GOVERNMENT OF THE REPUBLIC OF HUNGARY

ENVIRONMENT AND ENERGY OPERATIONAL PROGRAMME

2007-2013

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EXECUTIVE SUMMARY

The Environment and Energy Operational Programme (EEOP) is one of the operational programmes intended to serve the overall objective, horizontal policies and the six thematic and territorial priorities of the New Hungary Development Plan (NHDP) – the National Strategic Reference Framework (NSRF) in EU terminology - applicable to the European Union's budget projection period between 2007 and 2013.
The successful implementation of the New Hungary Development Plan is inconceivable without strengthening environment protection.
The fundamental objective of the Environment and Energy Operational Programme is to promote sustainable development in Hungary.

EEOP is based on the following strategic considerations:

- Strengthening environment protection – finding solutions for the different environmental, nature conservation and water problems promotes, both in the short and long term, the improvement of life quality through the related measures.
- Development of the environmental infrastructure with attention to the aspects of sustainability creates favourable conditions for the restructuring of the economy and enables us to create regional cohesion.
- A more efficient and economical use of our natural resources will help us to progress towards sustainable development and improve our country's competitiveness.
- Appropriate special arrangement of the above will enhance the protection and development of the cultural and natural heritage of the regions, the deprived areas in particular, and provides them an opportunity to take a more intensive share in their economic development.

The developments to be implemented through the Environment and Energy Operational Programme will create a foundation for and enhance the strengthening of Hungary's economic competitiveness and improve the welfare of the society. Linked to these developments the performance of a number of production and service sectors can be further improved and employment can be increased.
The protection and cautious development of the environmental and natural systems surrounding us is a fundamental prerequisite to improving human life quality and at the same time it is a factor determining sustainable economic and social development.

The developments identified in the Environment and Energy Operational Programme are intended to mitigate our country's environmental problems, thus improving the quality of life of our society and promoting the adaptation of the economy to the environmental processes.

The following table summarizes the objectives and indicators of the OP.

Specific objective	Indicator
Creation and maintenance of an environment suitable for living in	Total population [number of inhabitants] of settlements with adequate environmental infrastructure (sources: HCSO) Settlement with adequate environmental infrastructure means that all three following conditions are fulfilled: a) the proportion of households involved in proper waste collection system is at least 80% b) the proportion of households having wastewater collection systems is at least 80% (in case the settlement is in an agglomeration with more than 2000 PE), c) proportion of households having adequate quality[1] drinking water supply is 100%.
Protection and conservation of our assets	a) Proportion of population having sufficient protection against flood damages compared to the number of those affected, in % b) Proportion of surface water bodies in good ecological condition and underground water bodies in good condition, in % c) The aggregate changes of the nature conservation status of habitats and species enlisted in the annexes of the habitat protection directive
Prevention, economy, efficiency	a) Proportion of electricity from renewable resources compared to total electricity consumption (%) b) Energy intensity (energy consumption per unit of GDP), kgoe/1000 Euro

EEOP supports the implementation of the objectives stated in the Lisbon and the Goteborg strategies. Three of the ten microeconomic objectives in the Integrated Guidelines transforming the reformulated Lisbon Strategy into structural objectives are directly supported by the European Union, while another four (including sustainable resource consumption) and an employment objective are supported indirectly. Furthermore, among horizontal objectives, emphasis is placed on increasing energy efficiency and reducing the (employment) backlog of the most deprived regions.

Developments

15% national co- financing inclusive (at current price)

Priority	Amount of aid, in €	Percentage, %
1. Healthy, clean settlements 1.1 Waste management 1.2 Wastewater treatment 1.3 Improvement of drinking water quality	**2 608 905 388**	**53,06**
2. Proper treatment of our living waters 2.1 Formation of good flood protection practices 2.2 Complex river catchment development 2.3 Recultivation of municipal solid waste landfills 2.4 Remediation of polluted areas 2.5 River basin management plans	**1 410 975 176**	**28,70**
3. Wise management of natural assets 3.1 Restoration, preservation and development of protected natural assets and areas 3.2 Creation of the infrastructure basis for habitat-conserving agriculture and forestry (investments) 3.3 Development of the forest school network	**135 281 907**	**2,75**
4. Increase of the use of renewable energy sources	**253 074 312**	**5,15**

[1] According to the Government Decree 201/2001 (X. 25.) on the prerequisites and method of control of the drinking water quality

Priority	Amount of aid, in €	Percentage, %
5. Efficient energy use	**154 371 500**	**3,14**
6. Sustainable lifestyle and consumption patterns 6.1 Promotion of sustainable consumption 6.2 Developments targeting e-environmental protection	**77 562 765**	**1,58**
7. Project preparation	**197 143 221**	**4,01**
8. Financing the management of the Operational Programme (technical assistance)	**78 975 544**	**1,61**
Total:	**4 916 289 813**	**100**

Priority axes Healthy, clean settlements; Proper treatment of our living waters and Efficient energy use are supported from the Cohesion Fund, thus the whole country is eligible for support. Priority axes Wise management of natural assets; Increase of the use of renewable energy sources and Sustainable lifestyle and consumption patterns are supported by the European Regional Development Fund, thus eligible areas are convergence NUTS II regions (Western Transdanubia, Central Transdanubia, Southern Transdanubia, Northern Hungary, Northern Great Plain, and Southern Great Plain).

Partnership

The division of the sources between the Environmental and Energy Operational Programme strategy and the different areas was finalised in line with the partnership coordination conducted in accordance with EU regulations.

1. SITUATION ANALYSIS

The aim of the developments identified in the Environment and Energy Operational Programme (EEOP) is to reduce the environmental problems of our country, and through this, to improve the quality of life of our society and assist the adaptation of the economy to the environmental processes.

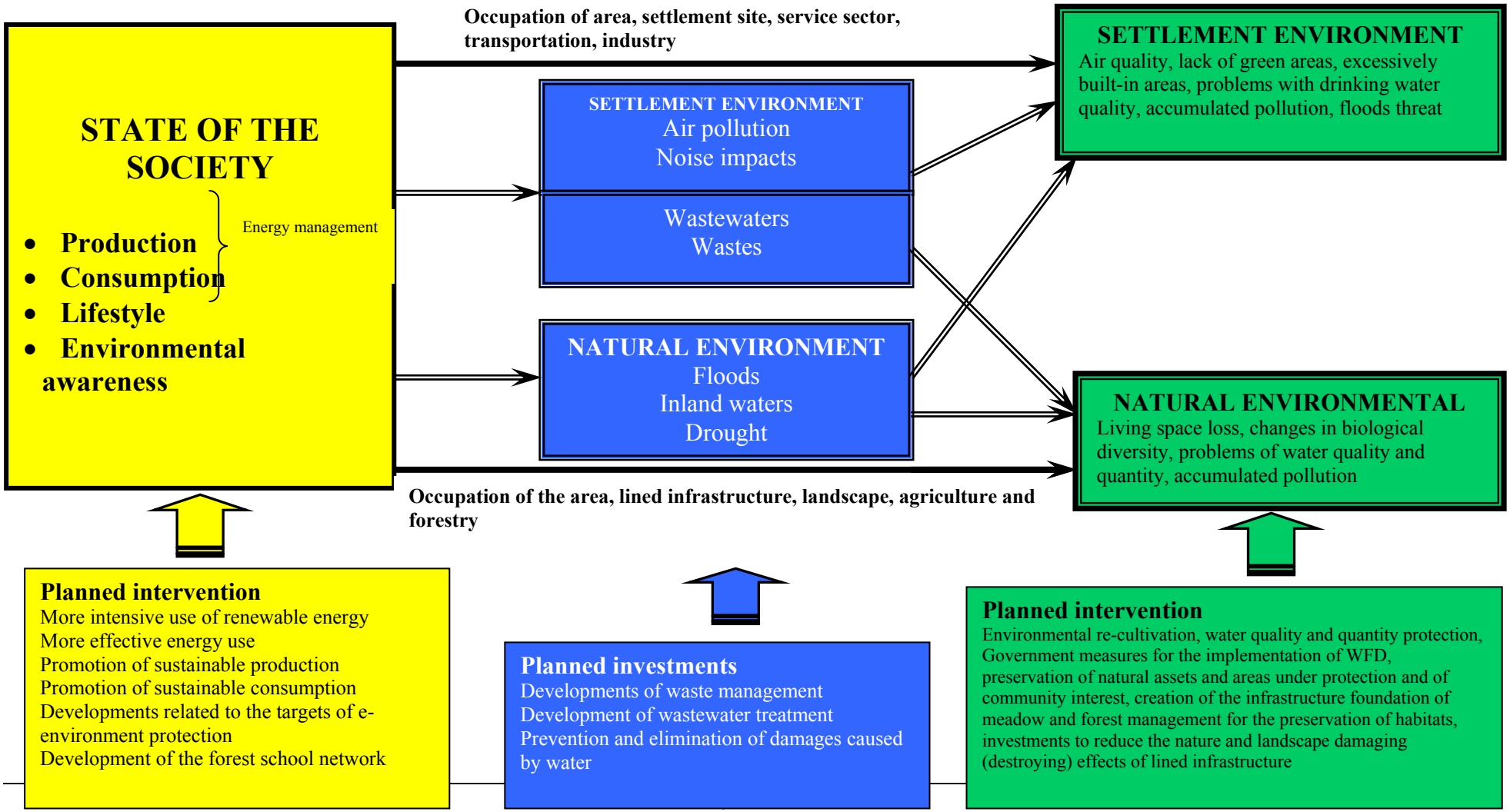
Our environmental problems stem from social, economic and nature related reasons. EEOP's situation analysis reveals the **causes of the environmental problems,** the **active components** of the causes and presents the evolved **state of environment**. Efficient, preventive interventions have to be identified on the level of causes in the first place, but at the same time the proper treatment of the active components is also necessary to a certain extent.
The interventions aiming at the maintenance of a favourable environmental state are also significant tools of the transition to preventive environment protection.

