research, development and innovation. NASR was set up in 2005, by taking over the responsibilities concerning RDI from the Ministry of Education and Research.

NASR has the complex mission to ensure the conditions for Romania's rapid and efficient integration in the European Research Area (ERA).

The National Programmes for Research - Development and Innovation

The national policies in the field of RDI are mainly implemented through:

- **the National Research-Development and Innovation Plan**, coordinated by NASR;
- **the Sectoral Research-Development Plans**, which represent research plans of the central public authorities and include high-priority interest programmes and projects in various fields;

- **Core Programs for Research-Development** which include RDI activities specific to the national R&D institutes.

All these plans and programmes have a major contribution to the development of environmental technologies and eco-innovations.

The Sectoral Plan for RD in industry financed, among others, projects that considered the promotion of the environmental technologies:

e.g. "The Adaptation of the Purifying Stations from the Chemical Industry to the Process Technologies"
"Guide for the Industrial Development Considering Eco-efficiency Criteria"

Moreover, the objectives of the RDI policies are sustained by one of the four sectoral programs, which are going to be co-financed from structural funds: the **Sectoral Operational Programme for the Increase in Economic Competitiveness (SOP - IEC)**, through the 2nd priority axis – Increase of the Economic Competitiveness through Research and Development, which will be managed by the NASR.

One of the objectives promoted by the SOP - IEC is to strengthen the R&D capacity, as well as to stimulate the cooperation between RDI institutions and production sector, by financing RDI projects that will generate results directly applicable in the economy, the modernization and development of RDI capacity and infrastructure, the increase in the quality and diversification of the innovative services supply, as well as the stimulation of the innovation demand from the production sector. An important share of these projects will be represented by projects having environmental technologies as outputs.

In order to strengthen the connection between research and economy, NASR supports the development of the specialized network of institutions for technological transfer and innovation – RENITT, through the INFRATECH programme. RENITT, the specialized network for technological transfer and innovation – currently includes 34 entities: eight Technological Information Centers, 12 Technological Transfer Centers, 14 Technological and Business Incubators. RENITT also includes four technological and scientific parks.

The National Plan for Research, Development and Innovation (NPRDI) for 2001 – 2006 included 15 programs, out of which 10 were specialized in specific technological development areas: agriculture, **environment (Environment, Energy and Resources Program - MENER)**, health, energy, transportation, industrial fields, quality infrastructure, information technologies, biotechnologies, micro- and nanotechnologies, aeronautics and spatial technologies.

The MENER Program, within which 380 RDI projects were developed and over 100 institutions (research institutes, universities, economic operators) and 450 researchers were engaged, included a subprogramme dedicated to monitoring technologies, technologies for the protection and rehabilitation of the environment, and also for the mitigation of pollution effects.

Moreover, the programmes within NPRDI 2001 – 2006 (including MENER) also comprised components dedicated to the development of excellence research centers, for the scientific and technical areas specific to each programme.

Research made by ICIM-Bucharest as part of the NPRDI 2001 – 2006 programme lead to the application of the environmental technologies to several economic units, some of which being presented below:

- The adaptation and transfer of the waste water treatment technologies in small compact units from the food industry;
- The modernization/development of the waste water treatment installation from the Bucharest Administration of the Public Areas, in order to respect NTPA 002/05
- Inactivating technologies using the solidification of sludge containing heavy metals (The technology was adapted and transferred for application to the following: Electroaparataj Bucharest, Energomontaj

Bucharest, RATB Bucharest)

- Recovery and use of sludge containing copper, nickel, cadmium, chrome, zinc - as pigments or raw material in the glass industry (the technology was transferred for application to the National Glass Institute - INS Bucharest, Microproduction Unit)

„Promotion of innovative and sustainable technologies for the treatment of water destined to human consumption” is an RDI project supported through NPRDI – MENER Program, implemented by the National Institute for Research and Development in Industrial Ecology (**INCD-ECOIND**), in partnership with the Polytechnic University of Timisoara, the Public Health Institute Prof. Leonida Georgescu, AQUATIM Water and Waste Water Company, S.C. APA PROD S.A., APA R.A. Company, S.C. SECOM S.A.

The project is included in the thematic areas 6.1, 6.2, 6.3, promoted through the RDT Framework - Program of the European Union (FP7 – 2007-2013), as well as in the objectives of the Technological Platform PT25-Water Supply and Sanitation. The project implementation includes activities of fundamental research, applied and transferable research. The project begun in October 2005 and it will run for 34 months.

- The main objective of the project is to optimize the management system of the water destined to human use, in order to comply with the national and European provisions, especially with those concerning **the development/implementation of efficient and sustainable treatment technologies, according to the impurification matrix of raw water resources.**

- The project outputs are: • Knowledge on the current situation of the non-compliant treatment stations at national level, evaluation of the impurificationmatrix associated with the non-compliant parameters through direct control, evaluation of the causes of non-compliance. • Identification of pollutants and micro-pollutants with limited or no monitoring, which have a potentially negative effect on the drinking water quality (TOC, THM, anionic detergents, microorganisms etc.) • Excellence Research for creating coherent, unitary and cost-effective technical solutions for treatment, in accordance with the impurification matrix of raw water sources. • Improving management system for chemical sludge/ waste washing water in order to reduce the negative impact on the environment. • Setting up of an *e-clean* water centre – for knowledge and information sharing at a sector level. • Creation/development of a national excellence network. • Organisation of trainings for potential technology users, directly or on-line, using the *e-clean water* network. • Direct dissemination through transfer to partners (water – drain operators) and indirect dissemination (articles, communications, patents)

Centre for Excellence in Unconventional Technologies, Complex Equipment and Environment Services

was established within the National Research-Development Institute for Environment Protection in Bucharest (NRDIEP - ICIM), based on a research contract part of the NPRDI 2001 – 2006. The initial partners of NRDIEP – ICIM were the Romanian Society of Electrotechnologies (S.E.R.) and the Romanian Electrotechnical Committee (C.E.R.). The Centre collaborated with excellence centres from France (e.g. Centre for Excellence in Waste Management, Ales School of Mines), Japan (e.g. International Centre for Environmental Technology Transfer), Germany (Centre of Excellence in Thermal Treatment of Waste, Wursburg). The centre continues its activity in implementing environmental legislation, mainly in the area of production and environment protection technology imposed by the EU requirements (e.g. IPPC Directive), and in the field of unconventional energy sources.

The **participation to international RDI programmes** (such as EU's Framework Programmes for RD Technology, COST, EUREKA and NATO Scientific Program) is also ensured through the NPRDI. Out of the 441 projects awarded to Romanian researchers as part of FP6, approx. 15% (67 projects) are related to priority themes such as sustainable development, global change and ecosystems. (FP6/Sustainable development, global change and ecosystems).

In order to create the conditions to prepare the scientific and technical community for the EU's Framework Research Programme in 2007–2013 – FP7., in 2005 the National Authority for Scientific Research launched the **Excellence Research Program – CEEX**, which promotes guidelines and research objectives in line with those of the FP7.

The CEEX Research Excellence Programme promotes the quality, efficiency and competitiveness of research activities. It directly stimulates the creation of research – industry consortiums, as well as

the orientation towards high technology areas, in line with specific priorities at European level, including those regarding the environment.

The objectives of the CEEEX Programme related to environmental address the **sustainable management of environmental resources and the development of environmental technologies**.

From the core programmes run by national R&D institutes, the ones pertaining to environmental protection area (INCD ECOIND, ICIM – Bucharest, INCDDD – Tulcea, INCDM – Constanta) are to be mentioned. These are focused on the introduction and application of environmental technologies at a large-scale.

The NASR has recently launched the National Strategy and the National Plan for Research – Development and Innovation for the period 2007 – 2013, approved by 217/2007 and 475/2007 Government Decisions.

The National Strategy for Research – Development and Innovation 2007 – 2013, approved by Romanian Government in March 2007, aims at increasing economic competitiveness through innovation, with direct consequences on the increase of the technological capacity of the enterprises, which will benefit from the services provided by the research platforms and integrated research networks.

The National Strategy has set the following objectives for the national RDI system:

1. to create knowledge and achieve high scientific and technological results, globally competitive, with a view to increase international visibility of the Romanian research and eventually to transfer the results in the socio-economic practice;
2. Increase the competitiveness of the Romanian economy through innovation, with impact on economic operators and trough knowledge transfer to the economic practice;
3. Increase the quality of social life, i.e. identify technical and scientific solutions to improve social development and the human condition.