The EEOP programme contains the necessary medium-term development projects, therefore the task for the situation report is to identify the problems that are most pressing in the medium-term. In addition to EEOP, other sectoral Operational Programmes also contain developments that are meant to treat the problems explored by the situation analysis (for example the Economic Development, and the Transport Operational Programme), and certain environmental developments are treated on regional level through the Regional Operational Programmes.

The problems having priority treatment in EEOP are shown in the textbox.

Table 1: Perception of the environmental problems and structure of intervention in the Environment and Energy Operational Programme

PRIMARY CAUSES	IMPACT FACTORS Sources of impacts	STATE OF ENVIRONMENT Impacted areas



1.1 Recent social, economic processes as the primary causes of the change in the state of environment

In the last decade and a half, socio-economic transformations have significantly altered the nature and magnitude of the impacts on the environment. The state of the environment is generally improving, but new problems are presenting a burden.

Hungary is lagging behind the more developed EU countries in the area of health, standard of living and economic performance, but thanks to these last two for the most part, certain sustainable development indicators (e.g., the ecological footprint[2]) are still more favourable in our country. The present 2.2 global hectares per person reasonable guaranty for quality of life in the Union is being exceeded by a factor of 2.4 (4.8 ha being used)[3]. In Hungary, the aggregate ecological footprint is 3.5 hectares per person. **This means that the development path currently being followed by the more developed countries is not sustainable. Changes are needed.**

The legal and economic regulation system, which is supposed to improve the decisions affecting the environment, was not able to ensure that the developments would not cause further environmental pollution. The efforts of the citizens, and even of the environmental authorities to save the environment often stand against the lobbies enforcing direct economic interests. The frequently advocated perception that environment protection is the barrier to modernization is also hindering the available legal and economic tools in the effective protection of the environment. By leaning on the experiences of market economies with a longer history and the position of the Lisbon Strategy, a most important objective of Hungarian environmental policy is to emphasize, among the economic actors, the **effects of environment protection that enhance competitiveness**.

Production

After the change of the political system, the unexpected and acute competition had negative impacts both on human health and social cohesion. The steps we have taken so far to increase competitiveness and employment have increased unwanted territorial imbalances. The losing parties of the competition are exactly those small and medium size companies and agricultural small producers who were often using old technologies based on the harmony between man and nature, and thus could have been the depositories of sustainable development. This would require that the values of sustainability are generally appreciated, a market favouring sustainable goods and services, and the promotion of matching conventional sustainable technologies and modern methods of business in order to ensure sustainable development.

Due to growth, the number of rapidly built in areas increased at the expense of open spaces, even though there were large numbers of abandoned industrial areas available. Due to large-scale motorway developments large coherent natural areas have become fragmented. Typical of structural land use changes is that between 1999 and 2004, the productive agricultural areas diminished by 300,000 hectares, from a proportion of 86.1% to 83.1% of the territory (reduction 3.3%) (Central Statistic Office, HCSO). The fields, allowed to be withdrawn from the agricultural system on a permanent basis are being typically re-used as lands included in

[2] Ecological footprint is a value used in resource management and social planning, showing how much water and land is needed for a human society at a certain development level to cover their needs and to dispose waste

[3] Living Planet Report 2006

residential areas, lands for road construction (at a rate of about 40%) and also lands for industrial activities and mining (a total of 22%).

Agriculture has mixed operation structures: half of the agricultural land is being cultivated by farms using intensive technology. The food industry, which is separate from raw material production, consists of concentrated companies for the most part. Our soils and surface waters are endangered, but they are generally less polluted than in other EU countries. The soil for agricultural production can be said to be good, the conditions are satisfactory for multi-function agricultural activities, and our farmers still own a traditional knowledge of extensive agricultural practices. The areas of fields used for bio-farming are growing steadily, but they are still relatively small areas. Hungary's natural values and food safety are being endangered by the spread of international products made of genetically modified plants and animals.

Due to the environmental requirements necessitating a lot of development**, the environment protection industry** is growing much faster than the average rate of growth.

A) In the field of **material use,** eco-efficient solutions, raw material substitution and different forms of waste recycling and reuse are slowly getting to the forefront. At the same time the consumption of short life cycle products, large quantities of packaging products, and not re-usable and/or non-degradable materials increased further.

Regarding **environmentally friendly products**, 355 products of 33 companies in Hungary have national product labels (eco labels). Only one active company (hotel) has the European Union eco-label.

B) Presently, the environmentally friendly product label is not very prestigious or well known; the producers' special product labels are not well known and are often misleading. The spread of positive market incentives of environmental interest and feedback is being seriously hindered by the relatively low environmental awareness and low average income of the population. **Therefore, there are few products of this type on the market**. The sphere of green public procurement could also be increased by having more products and services on the market with environmentally friendly labels and certificates.

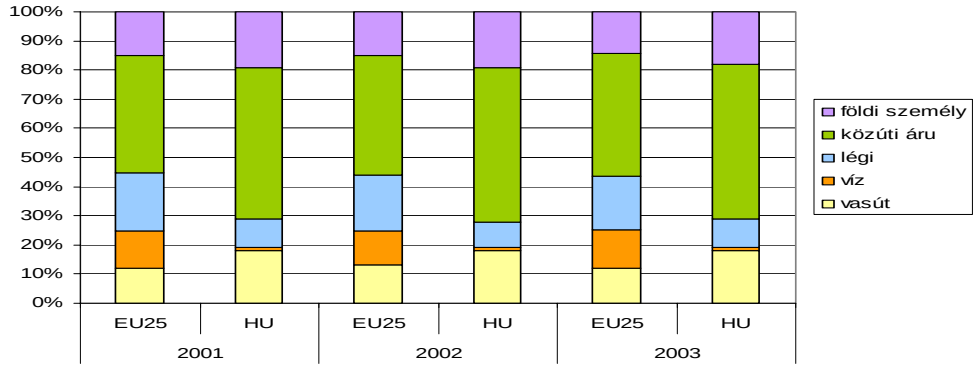
Transport, Shipping

Until recently, improved physical accessibility has come along with negative changes in terms of environment and health protection. In the last 15 years, public road transport has become the most problematic sector from the point of view of air quality and protection against noise. Parallel to the decrease of industrial emissions, emissions from public road transport have increased. Since 2000, the number of personal vehicles has grown by 463,000, the number of trucks by 35,000 and by 2004 the total number of vehicles grew to 3,192,000.

Transport on public roads accounts for more than 60% of the total transport. This is still less than the EU average (>70%), but we are still not using our railways and shipping by water capacities to their fullest. The profit to our national economy coming from the increase of public road transportation is still not in proportion to the environmental damage that it causes. The inhabitants do not have enough information about the environmental impacts of the transportation methods. Partly this is the reason why the energy consumption of personal and goods transport has increased, and personal transport is gaining ground over public transport,

and public road transport is preferred to railway transport. The distance between home, work, school and shops, as well as recreational destinations is continuously increasing.

Figure 2: division of transport (personal cars, goods transport by public road, air, water, rail)



(Yellow – railway, orange – water, blue – air, green – goods transport by public road, purple – personal cars)

Consumption, commerce

C) Sustainable consumption behaviour patterns are hardly spread. Consumption patterns are usually in contrast with the principles of sustainability.

The primary drivers of consumer society are the production and consumption of short life cycle, mass products of immediate consumption. The number of hyper- and super markets is growing and the consumption of cheap and often low quality products offered by them is growing significantly.

Surveys show that half of the population clearly knows that consumption has negative environmental impacts, but three quarters believe that technological development is needed to find a solution. People are not willing to change their present way of life, even though they acknowledge that their present life style patterns are not sustainable.

The concept that society has of sustainability is not an integrated one: classical environmental problems appear as separate from social and economic problems. The survey ordered by the *Hungarian Business Council for Sustainable Development* shows that only 3% of the population has a clear understanding of the idea of sustainability.

The production, consumption and service provision interrelation between cities and their surroundings is disintegrating because of the appearance of global trade. Cities are increasingly being supplied by global products from multi-national companies. The „economic centre" is not buying products from its zone of gravity because they are not competitive with global products. Even the zone of gravity is buying „cheap" products from the centre. Thus the countryside's ability to support itself is being eroded.

The low level of knowledge according to sustainability and environmental protection may be in connection with the inadequate environmental democracy (access to environmental information, emergence of participation in environmental decisions).

By the approval of the 2003/4/EC guideline, by the modification of the 53/1995 law on general rules of environmental protection at the end of 2005, by the 140/2004 law on the general rules of administrative action and service furthermore by the 40/2005 law on the free flow of electronic information, legal requirements of the Aarhus Agreement will be fulfilled, so that the legal conditions of environmental democracy might be considered appropriate.

The lack of information, infrastructural limits of access to environmental information that is basically the lack of education on participation in decisions set back the exercise of democratic rights. Although the uniformed homepages of national parks and environmental authorities were developed and also the homepage of the Ministry of Environment and Water was highly developed, furthermore the testing of OKIR WEB (National Environmental Information System) loading all environmental data on internet has begun, the lack of infrastructure and proactive information-service causes the disadvantage of education on participation in decision-making processes.

Energy Management

Energy production, consumption and energy import dependency

Since the beginning of the 1990's energy production in Hungary has been continuously decreasing while energy import has been increasing significantly (proportion of the latter in 2006 was 76.6% compared to total national consumption).

In energy consumption, the role of private, industrial, communal and transport related consumers play a major role; the increase in consumption is continuous.

Table 1: National energy production and consumption (PJ)

	1993	2001	2002	2003	2004	2005	*2006 forecast*
I. PRODUCTION	552,9	448,7	457,5	434,7	429,9	428	*430,1*
II. IMPORT	597,9	682,9	714,3	786,5	784,7	873,6	*885*
III. TOTAL SOURCES	1150,8	1131,6	1171,8	1221,2	1209,6	1301,5	*1315,1*
IV. DOMESTIC CONSUMPTION	1058,3	1069,4	1058,6	1091,6	1088,1	1153,2	*1155,0*

Table 2: Electricity production and consumption (TWh)

	1993	2001	2002	2003	2004	2005	2006
I. PRODUCTION	28,05	36,42	36,16	34,15	33,71	35,75	35,78
II.EXPORT- IMPORT balance	7,21	3,17	4,26	6,94	7,47	6,22	7,21
III. UTILISATION OF SOURCES TOTAL	35,26	39,59	40,42	41,09	41,18	41,97	42,99

Utilisation of renewable energy sources

In spite of the positive trends in the improvement of energy efficiency and the utilisation of the renewable energy sources there are considerable reserves available in both fields.