The public investment for RDI takes into account the development of knowledge, motivated by social and economical needs, and the research will be evaluated in terms of its innovative capacity.

The main instrument for the implementation of the RDI National Strategy is the **National Plan for Research, Development and Innovation for 2007 – 2013 (PNII)** which includes six major programmes: *Human Resources, Capacities, Ideas, Partnerships in Priority Areas, Innovation and Capacity Building*.

The fourth program, *Partnerships in Priority Areas*, is the most complex programme of the NPRDI and aims to create the conditions for a better collaboration between various RDI entities, economic operators and/or public administration units. The Partnerships Programme aims at strengthening the connection between companies and R&D institutions, by using various types of partnerships in order to integrate R&D activities and technology transfer activities (networks, clusters, poles), as well as to implement complex research projects that are supposed to attract international top level scientists.

The third subprogramme of the Partnerships Programme - *Environment* - includes the following research directions:

1. Methods and mechanisms to reduce environmental pollution;
2. Waste management systems;
3. Ecological reconstruction and protection of “hot spots”, conservation of protected areas;
4. Land-use planning, infrastructure and utilities;

5. Constructions.

The *Innovation* Programme was created taking into account the importance of finalizing research through practical results, related to technical and technological developments. The programme will especially support industrial and pre-competitive research activities that would lead to the development of high added value products, technologies and services (new or significantly improved). This programme will also sustain the development of innovation infrastructure.

Technology platforms

In line with the European trends, NASR launched in 2005 a major action to support the creation and the enforcement at national level of technology platforms based on public-private partnerships, in order to allow their subsequent integration among the 26 **integrated technology platforms**, currently developed at European level.

MEdC – NASR is currently monitoring Romania's participations to 21 European technology platforms, from which we mention: hydrogen and fuel cells, water management, maritime transportation, manufacturing technology, Nanoelectronics, Nanomedicine, innovative medicine, sustainable chemistry, genomics and biotechnology for plants, aeronautics. Within the framework of the technological platforms, there are 44 active public institutions and 44 active private institutions.

NPRDI's programs and the CEEX program are supporting the development of the technology platforms.

“Research and development technology platform for underwater utilitarian robots: developing a mini-robot for underwater investigation - NETROV” is a project financed by the CEEX Program, being implemented between 2005-2007, and combines the experience of a producer (shipyard - SME) of marine vehicles, with the scientific and technical capacity of the R&D institutes and of University research centres (National Institute for Marine Research and Development “Grigore Antipa” from Constanta, Ovidius University and Marine University from Constanta, Electrotechnical Research Institute, The Polytechnic University Bucharest and SC BUTA&CO SA).

The project's objective was to create a technology for the development of a multifunctional underwater robot, destined to scientific observations and to non-destructive utilitarian activities, flexible to market demand, low-cost and therefore also accessible to the amateur. Users.

The project **“Scientific and technology transfer platform in operational oceanography area – instrument to increase security on the West side of the Black Sea”**, coordinated by the National Institute for Marine Research and Development of Constanta and supported by the CEEX programme, aims to improve the scientific connections between the specialized Romanian institutes, to identify the scientific and technological needs of the producers and users of the oceanographic products, to strengthen the expertise and the technological transfer capacity of the institutions from the national Platform and to disseminate the results to the final beneficiaries.

Regional Innovation Strategies

Between Romania and the other Member States there are major disparities, especially in terms of competitive advantages of the enterprises, caused by low productivity in most of the industry's sectors.

The productivity level in the processing industry is approx. 4.5 times smaller than EU average. Although the productivity level had an increasing trend, this was not a result of modernization of production or of a competitive management.

The productivity increase depends both on the technological development realized through tangible (equipment, technology) and intangible (licenses, patents, trademarks, and know-how) investments, as well as on the improvement of products' quality, marketing, applied RDI results and on other factors that can increase added value.

In these circumstances, the innovation capacity and its dissemination rate become crucial for the increase of enterprise competitiveness. In Romania, the share of innovative companies is still low compared to the European average (where 51% enterprises are technologically innovative), but the trend is expected to increase from 17%² to 19.3%³. The innovation in industry and services sectors is mainly based on acquisitions of new equipment and technologies, and only to a small extent on the company's own research activity or on the application of R&D results in economy. According to the National Statistics Institute, the transfer rate of these results to the industry is not satisfactory, due to the low capacity of the companies to implement them in production. (*The National Reforms Plan 2007-2010*).

As the local and regional economies in Romania are poorly innovative, it is necessary to invest in the modernization of local and regional areas, in accordance with the Regional Innovation Strategies. The elaboration of these strategies is pending at regional level and they will also include orientations regarding market demand. The achievement of these objectives will be supported by the Regional Operational Program (ROP) 2007 – 2013.

Moreover, it is necessary to sustain and develop **the infrastructure of innovation and technological transfer, especially at regional level**, aiming the establishment of **specialized departments** for the dissemination and transfer of environmental technologies **within the Local Chambers of Commerce and Industry**.

4.2. SYSTEMS FOR THE TESTING / CERTIFICATION OF ENVIRONMENTAL TECHNOLOGIES

- **The standardizing activity**

At national level the standardization activity is coordinated by the Standardization Association of Romania (ASRO) and is realized through technical committees, composed of qualified representatives from various industrial fields, research institutes, public authorities, consumers associations and other related organizations.

As a CEN/CENELECT and ETSI member (through the National Standardization Organization - ASRO), Romania has the obligation to adopt European standards as national standards. A European standard can be followed by Romanian users only if after its adoption as a national standard by ASRO.

- **Promoting best practice in the field of intellectual property**

In Romania, the promotion of intellectual property protection and the customers' guarantee to benefit from the use of a product have been neglected until present. In order to promote these, the National Strategy for Intellectual Property (2003 - 2007) stipulates measures such as:

- awareness raising and training of the public on the importance of the intellectual property rights;
- the adoption of protection measures for consumers, against the risk of purchasing products or services that could affect their life, health, security or economic interests.

² 2000-2002 Analysis of Innovation, according to EUROSTAT CIS 3 methodology.

³ In accordance with 2002-2004 Analysis (EUROSTAT CIS 4 methodology).

- **Integrated Pollution Prevention and Control. Guides on the Best Available Techniques**

The principles of pollution prevention and integrated control overlaps best with the principle of sustainable development, and through their related documents they offer practical mechanisms, applicable in all member states.

The reference documents for the best available techniques (BREF) are public documents, available for use to the general public, as well to the non-governmental organizations from all sectors. Operators and producers of installations can use these documents as reference for establishing the performance targets to be achieved in the area of environmental protection.

Out of the 33 reference documents for the best available techniques (BREF), elaborated or being elaborated at European level, Romania has adopted 11 BREF documents by Ministerial Orders, for the following areas: cellulose and paper industry, lime and cement industry, chlorine-alkali, non-ferrous metallurgy, cast iron and steel production, glass industry, tanning industry, textile industry, milk and food industry, industrial cooling and monitoring systems. The documents are available at the following web addresses: www.mmediu.ro, <http://ippcromania.artweb.ro> and <http://www.anpm.ro/index.php?init=global.static&file=bref>.

In 2005, following a Ministerial Order, the National Centre for Coordination, Information and Updating of the Guides for Best Available Techniques and Communication with the European Office for IPPC and with the European Information Centre (IPPC Centre) has been set up within the Ministry of Environment and Sustainable Development.

At present, the Technical Working Groups (TWG) from the IPPC Centre (organized for each IPPC category with relevance to Romania) are analyzing the EU's BREFs in order to elaborate similar guides for Romania. The drafts of the national guides will be reviewed in comparison with the European ones. These TWGs also ensure the information exchange at national level regarding BREF.

The procedure to issue the integrated environmental permits provides for the analysis of the proposed solutions for modernizations/introduction of new technologies, against the BREF recommendations. According to this procedure, the competent authority, together with the economic operator, establish the environmental responsibilities for the operator, in order to comply with the requirements of the specific legislation.

In the first semester of this year, the National Environmental Protection Agency – NEPA – coordinated the revision of the inventory of the IPPC installations. On June 25, 2007 there had been issued integrated environmental permits for 551 IPPC installations out of the 660 IPPC inventoried installations as follows:

- 430 integrated environmental permits for installations without transition periods and 121 for installations with transition periods;
- 109 installations are pending the integrated permitting, 69 of these being without transition periods and 40 having transition periods.

- **The Environmental Quality Monitoring System**

The Ministry of Environment and Sustainable Development (MESD) has the responsibility to ensure the compliance with the environmental regulation, through an accurate and permanent assessment of the environmental status, as well as of the management and regulation of the environmental monitoring activity.

In order to comply with European Directives regarding air and water quality, the industrial pollution control, horizontal legislation, nature protection, noise, waste and chemicals management, it has been initiated the establishment of the national environmental monitoring network. The national, regional and local laboratories have been equipped, and the licensing process has been started. At the moment, the national air quality monitoring network is being created. Information about air quality in four major urban cities (Bucharest, Craiova, Cluj-Napoca and Iasi) is available on www.calitate aer.ro.

The National Reference Laboratory for Air Quality within NEPA was endowed with laboratory and data quality management equipment. 38 Local Agencies (out of 42) were equipped with automatic stations for air quality monitoring and other related equipment. This network is one of the most modern air quality monitoring networks in Europe.

4.3. ENVIRONMENT PERFORMANCE MANAGEMENT SYSTEMS

In compliance with the objectives of the Lisbon Strategy and of the National strategy on IT&C, *the promotion of the advanced information techniques and the extension of their use* is envisaged.

In Romania, the use of Geographic Information Systems (GIS) technology is widely used in environmental protection both at central and local level. GIS is currently used in the field of nature protection, atmospheric protection, weather and hydrographic forecast, water resources management, risk management, infrastructure management and agriculture.

High resolution optical teledetection, GIS and LCCS (Land Cover Classification System) were used to create:

- Corine Land Cover – maps for land-use;
- Biodiversity – maps for virgin forests, protected areas, species distribution;
- Water survey – hydro geographic system, territorial infrastructure system;
- Soil maps, geological maps, vulnerable areas maps – for the implementation of “Nitrates Directive” (an information system that evaluates the nitrates flows towards the surface and underground water).

The PHARE 2005 project “Acquisition of satellite images for the creation of GIS maps” will provide a GIS database to support decisions in the field of environmental protection.

Moreover, in water management sector, new technologies for *innovative performance management systems* are being implemented, as presented below:

- Modernization of the warning and forecast system, based on latest generation technology (DESWAT)
- Modernization of the decision making system for the implementation of an integrated water management system (WATMAN)
- Modernization of the water information system in order to comply with EU requirements (WISE system report)

The improvement of environmental performance of economic activities mainly aims the following: implementation and certification of the eco-management systems and audit schemes - EMAS; eco-labeling certification for groups of products; equipping laboratories for testing and standardizing, certification of products; applying Product's Lifecycle Analysis; introduction and application of the eco-design requirements; increasing energy efficiency.

- **Eco-management and Audit Scheme / EMAS**

An important tool for the improvement of the environmental performance of economic activities is eco-management. The implementation of such a system supports a holistic approach of the environmental issues:

- economic quantification of the impact on the environment and
- optimization of human and material resources in the process of compliance to environmental regulations.

The Romanian industry has become increasingly aware of the fact that environmental protection is a condition for competitiveness, the economic operators becoming increasingly interested in implementing and certifying environmental management system (EMS).

Maintaining EMS implementation is made through information dissemination, experience exchange between operators who tried or are trying to implement such systems, promotion of pilot-projects within international cooperation programmes and non-refundable financing from the State budget.

In Romania, according to the data from Romanian Society for Quality Assurance on July 31, 2007, there were 1349 certificated organizations with ISO EMS.

- *Eco-management and audit scheme (EMAS)*

Regulation (EC) No 761/2001 of the European Parliament and of the Council of 19 March 2001 allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS). is applicable to all organizations (the term "organization" refers to companies, corporations, firms, enterprises, authorities or institutions, parts or a combination of these, whether incorporated or not, private or public, with their own functions and administrations) that want to improve environmental performance.

The continual improvement of environmental performance can be achieved through:

- creation and implementation of environmental management systems by organizations;
- systematic, objective and regular performance review of these systems;
- validation of information in the environmental statement, by a certified environmental verifier;
- supplying information concerning environmental performance and;
- maintaining a dialogue with the public and with other interested parties.

Public information concerning the environmental performance of an organization is a very important aspect of the EMAS objectives. This is achieved through the environmental statement, which provides information to the public, regarding the environmental impact and the performance of the organization, and on the organisation's active involvement in EMAS implementation, through its employees.

The organization's participation to the EU eco-management and audit scheme is granted by the EMAS registration of the organizations. The Ministry of Environment and Sustainable Development is the competent authority to apply EMAS stipulations. Thus, it has been created the organization infrastructure at national level, with the aim of applying the EMAS provisions:

- The EMAS Consultative Committee and The EMAS Bureau act as national competent authorities for the EMAS registration of the organizations;
- The Commission for the Accreditation of Natural and Legal Persons as Environmental Verifiers, also called Commission for Accreditation, is the national accreditation and monitoring body for environmental verifiers).

In order to encourage voluntary participation of the SMEs to EMAS, the SMEs benefit from a 25% discount for EMAS registration or renewing EMAS registration.

In order to improve the capacity of the national, regional and local authorities (involved in the application of the EMAS stipulations and in the national promotion of the community eco-management scheme) in 2006, a TAIEX seminar entitled "The implementation of the EMAS Regulation's provisions" was organized with the support of the European Commission. Moreover, in order to encourage and accelerate the EMAS registration process of the organizations, on July 12-13 2007 a TAIEX seminar entitled "The promotion of the EMAS Regulation in Romania" was organized.

Until the end of 2007, the Ministry of Environment and Sustainable Development ensures the free publication and distribution of various brochures, leaflets and advertisements promoting EMAS, as well as the organization of information and training conferences,.

- **Lifecycle Analysis**

Lifecycle Analysis is a method for the appraisal of the impact of a product or a service on the environment, even from the design stage (including the resources to be used) until the removal of the product after its use. Through the application of this tool, consumed material and energy resources, as well as emissions and waste are identified and assessed and their potential impact on the environment is evaluated. As a result, there can be identified options to reduce this impact.

Lifecycle Analysis of a product requires resource, waste and emission flow accounting, and can be applied to the production and services processes, but also to the strategic assessment of plans and programmes. The promotion of such analysis – especially in the production processes – is starting to be increasingly used in the procedures related to the decision-making for the improvement of operations performance.

A series of projects was realized in the framework of the Sectoral Research – Development Program for Industry, in order to raise awareness concerning this type of approach. This can be a way to decouple economic growth from its side effects on the environment.

Under the Sectoral R&D Plan in the industry, there were financed projects that considered the use of the lifecycle analysis as an assessment tool of the effects on the environment.

Examples:

„Alternative solution for the packaging production according to the EU requirements”

„Study concerning the decrease of heavy metals level in batteries and vehicle accumulators”

- **Community eco-label**

The "Awarding Eco-label Scheme" set a promotion system for the products having a minimum impact on the environment for their entire lifecycle

Regulation (EC) No 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a revised Community Eco-label Award Scheme was transposed in the national legislation by the Government Decision 236/2007 (regarding the establishment of measures to ensure the application of the Regulation (EC) No. 1980/2000). The eco-label is awarded upon request and describes the general environment performance of a product or of a service.

The Ministry of Environment and Sustainable Development is the competent authority for the award of eco-labels, being supported by the National Commission for Eco-label Awarding

Until present, there have been awarded two eco-labels, for:

- the set of textile products manufactured by S.C. Argeșeana – Pitești
- bed mattresses produced by SC Bioflex S.A. – Sibiu

The promotion and the advertisement of eco-labelling are permanent actions. The first informative brochures were also created: "Eco-label – Information Brochure for the Economic Agents" and "Eco-label – Customers Guide"

On February 26, 2007, the campaign promoting eco-labelling in Romania was initiated through the organization of several seminars across the country. On March 15-16, 2007 a TAIEX seminar was held in Bucharest, debating issues regarding the implementation of the Regulation (EC) No. 1980/2000.