In 2006, the electricity produced from renewable energy sources was 1487 GWh; including waste incineration it was 1654 GWh. This is a remarkable decrease compared to the previous

year, when 1823 GWh, and 1941 GWh (with waste incineration) green electricity was produced. The set-back was caused by the decrease of electricity produced from firewood, which justifies the necessity of an energy programme in the agricultural sector.

In 2006, the consumption of electricity produced from renewable sources was 3.6% of the national electricity production; including waste incineration it was 3.9%. In 2004, green electricity production was only 965 GWh, so despite of the set-back in 2006 there has been a significant improvement, which is predominantly due to the shift to the use of firewood in formerly charcoal power plants. Solely firewood is used now in Pécs Power Plant, Ajka Power Plant and Kazincbarcika Power Plant, and a mixture of non-renewable and renewable sources are used in Tiszapalkonya Power Plant and Mátra Power Plant.

The aggregated utilisation of renewable energy sources was considerably improved by the fact that the heat equivalent of renewable energy based electricity production has been increasing dynamically as described above (2003: 1 PJ; 2006: 12 PJ). The 3.5 % renewable energy share of total energy consumption in 2003 increased to 4.4% by 2006. In the renewable energy source strategy, currently under elaboration, the Ministry of Economy and Transport (MoET) wishes to set higher goals - which take into account the national characteristics - than the relevant EU standards, and have them adopted by the government.

Table 3: Electricity production from renewable energy sources

	Electricity production from renewable energy sources (GWh)					
	2001	**2002**	**2003**	**2004**	**2005**	**2006***
Firewood	7	6	109	678	1 566	1 208
Biomass from other sources	-	-	-	-	19,6	20
Biogas	7,6	11,2	18,37	22	25	30
Hydropower	186	194	171	205,5	202	186
Wind power	0,9	1,2	3,6	5,6	10,1	43
Photovoltaic solar energy	0,06	0,06	0,07	0,1	0,1	0,1
TOTAL	**202**	**212**	**302**	**911**	**1 823**	**1 487**
Waste incineration	112	59	67	54	118	167
Total including waste	**314**	**271**	**369**	**965**	**1 941**	**1 654**

**: preliminary data*

Table 4: Total national renewable energy source utilisation

	Heat utilisation (TJ) (including renewable energy sources used for electricity production)					
	2001	**2002**	**2003**	**2004**	**2005**	**2006***
Geothermal	3 600	3 600	3 600	3 600	3 627	3 600
Solar collector	60	70	76	76	81	83
Firewood	13 539	14 592	14 850	14 659	23 539	19 959
Firewood forest residue	4 600	4 550	3 326	2 805	4 936	5 000
Biomass from other sources	12 461	11 602	14 425	16 892	17 000	17 000
Biogas	126	133	191	274	297	356
Hydropower	670	698	616	740	727	670
Wind power	3	4	13	20	36	155
Photovoltaic solar energy	0	0	0	0	0	0
TOTAL	**35 059**	**35 250**	**37 097**	**39 066**	**50 243**	**46 823**
Waste incineration	2 597	1 995	1 507	1 373	2 764	3 693
Total including waste	**37 656**	**37 245**	**38 604**	**40 439**	**53 007**	**50 516**

**: preliminary data*

National energy efficiency compared to international tendencies

Energy intensity/GDP has improved in the past 15 years, however the specific value is still higher than in the EU-15, as well as EU-25.

Hungary's energy intensity indicator - that is, the energy needed to produce one unit of GDP - is 3-3.5 times higher than the EU average. (If the GDP is adjusted with the purchase power the energy intensity is 1.2-1.3 times higher than the EU average.) This indicator, however, depends on the energy consumption per capita and the GDP. The high level of the national energy intensity is due to the low economic efficiency (low GDP production). Energy consumption in Hungary is one of the smallest in the EU; it amounts to approx. half of the EU average, while GDP, measured on purchasing power parity is 62% of the EU average. This favourable value, however, shows the lower potential of the national economy: smaller flats, fewer and smaller cars, underdeveloped transport sector, fewer household appliances and air conditioners, an industrial structure different from that of the EU etc. In order to improve energy efficiency, the primary task is to improve the efficiency of the national economy. Nevertheless, the importance of energy savings must be emphasized.

The predominant part of the reserve in energy efficiency of the national final energy consumption may be reached by domestic consumption. Parallel to this, domestic consumption plays a major role in the increase of electricity consumption. There are significant savings opportunities in the domestic (and in lesser amounts in other communal) energy consumption regarding heating and electricity consumption. House heating amounts to 40-45% of total energy consumption in the EU-15, as well as in Hungary. The average consumption of house heating in Hungary is 0.90 GJ/m2 annually meanwhile this value in EU-15 is 0.53 GJ/m2, and in an "EU efficient" (i.e. compliant to the latest standards) building 0.24 GJ/m2 annually. Thus, the national specific heating energy consumption is 70% higher than the EU-15 average.

Opening of the energy market

The Hungarian electricity market – for the major consumers above 6.5 GWh/y consumption – was opened on 1st January 2003; since then the competitive market and the public utilities market has been operating parallel to each other. Since 1st July 2004 all non-home consumers have been entitled, which (with respect to consumption) is approx. 67% of the electricity market.

The increasing consumption of the free market and the decrease in the public utilities were continuous from the opening of the market till May 2006 with the exception of the recession in the end of 2003 and the beginning of 2004. In 2006, the free market's share was around 35-40% of the net consumption, and its volume nearly reached 13 000 GWh. Total market liberalisation will take place on 1st June 2008 based on the new electricity legislation currently under elaboration.

The opening of the natural gas market occurred one year later on 1st January 2004. Since 1st July 2004 all non-home consumers have been entitled, which (with respect to consumption) is approx. 66% of the natural gas market (~180 000 consumers). The share of the free market – with considerable monthly fluctuation – was 9.6% of the national natural gas consumption. Total market liberalisation will occur on 1st July 2008.

Correlations between the national and EU energy policy

There was no common energy policy in the EU until January 2007, so regulations, green / white books and directives were used to ensure the control of energy use. The official publication of the EU's energy policy objectives is the "energy package" published in January 2007 by the European Commission. The energy package defines three pillars of the common energy policy, which are security of supply, competitiveness and environmental sustainability. The policy focuses on the fight against climate change, the decrease of the EU's dependence on hydrogen-carbonate import, creation of jobs, and the promotion of growth.

A new Hungarian energy policy is now in the final stage of elaboration. It is being elaborated taking into account the national characteristics and the EU's expectations for Member States. The energy policy defines three principles: security of supply, competitiveness and environmental sustainability. The sustainability pillar's main priorities are: increase in the utilisation of renewable energy sources, fight against climate change, energy savings, increasing energy efficiency in the transport sector with a primary focus on the use of fuels produced from renewable energy sources. The objective of the energy policy is to increase the share of renewable energy consumption without decreasing the competitiveness of the economy, taking into consideration the national characteristics and capacity of the country. A Strategy for the increasing of renewable energy source utilisation and a National Energy Efficiency Action Plan promoting energy efficiency are currently being elaborated. The strategy and action plan are expected to be approved by the government by the end of this year. The guidelines of the strategy and the action plan will be integrated into EEOP's two year action plans as well.

1.2 Emissions and factors with a direct impact on the state of the environment

1.2.1 Factors of residential areas/settlements, emissions from human activities

Major towns and the agglomeration of the capital city have become such a concentrated pollution source that they have large polluting effects even outside their area. Although the population is decreasing, the number of households is growing, mainly that of the one-person households which has a negative impact on emissions. This leads to increases in durable goods accompanied by an increased electricity consumption in households.

Wastes

F) The spread of environmentally friendly production and consumption habits could not keep up with the quickly adopted behaviour of market and consumption habits of other EU countries.
The **amount of municipal solid waste generated**, and **parallel with this**, **the amount, which has to be disposed in a landfill keeps growing** in spite of the increasing reuse and recycling rates. The reason for the latter is the lack of **waste reuse and recycling infrastructure**.

Table 5: Regional data of municipal waste management (*2003, ***2004****)*

(source: HCSO, Fundamental data of municipal services 2003*, 2004; HCSO Environmental Statistics Yearbook, 2003)*

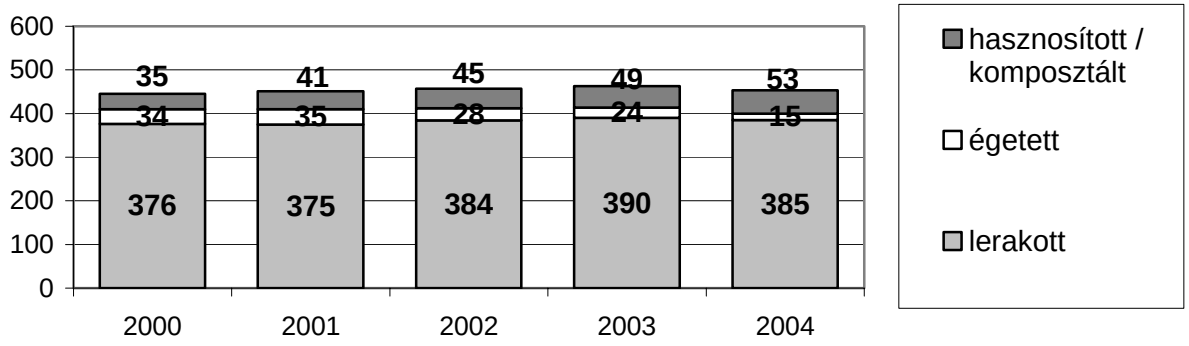
	Central		North HU	North Great Plain	South Great Plain	West Transdanubia	East Transdanubia	South Transdanubia
	Bp.	Pest county						
Proportion of households involved in regular waste collection (%)	95,5 ***95,8***		92,7 ***91,6***	88,1 ***87,4***	85,3 ***84,6***	93,2 ***93,0***	92,7 ***90,7***	95,9 ***95,6***
	99,9 ***99,9***	86,4 ***87,5***						
Regional division of municipal waste collected (%)	29,9		11,9	13,1	12,6	10,3	12,7	9,5
	21,1	8,8						
Treatment of municipal solid wastes (%)	78,47		99,73	95,55	97,26	92,51	95,40	96,72
- deposited in landfill	70,55	97,44						
– incinerated	18,82		-	-	0,02	-	-	0,01
	26,68	-						
– recycled/composted	2,7		0,22	4,01	2,16	5,85	4,60	3,21
	2,76	2,57						
– other	0,01		0,05	0,44	0,56	1,64	-	0,05
	0,01	-						

* With attention to the fact that the waste data included in the chart show only the waste collected in the frame of a public service, the percentage values are not identical with the total waste quantity generated.