Two seminaries were organized in partnership with the Chamber of Commerce and Industry of Romania.

An European Flower Week in Bucharest will be organised in October 2007. This event will be realized with the support of the European Commission's experts.

For the promotion seminars, there will be used leaflets, brochures, flyers, informative sessions and informative bulletins:

- Free publication and distribution of the brochures containing all the information regarding the eco-label, relevant to the customers and economic operators;
- Creating and promoting a special website dedicated to community eco-label;
- The ecolabel will also be promoted in the media, especially in the press, considering that this targets the general public;
- The ecolabel will be promoted in schools through informative classes.

• **Ecodesign**

Romania is in the process of completing the transposition in the national legislation of the provisions of the 2005/32/EC Directive, which sets the framework for the ecodesign requirements for the energy-using products. This directive amends the Directives 92/42/EEC and 2000/55/EC.

Thus, in June 2007, the Ministry of Economy and Finances published a draft Decision regarding the requirements for the eco-design of the energy-using products. This draft Decision will also amend: the GD 574/2005 regarding the requirements for the efficiency of new warm water boilers (which use liquid or gas fuel); the GD 1039/2003 regarding the requirements for the labelling and energy efficiency of the refrigerators for common use before launching them on the market and the GD 1160/2003 regarding the requirements for energy efficiency, before launching on the market the ballast for the fluorescent light sources.

- The Draft Decision was published for public comment until June 23, 2007. The Decision, which assigns the Ministry of Economy and Finances as the competent authority, implements the Council Directive 2005/32/CE.

The implementation of the ecodesign provisions contributes to the sustainable development through encouraging continuous improvement – which does not involve excessive costs – as regards the environmental impact of the energy-using products. This is done mainly through the identification of major environmental pollution sources, thus avoiding the transfer of pollutants from an environmental component to another. Moreover, the compliance with the specific requirements regarding ecodesign will contribute to the fulfilment of Kyoto Protocol's requirements, by improving the energy efficiency of the energy-using products.

In order to implement this Directive, Romania has the following responsibilities:

- the designation of the competent authority responsible for monitoring the market and the establishment of the competencies and organizational matters;
- to ensure that all the interested parties, and especially customers, can send their observations regarding the conformation of the EuPs (energy-using products) to the competent authorities;
- to encourage SMEs to adopt an eco-friendly approach, starting from the design stage of these products.

In 2005, in Romania took place, the campaign "EcoDesign for SME" under a project financed by the SME European programme. It has also been elaborated the "Support Guide for Enterprises from the Electrotechnical and Electronical sector for the introduction and application of the EcoDesign methodology in equipment production".

This guide is an useful tool for the improvement of the environmental performance of the equipment for the entire lifecycle, and especially at the end of its lifecycle, when the equipment becomes a waste. The guide is addressed to those interested in designing and developing electrical and electronic products and to the environmental managers from the electronics and electrotechnical companies.

- **Increase of the energy efficiency and use of the renewable resources**

The economic competitiveness and sustainable development are based to a large extent on the efficient use of the energy resources and energy.

The goals of the Romanian Energy Policy are in accordance with the Lisbon Strategy, the European Energy Policy and with the responsibilities assumed in the accession process, being oriented to the safety of energy supply, improvement of energy efficiency and environmental protection, all these considering the necessity of economic development.

The long term goals are to **reduce the primary energy intensity in order to achieve the national target (reduction with 40% by 2015) and to reduce the pollution generated by the energetic sector.**

Romania is characterized by an extremely high primary and final energy intensity, compared to the EU-25 average (approx. four times higher). The comparative analysis of the specific competitiveness indicators shows that the energy intensity is the competitiveness factor with the greatest gap from other EU countries.

According to the national strategies for energy efficiency and for the use of renewable energy sources, Romania's target is to reduce the primary energy intensity and to increase the weight of the renewable energy in the national gross energetic consumption. These targets are achievable only by significant investments in the rehabilitation and extension of the production capacities, in the transportation and distribution infrastructure, and in the environmental protection.

Although Romania has a significant technical potential for the use of renewable energy, only a little part of it is currently used, except for large hydro-electric power plants. The major intervention areas are the following: increase of energy efficiency, increase of renewable energy use and reduction of the negative environmental impact of the energy system.

The following indicative operations are established:

- support for the investments for the establishment of new electrical and thermal power production capacities, for modernization and rehabilitation of the existing plants in order to increase energy efficiency;
- investments in new electric and thermal power plants using renewable energy resources such as wind power, hydro-energetic, solar, biomass and geothermal.

In the framework of the bilateral collaboration with Denmark, projects related to the use of the renewable energy were realized: "Rumegus 2000" ("Woodchip 2000") in five locations and "The Use of Geothermal Energy in Heating Systems of Oradea (zone 2) and Beius".

As part of the Sectoral Plan for R&D in Industry 2007, one of the themes proposed for financing is "Strategic Approach Regarding the Proper Use of the Production Capacity, the Use of Biofuels and Action Guidelines for the Development and Use of the Biomass"

Through the Sectoral Operational Program "Increase the Economic Competitiveness", Priority Axis 4 – *Increasing Energy Efficiency and Security of Supply in the context of combating Climate Change* – investments will be supported during the 2007 – 2013 period in the following key areas: efficient and sustainable energy (increasing energy efficiency and sustainable use of the energy system from an environmental perspective); increasing use of renewable energy resources in order to produce green energy; supporting the investments for the interconnection of the national transport networks of energy and natural gases with the European networks.

In October 2006, Romania became official partner of the Renewable Energy and Energy Efficiency Partnership (REEEP), a partnership which sustains at international levels the policies and regulations in these areas. The Romanian representative is the Romanian Agency for Energy Conservation (RAEC / ARCE)

4.4. THE MOBILISATION OF FINANCING

In order to attract the necessary funds for the development and application of environmental technologies/eco-innovations, all financing sources – national, European and global - are being considered.

- **The main instruments for the implementation of the RDI policies**

The national RDI activities are financially supported at a national level by:

- i) RDI programmes, coordinated by the National Authority for Scientific Research
 - **Excellence Research program (CEEX)**
 - **National Plan for Research – Development and Innovation (NPRDI)**
 - **Core programmes**
 - **INFRATECH programme** – to sustain the development of the infrastructure and specialized services for technological transfer and innovation;
- ii) Research programmes coordinated by the Romanian Academy;
- iii) RD Sectoral Programmes – for RD activities, required for the achievement of the strategic goals of the development specific at sectoral level.

The access to the RDI programmes financed by public funds is granted according to a competitiveness regime, except for the core RD programmes, and it is open to all categories of participants – R&D institutions, universities, enterprises with R&D capacity, SMEs, etc.

- **European Framework Programmes**

Since 1996, Romania has been contributing annually to the budget of the European Framework Programmes. Romania contributed with 77 million Euros to the fund allocated to the Framework Programme for Research – Development for the 2002 – 2006 (FP6) period; it should be mentioned that only 10.3% of the project proposals from Romania were financed as part of FP6, which represents a much lower percentage compared to the average of the European countries, of 31.58%.

The funds allocated through the NPRDI aimed at supporting the projects awarded to the Romanian researchers within the international research programmes, including the RTD Framework programmes of the EU, represent about 7% from the budget of the entire Plan.

- **EU and global financing for the development and implementation of the environmental technologies**

For the development of the environmental technologies, Romania benefits from the experience in using pre-accession instruments: *PHARE, ISPA – Environment, SAMTID, SAPARD, LIFE*, as well as **post-accession instruments**.

There are significant financial resources (approx. 400-500 mil Euro/year) available from the **ECONOMIC AND SOCIAL COHESION FUND** destined to the development of environmental projects.

Romania adhered to the Global Environment Facility (GEF) in 1994 and implemented until now 20 GEF projects (8 national projects and 12 regional projects), most of them regarding the protection of the Black Sea and Danube waters.

As part of the five priority axes of the *Sectoral Operational Program for Environment*, support will be provided for the following: the extension and modernization of water and waste water systems; the development of the integrated waste management and rehabilitation of the contaminated sites; the improvement of the urban heating systems in the selected priority areas; the implementation of the adequate environmental management systems for the protection of nature; the development of the infrastructure for the prevention of natural risk in the most risk exposed areas.