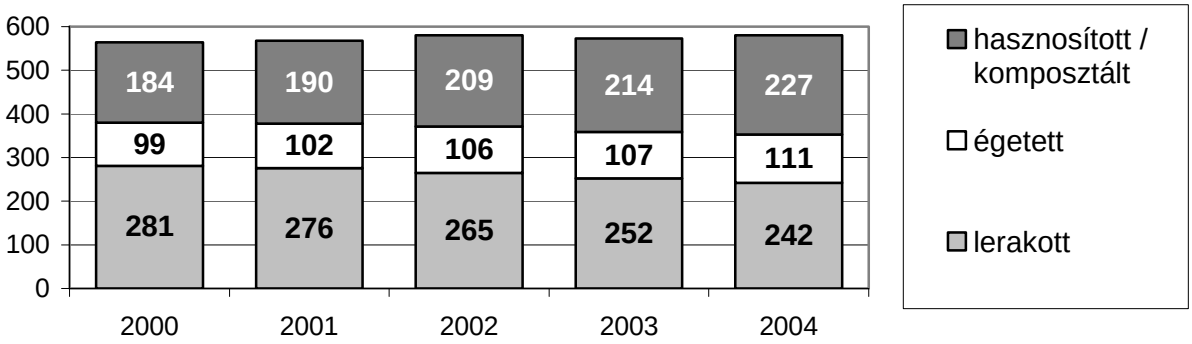
In 2004, about 4,591 million tons of municipal solid waste was generated, of which 84.9% was disposed in landfills (3,896 million tons), 11.7% was used for material recovery (540 million tons) and 3.4% was used for thermal recovery (155 million tons).

The collection system is based on a private collection system parallel with a public utility-based selective collection system. These two systems together collect waste for material recovery purposes. Because of the new regulations, the percentage of the population involved in regular waste collection has been increasing in recent years. In 2004 it was 91%. Only the Southeast and Southwest Hungary regions have lower percentages, while central Hungary has the highest indicator.

Figure 3: Municipal waste treatment, kg/p/yr (source: EUROSTAT)
HUNGARY (Recycled/composted, Incinerated, Land-filled)



EU 15(Recycled/composted, Incinerated, Land-filled)



(dark grey – composted, white – incinerated, grey-landfilled)

G) The problem is that in 2004, only 11.7% (540 thousand tons) of total municipal solid waste was collected selectively. A significant portion of this is packaging waste(60%-or 324 thousand tons), composting waste (30% or 162 thousand tons) and other wastes suitable for material recovery (10% or 54 thousand tons).

Half of the total **packaging waste** comes from industry and wholesale, the other half comes from households. Pursuant to our Act on Waste Management by 2005 we managed to comply with the minimum 50% average re-use and recovery rate, including the minimum 25% material recovery rate. The minimum 15% re-use and recovery rate is complied with also for the individual material types.

Composting of the biologically degradable waste included in the municipal waste is being done in composting plants established as former investments. This compost is difficult to sell, which is causing problems. The quantities that cannot be sold are used by municipalities in their proprietary public purpose facilities and in their landfills.

Recently we have successfully moved ahead on special waste streams with the help of regulation and by applying market tools. **Pharmaceutical waste** is being collected separately by the pharmacies, based on producer responsibility. **Electrical and electronic waste**, including **batteries and rechargeable batteries,** are being collected through systems operating in accordance with the applicable government regulations.

Thanks to the product charge (green tax), used tyres are being collected at expected levels. Due to the applicable prohibition to landfill, the high energy requirement of material recovery,

and the moderate demand for products gained through recovery, used tyres are mostly used by cement factories for energy recovery purposes.

Animal waste (animal by-products), as a special waste category, has to be treated in a special manner. In 2001, there was 400 thousand tons of waste of animal origin: of which about 10% was hazardous waste, 70% was re-used and recovered, 24% went to landfill and 2% was incinerated. *(*National Waste Management Plan*, NWMP, 2002, estimate figures)*

In 2002, there was about 6 million tons of **construction and demolition waste,** of which only 21.8% was re-used and recycled, 76.8% was disposed in landfills and 1.4% was abandoned. *(NWMP, 2002, estimate figures)*

Thanks also to Structural Funds, we are making progress with regard to our national and municipal duties concerning waste streams in the area of treating **medical, animal origin and construction and demolition waste.**

Treatment of **health care waste** was satisfactorily solved because of the timely modernization of hospital incinerating facilities.

Although more difficult than expected, **animal waste** treatment has started with investments into the re-cultivation of carrion pits and animal burial grounds.

Since 2004 a number of micro-region level investments have been started to reach the highest possible level of re-use and recycling of **construction and demolition waste**. Removal of asbestos based insulation has started in the residential and community buildings

Collection of hazardous wastes, including the hazardous components of priority waste streams, is being done in waste yards continuously increasing in number. These yards are suitable for the collection of all waste streams included in the municipal waste and intended to be collected separately.

H) A major problem is that in the past municipal waste management meant simple deposition – it had more than 85% share. Projects in this field focused on creating regional sanitary landfills which fulfil the standards, to replace old, improperly built and ill-handled local landfills. These new landfills were supplied with expensive, technologically intensive waste handling technology (collection, sorting, composting, etc.).

The Phare survey of 2001 shows that of the 2575 **municipal solid waste non-hazardous landfills (dumping sites)**, many have been abandoned or closed and their organised re-cultivation and closure has not taken place yet.

Out of the 2560 landfills to be re-cultivated, 328 will be re-cultivated through the ISPA programme, while the re-cultivation and closure of 2232 landfills is still a task for us.

At present, only one municipal waste incinerator is in operation, with a capacity of 420 thousand tons/year. (Between 2002 and 2005, the Budapest Waste Recovery Plant was operating at reduced capacity due to modernization.)

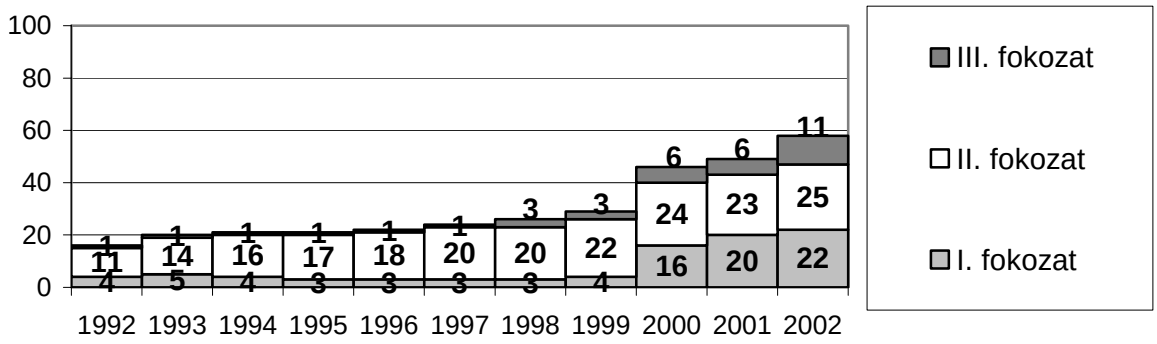
Municipal wastewaters

As a result of the recent developments in the area of the municipal **wastewater collection and treatment system,** the collection network length, as well as the number of towns and households connected to the system have increased dynamically,. Since 2002, the proportion of households connected to the wastewater collection network has increased by 2.5 – 3% per year and reached 62.3% in 2004.

I) The problem is that in Hungary, **the public utility gap** – besides the yearly closing of 2.1-2.7 percentage points **– was still over 30% in 2004**. In 2004 **only 44,3% of the settlements were connected to wastewater collection systems, and of the collected wastewater only 66,5% was biologically treated before** being conducted into the recipient. At the same time, **the utilization rate of the treatment capacity of plants is very low.**

Close to 32% of the previous quantity also goes through level III. cleaning (nutrient removal). At the same time, parallel with sewage collection, alternative wastewater treatment solutions have not widely spread (close to nature wastewater treatment, individual wastewater disposal).

Figure 4: Estimated proportion of inhabitants connected to municipal wastewater treatment level III; level II; level I treatment, in% (source: EUROSTAT)



Although the proportion of households connected to wastewater collection network has risen in every region, still there are significant differences in growth rates and level of supply. At the same time, the proportion of households connected to drinking water supply shows less difference by region, and in general reaches the level of 93.7% for the country as a whole. As a consequence, with regard to the public utility gap (sewer length per 1 km long drinking water supply pipe), the former ranking of the regions remained the same in spite of the regionally differentiated developments. This means that the public utility gap is smallest in Central Hungary and the widest in the South Great Plain region.

Table 6: Municipal drinking water supply, sewage collection and treatment (2003, 2004)
(source: HCSO, Key data of municipal supply 2004)

Indicator	Country level	central		North HU	North Great Plain	South Great Plain	West Transdanubia	East Transdanubia	South Transdanubia
		Bp.	Pest county.						
Households connected to drinking water supply (%)	93,2 *93,7*	95,9 *96,3*		87,8 *88,2*	92,7 *93,3*	88,0 *88,6*	95,3 *95,2*	96,6 *96,7*	94,7 *95,9*
		98,3 *98,5*	90,9 *91,8*						
Households connected to sewage collection network (%)	59,1 *62,2*	78,8 *81,0*		49,6 *54,1*	42,0 *44,8*	38,6 *41,4*	63,2 *65,8*	65,0 *69,2*	54,3 *58,5*
		94,1 *95,0*	47,4 *52,5*						
Public utility gap (m) sewer length (m)/drinking water supply pipe (km) without connections	521,7 *550,8*	776,9 *797,0*		518,1 *541,9*	458,5 *493,0*	321,9 *356,5*	599,9 *601,3*	536,0 *576,1*	366,2 *411,7*
		1016,8 *1044,9*	638,5 *656,0*						

Air pollution

The most serious environmental problem in the inner areas of settlements is the significant **burden caused by traffic** (air and noise pollution). It is not possible to keep the limit values in the internal areas of major cities.

High amounts of **dust and pollen pollution and invasive and aggressive spread of species** as well as air pollution caused by traffic are increasingly causing allergies in humans. 20% of the population is affected, and the numbers keep increasing. The actions taken so far have not been able to solve the problem.

Besides transport, **one of the biggest polluters is the power plant sector**. In Hungary, the thermal power plants are responsible for more than 30% of carbon dioxide emissions, about 68% of sulphur emissions, 16% of nitrogen dioxide emissions and 10% of particulate matter. 8% of hazardous waste comes from the power and thermal plant sector[4]. Presently, 61% of the electricity production comes from fossil fuels, and 39% from nuclear energy.

Greenhouse gas emissions have remained constant. We expect to remain significantly under our promised Kyoto protocol emission targets.

[4] MoEW: Data on state of the environment in Hungary, 2004

Table 7: Greenhouse gas emissions index and Kyoto protocol target figures (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	**2008-2012**
EU25	91,9	91,9	92,1	94,1	92,7	92,2	90,6	90,5	91,4	90,7	92,0	
EU15	96,1	96,1	97,1	99,0	97,6	97,8	96,2	96,4	97,5	97,0	98,3	**92,0**
HU	**69,5**	**69,5**	**68,3**	**70,3**	**68,7**	**68,8**	**68,5**	**66,3**	**68,5**	**66,1**	**68,1**	**94,0**

1.2.2 Natural factors

In Hungary there are two factors that determine sustainable water management: **the continental climate**, and the **basin effect**. Both bring about extreme conditions. Water protection is especially significant because of the probable negative effects of **climate change**. In the 19th and the 20th centuries climate change and human activities (deforestation, water regulation etc.) have caused the destabilization of water balance. Besides inland water and flooding problems, this has also caused droughts in large areas. Based on the „drought index"[5], in the past 15 years 1990, 1992, 1993, 1994, 2000 and 2001 were extremely droughty years. It should also be mentioned that during the year 2002 Danube River floods, there was extremely high water scarcity in the Great Plain and in the area of the Rába River, and the water shortage was even worse in 2003. The Carpathian basin water situation is determined by the alternation of dry and rainy years, the significant seasonal variation in precipitation and the surrounding mountain run-off that sometimes accumulates over months and causes floods.

Over 50% of Hungary is flat land. The area threatened by floods covers 21,088 km2, which is 23% of the territory of our country. The **areas threatened by floods and inland waters** cover almost 50% of the country, and are mainly situated close to the rivers, the lower parts of the Great Plain and the Little Plain, the edges of the North-Central mountains, the Transdanubian hills and the slopes of West Hungary.

J) Distribution of precipitation in the last century was characterised by large territorial and temporal variations. In this period the weather was 51% dry or extremely dry, 32% wet and only 17% favourable. This means that **for our agriculture in the last 100 years only 17 years were favourable**. Therefore large parts of Hungary are caught between abundance and shortage of water.

In the last 57 years, there were only 3 years when we did not have to fight against inland waters (1973, 1976 and 1990).

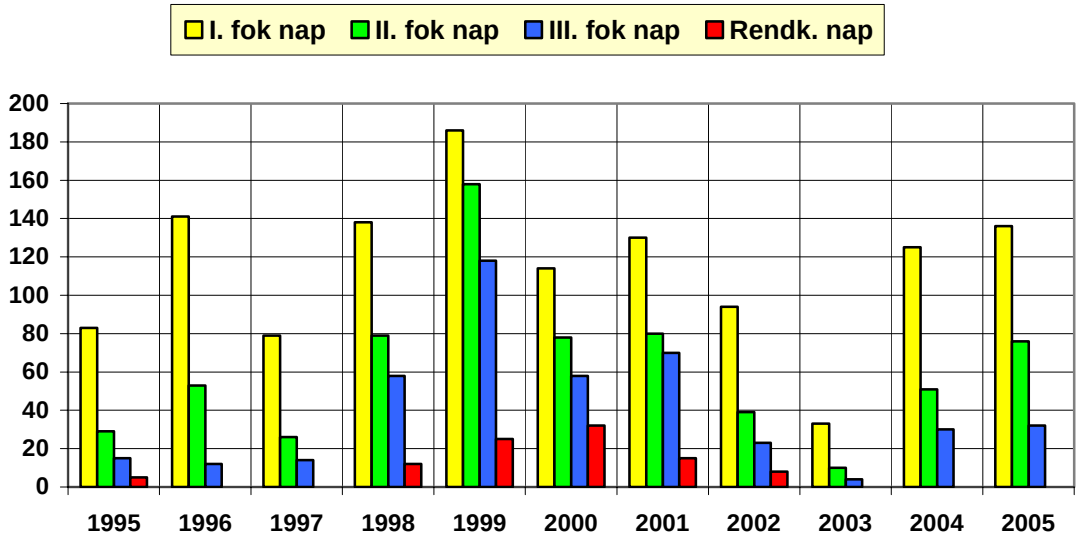
The most significant **flood waves** remain for 5 to 10 days in the upper sections of our rivers on Hungarian territory, while on the lower sections of low gradients they can remain for up to 50 to 120 days. Other European rivers do not have such long lasting floods. The upper sections of our rivers have rapid flow rates: after fast melting of snow or a lot of precipitation floods appear in one or two days, causing floods of several meters' height. In that respect, a threat is posed especially by North Tisza and its tributaries, and the Kőrös Rivers, where

[5] The „drought index" gives in one number all precipitation and all evaporation and the changing plant water needs. This number is generally 6 to 8 for a small-scale drought, 8 to 10 for medium droughts, and 10 to 12 for extensive droughts. If the drought index is over 12, this means extreme drought.

within 24 to 36 hours following precipitation, water levels can rise by 8 to 10 meters at our national borders.

K) The significant size and frequency of the floods between 1998 and 2001 called for action. This period followed a ten year dry period, extreme floods arrived one after the other, and in a number of places we had to re-write record levels yearly. **Between November 1998 and March 2001, within only 28 months, there were four extraordinary floods in the Tisza Valley causing inland waters and series of extraordinary floods in the small watercourses.**

Figure 5: Days spent fighting floods 1995-2005(levels 1,2,3 and extraordinary level in red))



Present land and water use is one-sided disregarding the mosaic conditions**, and does not fulfil the roles necessary for the operation of landscape and society.** Meadows, wetlands and forests are being used as agricultural fields, and when grazing animals are selected, their ability to withstand drought is not considered. This creates economic losses in the agricultural sector and too much work against floods and inland waters, continuously reducing strategic water supplies, agricultural and ecological potential.

1.3 The state of the environment

1.3.1 Quality of life of settlements

Densely populated cities and agglomerations do not have good environmental state and environmental health conditions, they have in particular air and noise pollution and environmental conflicts regarding land use. The region of Central Hungary, because of Budapest's agglomeration, is the most polluted area and from the environmental and regional development point of view it is the most difficult to treat. In **major towns**, most of the **environmental regulations** used in general **cannot be observed** even if they are often reiterated by limit values stipulated in rules of law. It is sufficient to think of air quality, noise pollution, and the issue of the necessary green spaces.

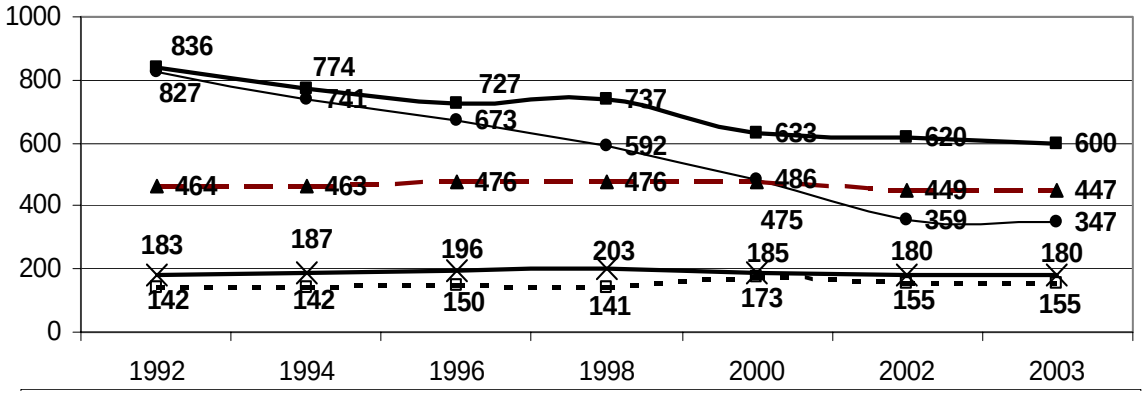
In general, the state of the environment in small settlements (villages, small towns) can be called satisfactory, but in many places conditions are tending to deteriorate. Towns that are relatively far from each other with a low population number and density are subject to the least specific environmental strain. To improve their infrastructure, the traditional large-scale solutions for major towns are not applicable because of cost-efficiency concerns. Specific solutions have not matured and been disseminated, and the subsidy structure is still lacking. This is why, out of all potential fields of action, the major projects took place in the larger towns, especially in the area of waste management, wastewater collection and treatment.