As part of the Priority Axis 1 of the *Sectoral Operational Program "Increase of Economic Competitiveness"* support will be provided for the procurement of licenced services for the implementation and certification of the environmental management and audit scheme (or of EMAS registration), as well as for achieving and verifying the compliance with the requirements for ecolabelling. This programme also supports the development and accreditation of the laboratories for testing.

Through **Regional Operational Programme 2007 – 2013** – Priority Axis 2: *The improvement of the regional and local business environment*, the following business structures will be supported: industrial, scientific, technological, business parks and logistics platforms.

In order to **encourage the participation of the private sector** in RDI activities, by increasing their expenditure (including investments) for the compliance with the European and international regulations related to the environment, including the introduction of eco-technologies..

4.5. STIMULATING THE MARKET FOR ENVIRONMENT TECHNOLOGIES AND ECO-INNOVATIONS THROUGH THE USE OF MARKET INSTRUMENTS AND STATE AID

- **Environmental Fund**

This fund was created in 2000 as an economic and financial instrument for the support and implementation of environmental priority projects. It became functional in 2002. The management of the Environmental Fund is ensured by the Environmental Fund Administration, a public institution with legal entity, integrally financed from own revenues, under the coordination of the Ministry of Environment and Sustainable Development.

The National Environmental Fund was created according to the „Polluters pays” and „Extended Producer’s Responsibility” European principles,, in order to implement the legislation concerning environmental protection, in accordance with the *acquis communautaire*, and it is distinct from any other financing instrument.

In the first stage, the **National Environmental Fund** was managed according to the Law 73/2000, with its subsequent amendments and completions, and currently it’s regulated by the Government Ordinance 196/2005 (approved with amendments and completions through the Law 105/2006).

The revenues of the Environmental Fund are public revenues, comprised of taxes and contributions that respect legal regime for the taxes, contributions and other duties to the consolidated general budget, regulated by the Government Ordinance 92/2003 on the Fiscal Code.

The Environmental Fund Revenues are:

- 3% from the income of selling ferrous and nonferrous waste by their owners, natural persons or legal entities. The amounts are kept at the source by the certified economic operators (collectors or sellers), according to the current legislation regarding recyclable industrial waste, and they are obliged to transfer the money to th Environmental Fund;
- pollutants emission tax, from fix and mobile sources, received from the economic operators;
- taxes received from the economic operators, for the use of new storage space for recyclable waste;
- 1 RON tax per kilo of packaging introduced on the national market by producers and importers of packaged goods and retail packages;
- a contribution of 2% of the value of the substances classified as environmentally hazardous, introduced on the market by producers and importers (except for the substances used in the farmaceutical industry);
- 1% of selling value of the timber (sold by the owner or administrator of the forest), which is paid to the Environmental Fund by the buyer (who processes it);
- 1 RON tax per kilo of tire, received from the producers and importers of new tires or of used tires for reuse purposes;
- a contribution of 3% of the amount received anually by the administrators of the hunting areas;
- donations, sponsorships, financial support from natural or legal persons, Romanian or external, or international institutions;
- the amounts received from the reimbursement of the granted finances, rates, delay penalties and other financial operations from the Environmental Fund;
- the amounts received following fund-raising events organised for the Environmental Fund;
- the amount of the taxes for the permitting activity (environmental permits, agreements and authorizations);
- all types of rates and penalties owed by the Environmental Fund debtors.

These funds are being directed back to the economic operators that have issued Compliance Programmes. This way, they are supported to achieve the environmental requirements, assumed in the negotiation Chapter 22 – Environment. The Fund also sustains NGOs, local authorities and education units, who contribute to the improvement of the local life quality and to the public information on environmental issues.

In January – December 2006 the amounts received by the Environmental Fund increased with 30% compared to 2005, with 113% compared to 2004 and with 181% compared to 2003.

In 2006, the total amount of the revenues of the Environmental Fund was **193.375.706 RON**.

In the first quarter of 2007 an amount of 101.307.787 lei was received, which represents 59.59% of the forecast for 2007, according to the Revenue and Expenditure Budget of Environmental Fund Administration (EFA).

Regarding the financing of environmental projects, the Environmental Fund supports projects from the following 16 categories:

- a) pollution prevention;
- b) reduction of the negative impact on the atmosphere, water and soil;
- c) reduction of noise levels;
- d) use of clean technologies;
- e) waste management (including hazardous waste);
- f) protection of the water resources, treatment and waste water plants for local communities;
- g) integrated management of the coastal area;
- h) biodiversity conservation;
- i) management of the protected areas;
- j) public education and awareness raising on environmental protection;
- k) increase the production energy from renewable energy sources;
- l) reduction of the greenhouse gases emissions;
- m) ecological reconstruction and sustainable management of the forests;
- n) re-forestation of degraded land;
- o) closing elutriation ponds in mining areas;
- p) activities for the prevention, elimination and/or reduction of the effects caused by natural hazards to the water management public infrastructure.

In order to implement the environmental legal requirements, including the reduction of the environmental pollution (caused by traffic in large cities), Romanian Government has created in 2005 „The Programme for Renewing the National Car Park”, with the following goals:

- reduce air pollution in large cities (caused by exhaust gases), in order to limit the air emissions according to the European requirements;
- prevent the waste production, as a consequence of the abandon of the old used cars;
- achieve the goals of the environmental *acquis communautaire* concerning the recovering and recycling of the waste (produced from used vehicles);
- respect the timelines stipulated in European Commission’s Roadmap for Romania regarding the closing of the Negotiation Chapter 22 – Environment;
- reduce the negative effects of the air pollution on environment and human health..

In 2005, following to of the implementation of the Programme for Renewing National Car Park, the results were:

Deleted: †

- the elimination of 14.607 old pollutant vehicles, through the allocating 43.823.000 lei (RON) for the Environmental Fund;
- contributions to the State budget of 21.682.500 **Euros** from taxes and turnover tax, received from certificated producers;
- the reduction of the air pollution with 325.500 kg of CO, significant quantities of lead, hydrocarbons, volatile organic compounds (which contribute to secondary pollution – ozone and other photochemical oxidants)

The Programme for Renewing National Car Park was re-launched in 2006, with a budget of 49.500.000 lei for taking out of use another 16.500 vehicles, of at least 12 years old.

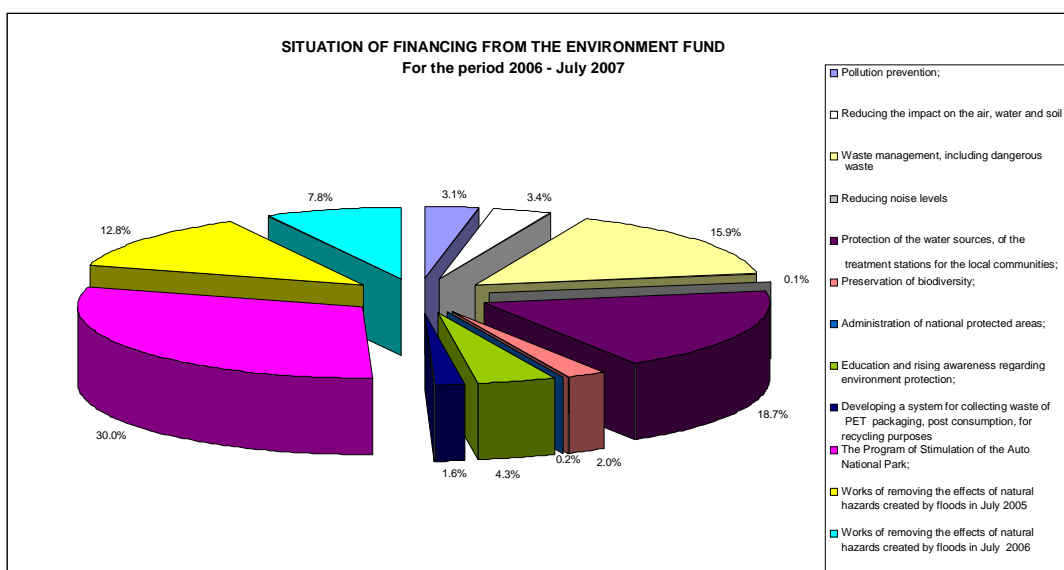
29 producers, importers of cars and their representatives were accredited. The owners of the old polluting vehicles received a subvention of 3000 RON, as a first installment for buying a new car from the certified producers and/or importers.