Air quality

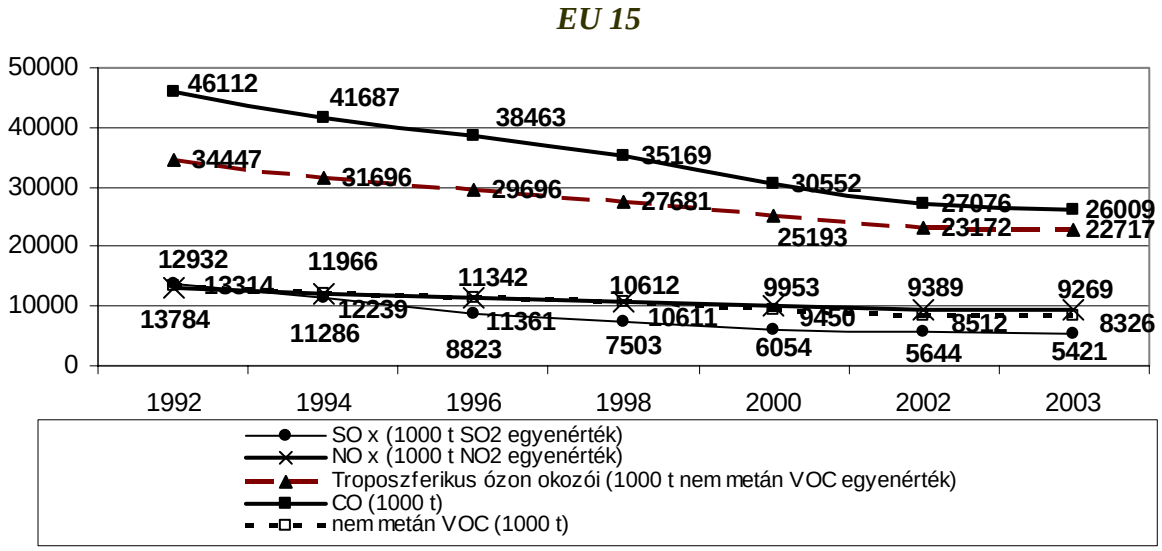
Hungary belongs to the middle-ranked polluted countries. In addition to having some significantly and a number of moderately polluted towns, air quality in most of the country is satisfactory in general. The **areas with polluted air** cover only 6.3% of the country and the **affected population** represents 35.9% of the total.

In terms of sulphur dioxide and carbon monoxide levels urban air quality is excellent throughout the country, but **nitrogen oxide levels** sometimes **exceed health limits along congested traffic nodes and roads**, **depending on weather conditions**. In areas farther away from transport, these values are stable. Particulate matter ($PM10^6$) pollution is generally reaching and surpassing limit levels in cities where it is monitored, mostly in Budapest and in cities in northern Hungary. In year 2004, Yearly limits were surpassed at a number of measuring points in Budapest, in Miskolc, Putnok and Salgótarján.

Figure 6: Air polluting substance emission indicators (source: EUROSTAT)
HUNGARY



[6] particles smaller than 10 mikrometer



(SOx/1000 t SO2 equivalent/; NOx/1000 t NO2 equivalent/; causes of tropospheric ozone/ 1000t non-methane VOC equivalent/; Co /1000t/; non-methane VOC /1000t/)

Noise Pollution

According to year 2004 estimates, 100,000 people were **affected by daytime noise levels above 75 dB(A)** and 1.9 million by **levels above 65 dB(A),** most of them living in the Central Hungary region, including the capital city.

Due to the lack of representative national scale measurements or investigations the current values are only approximate figures concerning the number of affected people. In recent years the increase in noise pollution caused by public road traffic has slowed down, thanks to the modernization of the stock of vehicles, as well as the construction of alternative roads with noise reduction methods (noise barriers, walls and landscaping). Along main roads, the noise levels surpass the permitted limits (for new projects: 65dB by day and 55dB by night) by 5 to 10 dB by day and 10 to 13dB by night.

Drinking water quality and supply

Regarding **drinking water bases**[7], 97% of the water supply in Hungary comes from underground waters. More than 1600 water bases supply water into the public utility drinking water supply.
In addition to this, there are 75 areas with favourable conditions (prospective water bases) that have development possibilities and could be used for strategic reserves. All of our prospective and 600 of our operating water bases are located in ecologically and geographically vulnerable areas. Almost 6 million people are affected by vulnerable water supplies, which is more than 60% of our total built up capacity.

[7] The data and definitions regarding water base protection come from the previous implementation studies of the Water Base Protection Diagnostic Programme made by the National Inspectorate for Environment, Nature and Water (November 2004).

Table 8: Water quantity extracted by source [million m^3] (source: NSDCP *1376: The technical and economic data of public utility water and sewage supply; *:* NSDCP *1062 HCSO data collection)*

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Surface	49	39	45	42	42	44	42	43	43
Under-ground	755	740	729	704	688	706	675	699	716
total	805	779	774	746	730	750	717	742	759
total*	796	776	744	720	704	721	687	726	739

Every settlement in Hungary has got public utility drinking water supply. This is a main accomplishment of recent years because in 1991, only 84.1% of our settlements had public utility drinking water supply. In 1991, 86.4 % of the households were connected to the water supply network, by 2004, this number grew to 93.7%, but this number is still lower than 90% in Northern Hungary, and the South Great Plain region. The network pipe length was 64.4 thousand km in 2004, which is 18.6% more than in 1991. In Hungary, yearly public utility drinking water supply is close to 560 million m^3. This amount decreased in the 1990's and reached its lowest level in 2001, and has increased slightly since then.

Table 9: Public utility drinking water supply (of this, households' water supply), million m^3 (source: NSDCP *1376: The technical and economic data of public utility water supply and sewage collection)*

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Public utility water supply	665	662	581	560	550	536	560	535	546	561
Households water supply*	445	421	396	380	377	369	388	372	381	395

Source: NSDCP *1062 HCSO data*
**Including water supplied through public outlets*

L) The quality of a large amount of public utility water supply does not meet the requirements of the EC directive[8], and the limits set by Hungarian law promulgated[9] in 2001 and amended in 2005[10]. The number of inhabitants supplied with „unsatisfactory"[11] water (arsenic, nitrite, boron, fluoride, ammonium targets not fulfilled) is more than 2.5 million, which is 25.1% of Hungary's population. The number of municipalities affected is 873.

Significant differences exist between certain regions affected by water quality problems. **Almost half of the population supplied with substandard drinking water can be found in**

[8] 98/83/EC directive on drinking water quality
[9] 201/2001. (IX. 2.) Government Decree
[10] 47/2005. (III. 11.) Government Decree
[11] "Unsatisfactory water", hereafter: not fulfilling levels stipulated in EC Directive 98/83 on drinking water quality and in government decrees. We have to mention, that this new water quality problems came from introduction of the limit values earlier set in the EU. In most of the areas there was no negative health effect of drinking water supply not meeting EU requirements.

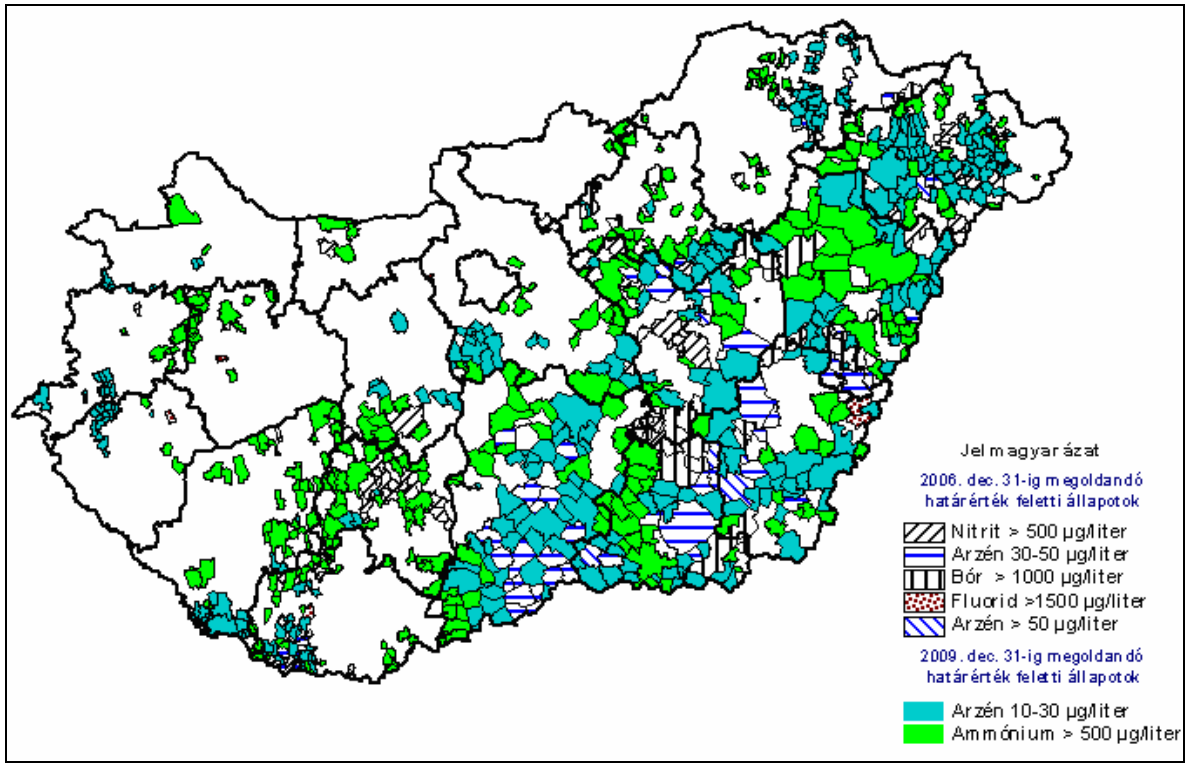
the South Great Plain region, one quarter in the Northern Plain region and ten percent in the Transdanubian region. The remaining 15**%** is divided among four separate regions**.**

Table 10: Data of settlements supplied with sub-standard drinking water by region (based on Government Decree No.201/2001. (X.25.))

Region	Number of settlements.*	%	Population	%
South Great Plain	224	25,7	1222590	48,2
North Great Plain	219	25,0	687373	27,1
Centre HU(only Pest county)	26	3,0	112309	4,4
East Transdanubia	28	3,2	34146	1,3
West Pannonia	72	8,2	61340	2,4
South Transdanubia	203	23,3	263100	10,4
North HU	101	11,6	157647	6,2
Total:	873	100,0	2538505	100,0

* Number of settlements means number of affected municipalities. Government Decree annex contains 908 towns meaning 873 municipalities.