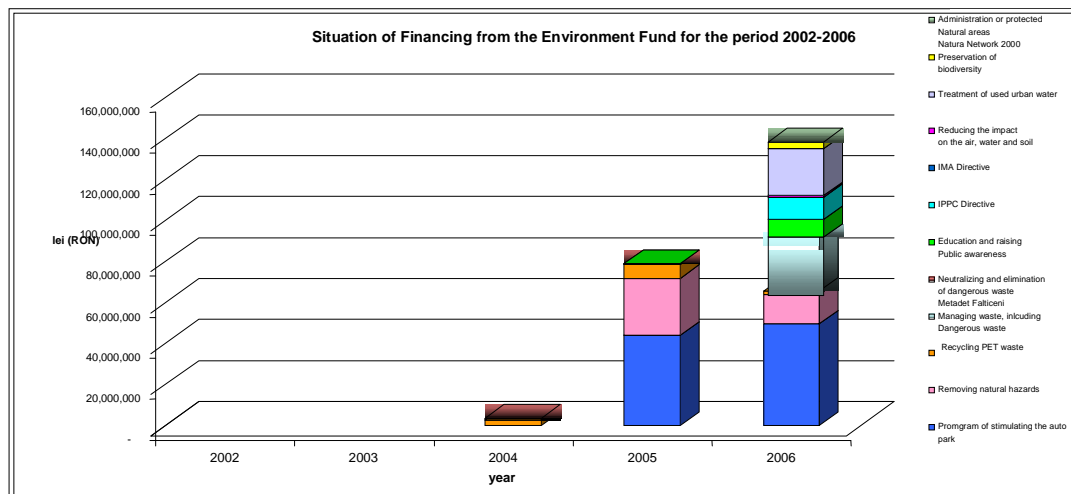
In 2006, following the implementation of this programme, 15.110 polluting vehicles were disposed of, by allocating a non-refundable amount of **45.330.000 lei** from the *Environmental Fund* (92% achievement).

This programme will be re-launched in 2007, as well. Compared to other years, this year the program will have three stages:

1. Until August 31st, 2007
2. September 1st – November 12th, 2007
3. November 13th – December 12th, 2007

56 contracts for non-refundable financing were signed between the Environmental Fund Administration and validated legal entities (producers, authorized importers or their representatives), from which the citizens can buy the new vehicles. The financing for 2007 is 49.500.000 RON, for the disposal of 16.500 vehicles, older than 12 years.





The categories of eligible projects for financing through the Environmental Fund are assigned through an annual plan, adopted by the managing committee of the Environmental Fund. Most of the resources of the Environmental Fund are directed to projects related to the procurement of non-polluting equipment and waste management (including dangerous waste).

At present the projects regarding the following categories are being financed: the integrated prevention and pollution control (IPPC); the limitation of emissions of certain pollutants produced by large combustion installations; promoting the energy production using renewable energy sources; the management of wood waste and sawdust resulting from the lumber cut in forests and orchards and from the wood processing industry; the recycling of used tires; the processing of glass waste for recycling; cremation of waste, including dangerous waste resulted from medical activity; the deposit of waste; the used water treatment; the protection of natural resources; the biodiversity protection and preservation; educating and informing the public of the environment protection.

The Environment Fund was used to finance high priority projects in the field of environmental protection, such as: "Neutralizing and eliminating hazardous waste of acetone cyanohydrin from the storehouse of the former SC METADET SA Falticeni, Suceava"; "Developing the system of collecting used PET packaging waste for recycling" (the project is being continued in 2006) and "The stimulation program for renewal of the National Auto Park" (the program was developed in 2005 and continued in 2006).

- **The programme for increasing the competitiveness of industrial products**

This multi-annual Program was promoted in 2003 and its development was envisaged for the period 2003-2007. The beneficiaries of this financial support are the companies operating in the processing industry.

The project categories that can be financed through this program include projects which address the following:

- the implementation and certification of the quality management systems and/or of the environmental management systems;
- the implementation and certification of health and safety management systems for the working environment, systems for social responsibility and food hygiene management and/or of the information security management systems;
- the certification of products and/or ecolabelling;

- the assimilation of new technologies and products realized by economic operators benefiting from the research results obtained through R&D programmes financed from public funds and the application of the Romanian inventions (protected by OSIM – The State Office for Inventions and Trademarks);
- The organization of exhibitions and stands for the presentation of the industrial products at the economic operators' premises;
- the registration and protection on the external market of the Romanian trademarks, designs and industrial models;
- the endowment and/or modernization of the existing testing and standardizing laboratories, as well as their accreditation, if needed;
- performing comparative evaluation analysis for activities in the processing industry, with a view to realize restructuring-development-feasibility plans.

Until July 2007, over 2750 projects have been submitted for financing as part of the Programme of Increasing Competitiveness of the Industrial products and over 1350 financing contracts have been signed. In July 2007, 355 contracts were ongoing, out of which 101 completed in 2007, 220 to be finalized in 2007, and the rest due for 2008.

This programme will continue in the 2007-2013 period through the Sectoral Operational Program "Increasing Economic Competitiveness".

- **The flexible mechanisms stipulated by the Kyoto Protocol**

According to the principles of the sustainable development, the Kyoto Protocol provides three flexible mechanisms for the achievement of the proposed targets, so that the reduction of the greenhouse gas emissions to be realized with reasonable financial costs. The three flexible mechanisms are the following: Joint Implementation (JI), Clean Development Mechanism (CDM) and the International Emissions Trading (IET), the first two being instruments based on concrete projects, meant to promote the transfer of technologies for reducing the greenhouse gas emissions.

Although the mechanisms specified by the Kyoto Protocol are "voluntary" mechanisms, Romania has been an active part in successfully realizing Joint Implementation investment projects, by cooperating with various states, in order to reduce greenhouse gas emissions, being the most attractive country from this point of view, as mentioned by the Point Carbon Agency.

For the development of Joint Implementation projects, Romania has initiated and continues to develop bilateral cooperations with various states. Ten Memoranda of Understanding have been agreed with various countries (Switzerland, the Netherlands, Norway, Denmark, Austria, Sweden, France, Finland and Italy), as well as with the Prototype Carbon Fund – which is managed by World Bank. The transfer of Emission Reduction Units (ERU) will be made by the Ministry of Environment and Sustainable Development after 2008, only on the basis of the reports monitoring the operated reductions and verified by independent accredited entities.

"Joint Implementation" can primarily represent for Romania modernisation of technology in several priority areas, as follows:

- Increasing the energy efficiency of urban centralized heating systems;
- Replace the fuels in the power plants with "clean" fuels;
- Promoting unconventional energy and the construction of installations producing "clean" energy (hydro-electric power, wind power, solar power, geothermal power, biomass);
- Finalizing hydro-power plants and modernizing hydro-units;
- Avoiding or recovering methane emissions resulting from the storage of urban waste (for reuse purposes);
- Reducing the final energy consumption in buildings, as well as in industrial applications and processes.

Most of the projects approved up until present are being developed at the level of the local authorities, aiming at: modernisation of centralized heating systems (including through the use of renewable energy sources – woodchip, geothermal), closing waste landfills.

- **The GHG Emission Trading Scheme**

The EU 2003/87/CE and 2004/101/EC Directives regarding the the Greenhouse Gas Emission Trading Scheme have been transposed in Romanian law through the *Government Decision no. 780/2006*.

This scheme is not a mechanism specified by the Kyoto protocol, but a tool for reducing greenhouse gas emission, established at the European Union level for supporting the Member States in achieving their CO₂ emission reduction objectives in a cost-effective manner. The scheme establishes a cap and trade system for the industrial installations that perform one or more activities mentioned in Annex 1 of the 87/2003/EC Directive (activities in the energy field, including refineries, the production and processing of ferrous metals, the minerals industry – cement, lime, glass, ceramics, cellulose and paper).

The National Allocation Plan represents the first step in creating the conditions for implementing of the greenhouse gas emission trading scheme, as well as of the system of authorization in the field of greenhouse gas emissions – which includes the monitoring and reporting of these emissions. The National Allocation Plan is the document that establishes the total number of greenhouse gas emission certificates that are allocated at a national and sector level, and at the level of each installation regulated by the Government Decision No. 780/2006. This environment regulation gives the operators the possibility of gaining additional financial sources, depending on the way they manage the level of greenhouse gas emissions at the company level.

All operations with greenhouse gas (GHG) emission certificates, including with greenhouse gas emission units, as specified by the Kyoto Protocol, will be registered in the National Register that will be administered by the Ministry of Environment and Sustainable Development, through the National Agency for Environment Protection. The Greenhouse Gas Emissions National Register is a unique, standardized and secure electronic database, where all the operations with GHG emissions certificates, as stipulated by the Government Decision no. 780/2006, and all the operations with GHG emission units specified by the Kyoto Protocol, as defined by *the Government Decision no. 645/2005 for the approval of the National strategy regarding climate change* are registered and followed upon.

Moreover, the National Register ensures the evidence of the proper accounting of the electronic operations of awarding, ownership, transfer, and annulment of GHG emissions certificates, including the electronic operations with GHG emissions units – as specified by the Kyoto Protocol.

For the information of the interested public, the www.eu-ets.ro website has been created, which presents the most relevant information related to the implementation of the scheme in Romania.

- **Restructuring environment taxes**

A comparative analysis of the quantum of taxes collected for the environment - performed in the Eastern European countries, Western European countries and in Romania - shows that in the Western European countries the tax level is at 3% of the GDP, while in Romania it reaches less than 1% of the GDP.

In 2006, at the National Bank's initiative, the Ministry of Environment and Sustainable Development created a Work Group for analyzing the taxes having an environmental component and for

identifying new taxation areas. This work group was formed of representatives from the Ministry of Environment and Sustainable Development, the Administration of the Environment Fund, the National Agency for Environment Protection, the National Environment Guard, the National Bank of Romania, the National Agency for Mineral Resources. As a result of the group's meetings, the following conclusions have been drawn:

- At present, the environment is an under-taxed source in Romania;
- The consumer taxation has to be considered, as it happens in other countries;
- The level of the environment taxes has to be reconsidered for the following sectors: constructions, mining and fuels, as well as depending on the actions taken by the company for environmental protection (increasing taxes for no measures taken, reducing taxes for taking some measures, even though voluntary – e.g., the application of the relevant CDI results, ISO 14001 certification, etc.);
- Viable taxation areas have to be identified, without affecting the competitiveness of the economic activities.

- **State aid for the introduction of environmental technologies**

The financing of the complex projects from the Environment Fund is realized through state aid schemes, according to the Regulations for Regional State Aid (compliant with the European regulations).

State Aid and regional state aid are granted for supporting some of the projects that are part of the Sectoral Operational Plan and of the Regional Operational Plan, in conformity with the National Regulations that transpose the EU Regulations in these areas.

- **State aid for research and development**

The Programs that are part of the National Research-Development-Innovation Plan act as state aid schemes for research-development, being regulated by the State Aid Regulations for RD.

According to the new Fiscal Code that entered into force on January 1st, 2007, the following **measures for the fiscal stimulation of the RD activities of the economic operators are applied:**

1. tax reduction through the deduction of expenses

- the deduction, at the determination of the taxable income, of the RD expenses (as well as those for the improvement of the management, information systems, the introduction, maintenance and improvement of the quality management systems, certification of compliance with the quality standards, including those for environment protection and resources preservation) (L 571/ 03 – Fiscal Code / art. 21);
- the deduction of 20% of the direct investments with significant impact on the economy (L 571/ 03 – Fiscal Code / art. 38);
- considering as non-taxable revenues, the revenues obtained by the natural persons from the application (by the owner or other representative) or concession of patents (L 571/ 03 – Fiscal Code / art. 48)

2. tax reduction through the amortization of expenses

- Flexible amortization options for tangible and intangible assets - L 571/ 03 – Fiscal Code / art. 24 :
(6) b) in the case of technological equipment – machines, tools, installations, as well as for computers and peripherals, the contributor can choose from the following amortization methods: straight-line, digressive or accelerated;
- (10) Expenses related to the acquisition of patents, copyrights, licenses, trademarks and registered trademarks, and other similar values are recovered by linear amortization deductions on the period of the contract or on the usage period, as the case. The expenses related to the acquisition or production of information programs are recovered through the deductions of linear amortization for a 3 year-period. The digressive or accelerated method can be used in the case patents.

4.6. ECO-PROCUREMENT

The inclusion of environmental considerations in the case of public procurement (eco-procurement) can substantially contribute to sustainable development.

The national legislation regarding public procurement has been amended and completed in order to comply with the EU regulations (Law no. 337/2006 for the approval of Government Ordinance no. 34/2006 regarding the award of public procurement contracts, the contracts for the concession of public works and of the contracts for services). According to the new provisions, the functional performance and requirements that define the technical specifications included in the tender book elaborated by the contracting authority can also include environment specifications. If the contracting authority requires the fulfillment of certain environmental criteria as regards the functional performance, then the authority has the right to fully or partially use specifications defined through European, (multi)national "eco-labels" or any other types of "eco-labels".

Romania participates to the Working Group for Green Public Procurement, established by the European Commission. The Ministry of Environment and Sustainable Development organised and will continue to organise seminars, conferences and information dissemination actions, in order to change the mentality of public institutions and producers regarding the "green" procurement. The presentations given at the TAIEX seminar "Eco-procurement" (Bucharest, 19-20 April 2007) can be downloaded from the webpage http://www.mmediu.ro/dep_mediu/achizitii_publice.htm.

The elaboration of a National Action Plan for Green Public Procurement is envisaged for 2007. A Working group for the elaboration of this action plan has been set up under the coordination of the Ministry of Environment and Sustainable Development.

4.7. INFORMATION, DISSEMINATION, RAISING AWARENESS AND TRAINING

Although there is no national strategy regarding the education and awareness raising in the area of environmental protection, these issues play an important role in the sectoral strategies, representing preventive instruments for environmental protection and for the achievement of socio-economic sustainable development.

In the last 10 years, Romania witnessed a considerable development of higher education in the environmental field, through the establishment of universities with ecological profile and the development of new centres/departments for environmental technologies/eco-innovations within existing higher-education institutions.

The Ministry of Environment and Sustainable Development, as the Management Authority for the Sectoral Operational Program for the environment infrastructure, has issued the following:

- The Plan of Training the personnel involved in the administration of Structural and Economic Cohesion Funds and the personnel from the beneficiaries of these funds; and
- The Communication Plan regarding the opportunities of financing projects using Structural and Economic Cohesion Funds. Moreover, each project financed through EU funds has a component for communication and raising public awareness.

General information actions are organized in order to inform the public on the new national legislation harmonized with the EU regulations, as well as on the methodology for its application.

For instance, currently are being organised information dissemination activities for the general public, with regard to the air quality and to the effects of air pollution on public health. This is done through information panels placed in cityhalls, through external panels placed in central, high

traffic areas from Bucharest and other three urban areas in Romania and through the website <http://www.calitateair.ro>

Meetings of specialists from central, regional and local authorities and of representatives of employers' associations are also organized, with a view to speed up the procedure of integrated authorization of specific installations, according to the calendar negotiated with the economic operators. The goal of these meetings is to clarify the necessary procedures and to elaborate the specific technical documentation for obtaining the integrated authorization.

Other actions are information dissemination, experience exchange, promotion and media promotion of environmental technologies, ecological products and equipment, of the more competitive products, eco-labelling and the conformity of the products

The central public authorities, the environmental institutions and organizations, the non-governmental organizations have posted on their websites information dedicated to the education, training and raising public awareness, on various topics of interest.