Figure 7 Settlements affected by the improvement of drinking water quality, by main water pollutants (Legend: Limit values exceeded and solutions to be found before 31 December 2006 for: nitrate, arsenic, boron, fluoride, arsenic over 50; limit values exceeded and solutions to be found before 31st December 2009 for: arsenic, ammonium)



M) The number of **potential pollution point sources** polluting underground water is estimated at being close to 40,000. Of these, the FAVI-KÁRINFO[12] system has recorded 15,000. There are close to 700 to 800 areas that need to be re-cultivated, with associated serious environmental risks. The main environmental problem is that these areas are close to residential areas and are located on the protected area of particularly vulnerable water bases.

Flood threats

The previously mentioned flood situation exposes the affected areas to direct threat. The Danube valley has five regions whose riverside towns are increasingly threatened and the Tisza region has three. Quite characteristic of the situation is what happened to the settlements in the Bereg hollow, whose dam broke in 2001 and the restoration of the damages cost the government HUF 60 billion.

N) The situation is further exacerbated by the fact that 35% of the dams, the main line of defence against flooding, are not tall enough (measured flood levels plus 1 to 1.5m, which is the specified safety height).

Flood zones and areas with an inland water threat were sold as plots for construction purposes, often not paying attention to natural risks because of forced „development" pressures to build.

Settlement visage and structure

The original image and structure of settlements, the traditional attractive settlement visage and landscape structure, which were suited to the environmental conditions have been changed parallel with the social and economic changes as the proper regional planning and construction supervision were no longer available.
In most of our towns there are unresolved conflicts between limited possibilities, the conditions of the settlement structure and the disproportionately increasing public road transport.

Besides the aforementioned problems, the unsatisfactory state of the built-up environment and the lack of green areas are causing problems that are increasingly difficult to solve. In 2004, the green area per inhabitant in public use was reduced, and the remaining green areas were not improved in spite of the large number of local initiatives. The restoration of **historical gardens and parks** is of great significance also for environmental reasons, as it could preserve and extend local green surfaces.

1.3.2 Natural environment

The state of our waters

Hungary is a typical transit country in terms of surface waters, which means that the quality and quantity of the water supply significantly depends on the interventions made by the neighbouring countries. 96% of river water supply comes from abroad.

[12] Damage elimination Information System (FAVI-KÁRINFO), which is part of the environmental register of underground waters and geological layers (FAVI).

O) In line with the preliminary state assessment (organic pollution, nutrient load and hazardous substances) under Framework Directive of 2000/60/EC on Water (year 2005 report) we have 579 water bodies (rivers and lakes) that present a risk in the sense that they may not reach good conditions by 2015, which is 46% of our water bodies. Preliminary assessments show, that human interventions have a significant effect on the hydrological and morphological conditions of 42% of our watercourses. Among our lakes, 47 water bodies may also present a risk in this way. 470 watercourses and water bodies and 17 lakes are in the category of being at risk for water quality, the largest problem being nutrient pollution. The former surface water monitoring system didn't cover smaller streams; therefore we do not have data regarding their nutrient load, even though they are the most sensitive to eutrophication[13]. In terms of organic and inorganic micro polluters, 201 watercourses and water bodies are considered being at risk, but significant amounts of data are still missing.

Focusing on the large lakes, Lake Balaton is mainly mesotropic[14], but sometimes there are eutrophic, or near to eutrophic conditions. The ecological state of the Lake Velencei has been improved through water replenishment methods from external sources. But the lake is still susceptible to eutrophication. Lake Fertő is meso-eutrophic.

Surface water quality has not notably changed recently. The quality of our surface waters can be summarized as follows:

- River water quality is acceptable, partly thanks to the progress made in terms of wastewater treatment programmes as well as to the dilution capacity of rivers;
- The condition of smaller water courses is less good, because their pollution load sometimes well exceeds their self-cleaning capability (for example in the Central and South Transdanubia region);
- Most riverside bathing areas are not suitable for bathing because of their bacteorological contamination.

Our approximately 240 major oxbows have wetland habitats that represent a specific landscape value and an extraordinary diversity of species even in international comparison. These oxbows, similar to lakes and floodplains, play an important role in saving fish stocks during floods.

P) The floodplain oxbows get revitalised during floods, while the ones on the protected side need water replenishment. Global warming and the more and more frequent drought periods present a serious threat. Their water quality and ecological state is being endangered by the decreasing fresh water replenishment and the pollution transported through the local and feed water.

Our underground waters represent Hungary's water resources of strategic importance. 95% of our country's water supply relies on underground sources and this proportion is higher than in most European countries. Our underground water resources represent an outstanding natural asset, but **60% of them are vulnerable**. **Overall, the quality of underground water is good down to a few thousand meters' depth.**

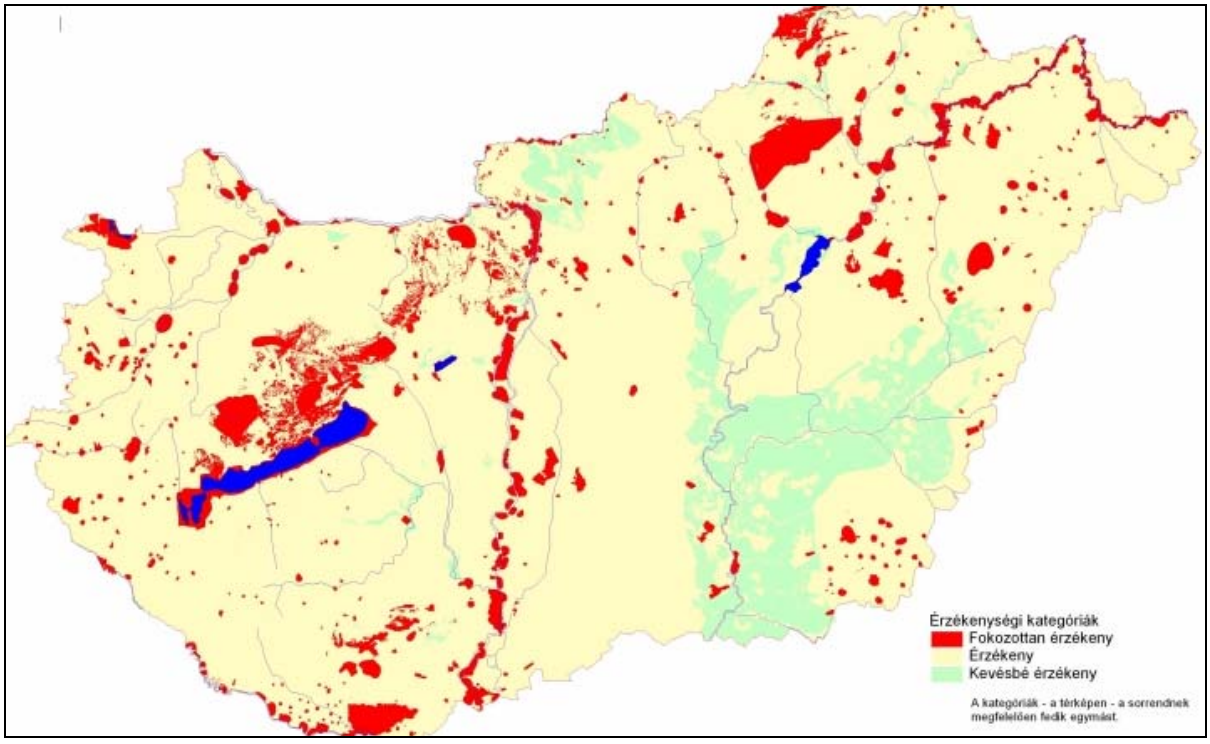
[13] excessive nutrient loads cause over-vegetation with negative impact on the ecosystem
[14] Refers to normal nutrient cycling

Q) Groundwater close to the surface and to settlements is generally contaminated. **Karst water**, which is important for our water supply, is mainly found in Northern Hungary and Central Transdanubia. The open karst found here is very sensitive to pollution. **Deep underground waters** mostly used for drinking water supply do contain sometimes, although only rarely and sporadically, contamination of surface origin.

The deterioration of the quality of these resources is caused by pollution from settlements (due to lack of sewer network, failure to get connected to sewer network, wastewater septic tanks, municipal landfills), agricultural activities (unsatisfactory treatment of manure on animal farms) or industrial activities (red mud reservoirs, storage of power plant slag and ash, mining waste and not properly constructed solid and liquid waste storage facilities). For natural vegetation and agriculture, water close to the surface (e.g., groundwater) is having greater significance. Natural captive or not captive sources emphasize natural values. Underground water, serving as the basis for drinking water supply, contains natural minerals such as arsenic, boron, nitrate, ammonium, iron, manganese, sulphate, etc., that sometimes can cause drinking water quality problems.

R) Based on the preliminary state assessment prepared in line with WFD Directive (year 2005 Report) as applicable to subsurface waters, the state of 46 out of our 108 water bodies may be at a risk in terms of not reaching good conditions by 2015. Three water bodies are at a risk, and another 18 may be at a risk with regard to water quantity.

Figure 8: Vulnerable areas for subsurface water conditions
(Annex 2 of Government Decree No. 219/2004 (VII.21.)Gov.)
(Vulnerability categories: increasingly vulnerable, vulnerable, less vulnerable)



The surface **water quality monitoring network** presently consists of 491 sampling sites concentrating on the major rivers. According to the WFD, in terms of monitoring we are lagging behind in the field of biology. The **hydrographical monitoring network** presently

consists of 330 main stations of national importance and 2661 stations operating at the territorial level. Out of 1026 watercourses and water bodies, only 182 have main monitoring stations and out of 224 lake water bodies, only 3 have main stations. There is a lack of main monitoring stations on smaller river basins, oxbows representing major natural asset and on marshy, swampy areas.