Seminars, conferences, debates regarding the impact of the environmental acquis on the technologies and equipments are organized. The intensification of these actions is envisaged for the future. Information related to all these actions will be available on the ETAP-dedicated website that will be developed in the first trimester of 2008. It is expected that in the first phase (2007-2008), these actions will help collect ideas and put into practice actions of ETAP promotion (financing guides, newsletter, forum, interviews, conferences, working groups etc.), in order to subsequently analyse their effectiveness by the Working group responsible for ETAP implementation. This way, the main action areas for promoting the market opportunities in each technological field will be identified, through separate programmes, and the necessary financial instruments for supporting these programmes will also be identified

- **The environmental technologies database**

At the moment, there is no centralized database at a national level regarding the environment technologies, the public central authorities and the environmental institutions and organizations having published on their website information of interest. Thus, it is necessary to integrate all relevant information in a unique source, and to create a user friendly interface. Therefore, the Ministry of Environment and Sustainable Development has as objective the development and management of a bilingual website (Romanian-English) destined to the environmental technologies/eco-innovations. This website will contain:

- General information on the environmental technologies/eco-innovations;
- A list of the webpages where environmental technologies/eco-innovations databases can be accessed;
- A database regarding the partial or final results of the research projects financed by public funds, with various access levels for the users;
- A database regarding the activities performed by the producers and importers of environmental technologies, as well as those responsible for promoting these activities;
- Financing guides for accessing relevant funds by the economic operators, links to all relevant information on financing, available on the web pages of other institutions/organizations;
- Relevant documents (legislation, action plans, position documents, etc, from Romania and the EU);
- Case studies, initiatives, and relevant success projects, from Romania and other Member States;
- News (legal initiatives, exhibitions, program launches, conferences and seminars, etc, linked to the other relevant sections of the webpage).

In order to stimulate the participation of the research institutions and of the economic operators in fairs and exhibitions, the possibility of developing a financial support mechanism for participation will be considered.

An intensive promotion of the ETAP website in the second trimester of 2008, after its launch, is also considered. Until the launch of this website, a separate ETAP page will be created on the Ministry of Environment and Sustainable Development website, that will function after the ETAP website launch also (deadline for creating this webpage – September 2007).

4.8. GLOBAL PROMOTION OF ENVIRONMENTAL TECHNOLOGIES

Research institutes in Romania participate in international, bilateral and regional programmes, thus contributing to the strengthening and extension of the European Research Area in the field.

For instance, here are some main projects of the National Institute of Research and Development Marina Constanta having as objectives the strengthening of cooperation in the Black Sea area, the improvement of the scientific information management by using the latest techniques in the field, the promotion of the European contribution to the global system of ocean and climate observation, the improvement of the forecast capacity and the elaboration of transnational plans as part of the ICZM (Integrated Coastal Zone Management):

- CE/PC 6: Supporting Programme for Capacity Building in the Black Sea Region towards Operational Status of Oceanographic Services (ASCABOS);
- CE/PC 6: Black Sea Scientific Network (SCENE);
- CE/PC6: Pan-European infrastructure for Ocean & Marine Data Management (SEADATANET);
- CE / CADSES INTERREG III B: Spatial planning in ICZM (PLANCOAST).

5. MONITORING AND REPORTING

The monitoring and evaluation of the Action Plan for Environmental Technologies will be performed on an annual basis by the Working group for ETAP implementation (August-September). On the basis of the evaluations of the National Workgroup, the Roadmap will be revised and the priorities for the following period will be established.

An ex-post evaluation of the ETAP implementation in Romania is programmed for the end of 2009, and will be performed by an independent organization. Following the evaluation recommendations, the ETAP Roadmap for Romania for 2010-2013 will be elaborated.

6. SETTING MEDIUM TERM PRIORITIES (2007 - 2009)

- The analysis of the current situation (integrating data on research, on one hand, and on the market state for environmental technologies, on the other hand, in two comprehensive sources, so that it can be easily accessible to the interested parties). On the basis of this analysis, the priority actions for the next period (2007-2013) will be identified;
- The information of economic operators with respect to the business opportunity represented by the environmental technologies (seminars, information on relevant events, etc.);
- Developing economic and financial instruments for supporting the market for environmental technologies.

ANNEX – List of implementation actions 2007 - 2009

Goal / Activity	Assigned to	Indicators	Deadline
RESEARCH DEVELOPMENT			
1. Stimulate of the cooperation between research and industry (RD projects in partnerships, integrated technological clusters / platforms) and company research, realised in cooperation with the RD units, oriented to the development and application of the environmental technologies and eco-innovations, through creation of integrated technological platforms / clusters	NASR, MESD, MDPWH, MEF, CCIB NASR	1. No./Total no. of projects 2. Value/Total value of research projects 3. Effects/project (number of workplaces created, number of partnership contracts)	permanently 2008
2. Develop a common database, which includes the results of the RD activity, concerning environmental technologies that can be rapidly applied with minimal costs, in order to resolve the acute issues of the economic operators.	MESD	Permanently updated database	December 1st, 2008 – the first inventory June 1, 2008 – the launch of the database
3. Sustain and develop the infrastructure for innovation and technological transfer, especially at regional level, in order to create departments and services specialized in environmental technology's delivery and transfer	NASR (using Infratech management), CCIR, CCIB	1. No. Of common projects / total no. Of projects 2.No. of implemented results 3. Generated economic benefits (e.g. number of workplaces, no. Of contracts or partnerships)	
4. Ensure at least one functional and certificated technological transfer center per region	Territorial chambers of Commerce and Industry		
5. Create departments and institutes, with staff trained for technology transfer	National Research Institutes		
VERIFICATION OF ENVIRONMENTAL TECHNOLOGIES			
1. Create a guide for the improvement of the energy efficiency of the existing buildings	MDPWH, MESD		

2. Create national guides regarding best practice reference documents (BREF)	MESD		
3. Adopt the „passive house” strategy for energy efficient buildings (<i>intelligent buildings</i>)	MDPWH, RAEC (ARCE)		
ENVIRONMENTAL MANAGEMENT SYSTEM			
1. Support for the implementation and certification of the environmental management systems	MESD, MEF		
2. Promote the eco-label – activities in the „Ecolabel” Roadmap	MESD		
MOBILIZATION OF FUNDING SOURCES			
1. Find incentive possibilities, in order to support the development and the application of the environmental technologies	MESD, EFA, MEF	No. of identified possibilities	December 1st, 2007
2. Promote Environmental Fund finance	MESD, EFA	Common actions of MESD and EFA – informative materials, participations at events related to the promotion of the environmental technologies, EF section on ETAP site, at „Financial Instruments” section, linked to EFA's site	permanently
MARKET INSTRUMENTS			
1. Support the investments in industry and construction in order to increase energy efficiency	MEF, MDPWH, RAEC		
2. Publicize the energy production using renewable energy sources (aeolian, hydroenergetical, solar, biomass and geothermal resources)	MEF, MESD, RAEC, MARD		

ECO-ACQUISITIONS			
Create the National Action Plan for „green” public acquisitions	MESD		March 2008
INFORMATION, DISSEMINATION, RAISING AWARENESS AND TRAINING			
1. Create an ETAP page on MESD site	MESD		September 1st, 2007
2. Develop an ETAP website:	MESD		Site’s launch - March 2008
Create a database of the economic agents involved in the environmental technologies development and application, organised by activity area	MESD, CCIB, CCIR		December 1st 2007 (first inventory) June 1st, 2008 (finalize „Environmental Technologies Market” database)
3. Create a connection with the European Environment Agency’s website, for rapidly upload the data in the <i>Environmental Technologies Atlas</i>	MESD		June 1st, 2008
4. STAP seminary, adressed to the economic operator withactivities in this area	MESD, CCIB, CCIR		September - October 2007
5. TAIEX seminars	MESD		First quarter of 2008
6. Create a finance guide concerning the environmental technologies for the economic operators:	MESD, ETAP workgroup		Guide’s launch – September 1st, 2008
a. Proposal of a guide’s structure (areas e.g research, promotion, appliance – each including more technological subtopics)			Discussion in ETAP workgroup – October 1st, 2007
b. Main finance sources (international, European and national programmes)			permanently
principalele surse de finanțare	MESD, CCIB, CCIR		permanently
	MESD, CCIB, CCIR		Finalize Participation Plan for 2008 until December 1st, 2007 (annually repeated)

7. Publicity for fairs and expositions			
8. Organize economic sessions and experience exchanges	MESD, CCIB, CCIR, MEF		
<p>9. Support the participation of the economic operators at fairs and expositions related to environmental technologies</p> <p>Analyse the possibility of introducing environmental technologies as optional educational curriculum in the related universities</p>	MERY		
ACTING GLOBALLY			
<p>Identify the potential partners in third party states and methods to enter the markets</p> <p>- create the action plan for 2009-2011</p>	MESD, CCIB, CCIR, MEF		2nd quarter of 2008