The number of wells **monitoring the quantity of subsurface water resources** is rather significant. In addition to the 70 years old groundwater monitoring network consisting of 2144 wells, there is a main station network of 377 wells to monitor deep ground waters of the basin areas, and the number of main station wells to monitor karst water level is 242. This hydrological monitoring network is being supplemented by 163 water level monitoring wells of the Hungarian National Institute for Geology (MÁFI).

In contrast with the above, there are far fewer **under the surface water quality monitoring points** that were, until recently, primarily monitoring drinking water quality of the water abstraction facilities on water bases. In 2005, this system was supplemented by 600 stations to also check close to surface zones for surface pollution in addition to monitoring drinking water bases. Inspectorates conduct measurements at about 800 wells once or twice a year for agricultural nitrate pollution.

S) As of 2007, water quality monitoring system will have to be transformed in accordance with the provisions of WFD. The scope of components measured will have to extended, and the frequency of the measurements will have to be increased, and areas where no measurements were conducted before will have to be covered.

Environmental values

In the last decades, protection (conservation and restoration) of biological and landscape diversity has become a central priority of the European Environmental Policy. One of the reasons for this is that we are part of this biological diversity and protection of our living environment also means conservation of our conditions of living. The other main reason is economic advantages because our natural resources are invaluable sources of food, renewable and non-renewable energy and raw materials that can cover the needs of billions of people.

The natural environment of Hungary is of outstanding importance even in international comparison. The varied geographical conditions are coupled with landscape variations and biological diversity. The Pannon geo-biographical region is almost entirely covered by Hungary. The whole country is home to many species and habitats that are unique to this area. Our natural environment still supports migration and genetic exchanges with neighbouring countries, along relatively well preserved ecological corridors. This ensures the sustainability of the specific biodiversity in the Carpathian Basin.

Presently, 9% of Hungary (839 019 ha) is defined as nature protection area, protected by specific local or national laws.

Table 11: Changes in nature protection areas of national significance in Hungary

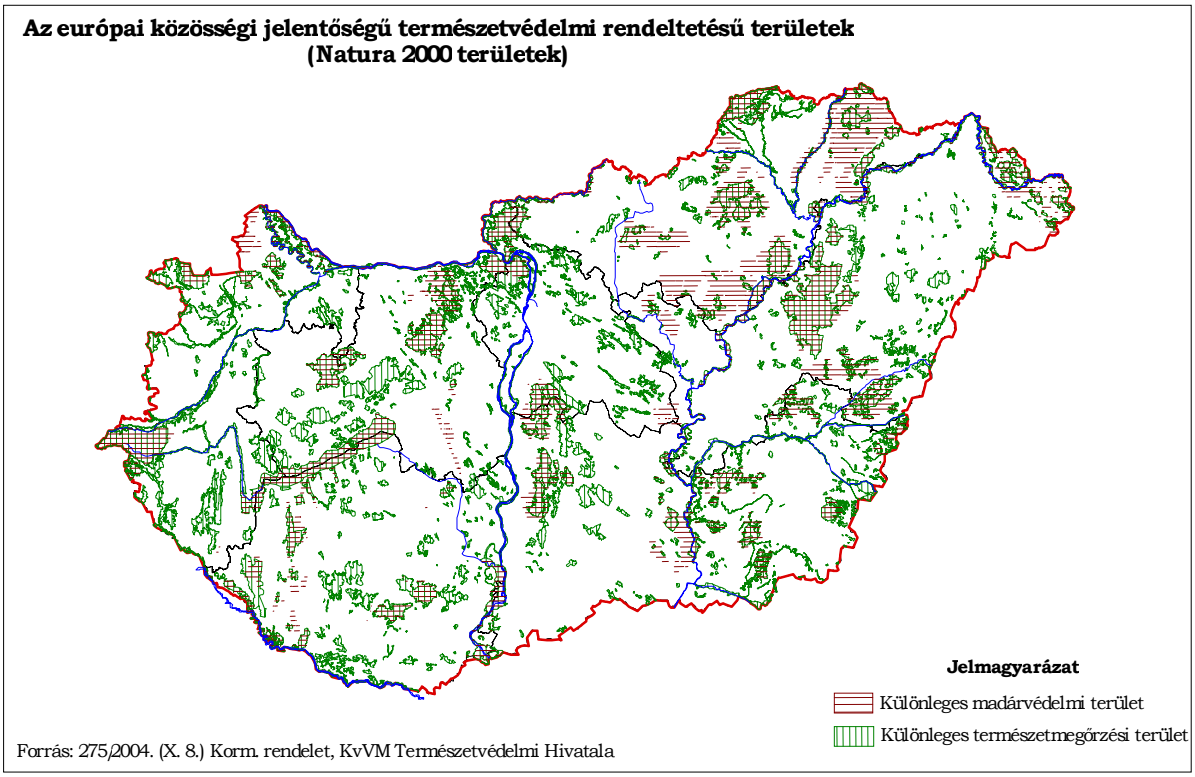
Protection categories	1990[15]		1997		2005	
	ha	number	ha	number	ha	number
National parks (NP)	146 595	4	407 445	9	486 056	10
Landscape protection areas (TK)	414 753	44	319 830	35	324 014	36
Nature conservation areas (TT)	35 016	138	25 403	138	28 949	147
Natural reserve/ momentum (TE)	-	0	0	1	0	1
Total	**596 364**	**186**	**752 678**	**183**	**839 019**	**194**

According to legislation in force, there are 632 plant -, 828 animal -, 35 mushroom - and 5 lichen species that are protected. Also, 63 plant and 137 animal species are highly protected.

In accordance with the provisions of Council Directive 79/409/EGK on the conservation of wild birds (Bird Protection Directive), the Special Protection Areas for Birds (SPAs) have been designated with attention to the habitats of 79 species that are regularly found in Hungary. In accordance with Council Directive 92/43/EGK on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), Special Areas of Community Interest (SACs) have been designated including the 46 habitats, 40 plant species and 111 animal species. The Special Protection Areas and the Special Areas of Community Interest jointly constitute the Natura 2000 network of the European Union that is mandatory to be protected. It covers 1958 hectares in our country that overlaps 39% of the areas of national significance and high protection. There are other protected areas that besides being places for sustainable, environmentally friendly farming also have economic potential while attention is paid to their ecological function.

[15] source: Hills and nature conservation map of Hungary (M= 1:390 000) published by Klett-Perthes

Figure 9: Special Areas of Community Interest (Natura 2000 Areas)



Legend: Red: special protection areas (SPAs), Green: special areas of community interest, (SCIs) (Source: Government Decree No. 275/2004. (X.8.) Gov., Nature Conservation Office of the Ministry of Environment and Water)

Table 12: Number of Natura 2000 areas in Hungary, 2005

Types of areas of community interest	Million ha	number
SCIs	**1,40**	**467**
SPAs	**1,38**	**55**
Natura 2000 total (41% commonly shared area)	**1,96**	**522**

T) There are new conditions that are in many ways endangering the conservation of our natural heritage. Land use needs (for example green field investments) are expanding and diversifying, therefore natural diversity habitats have been reduced. The high number of artificial facilities (electric overhead lines, public roads) fragmenting and insulating habitats further increase this negative process. An increasing problem is the occupation of both the protected and non-protected areas by invasive (aggressive, non-indigenous) species.

The negative effects that are changing natural habitats can by counter-balanced most effectively by habitat restoration and development and by the restoration of connection between habitats.

Hungary's **inanimate natural assets** are witnesses to hundreds of millions of years of the geo-historical development of the Carpathian basin. They give us knowledge of the earth's

and its biodiversity's natural evolution, surface and climate changes. The number of presently known caves in Hungary is 4,200 whose total system length explored is close to 220km. Based on broad scientific, historical and/or economic significance, 145 of them are *highly protected* caves, and 304 need distinguished protection. We are in the process of recording what we call "natural momentums": springs (1600) and water absorption sinks (more than 400) that take water into the karst. Several other outstanding *geographic and surface morphological assets* have been declared as nature conservation areas, or are protected by law as parts of natural parks and landscape conservation areas. All of our *tumulus and earth works* are highly protected nature conservation areas, based on Law 53 of 1996 and also belong to the natural momentum category. The preservation of inanimate natural assets is endangered by natural processes and human activities.

Of special value to us are our **botanical and historical gardens**, which are the living museum of our relationship to nature. Presently, besides the areas of natural parks and landscape conservation areas, there are 22 botanical gardens under national and 67 under local protection totally covering approximately 1500ha. This overlaps in part with the 200 historical gardens that fall under national historical monument protection. Among these, castle parks deserve high attention: 31 gardens of outstanding importance are under national or local protection. Some of the castle parks are recorded as arboretums.

Therefore, our botanical and historical gardens are an irreplaceable part of our national assets on account on the natural values they represent. In the last decades, we have not invested in the planned reconstruction and development of most of these botanical and historical gardens because of the lack of funds.

U) A large part of the natural value is in agricultural land and forests. **Environmentally protected areas are comprised of: 12% field, 26% meadow, 47% forest**. This also shows that effective protection of these areas cannot be accomplished without good agricultural practices – nature conservation treatment in protected natural areas –; the natural value of these areas can only be sustained by human action. Close-to-nature agriculture and forestry needs special habitat friendly technologies.

V) Environmental consciousness necessary to preserve and enrich biological diversity and the natural environment is being perceptibly improved. An important role in nature conservation education and awareness of those of school age is played by the Forest Schools. The number of these schools is increasing along with their popularity. Presently, there are 263 registered Forest Schools (close to 30,000 students), of which 150 are qualified. The service providers are many: natural park directorates, forestry-related JSCs, municipalities and non-governmental nature conservation organizations. All of these are operating forest schools.

There is a strict assessment process in place to ensure education standards, but their instrumentation level necessary to their education, training, information provision and demonstration activities has not reached optimum levels yet.

The concept of nature conservation based on early prevention is being supplemented by a modern, dynamic nature conservation approach. This approach ensures **long-term preservation of environmental values by sustainable land use and treatment**.

The strength and activity of the state nature conservation apparatus, municipalities and non-governmental organizations are not sufficient to treat all environment protection and nature conservation problems. To reach our nature conservation objectives, we need to **harmonize**

the efforts of all these sectors and reach societal agreement. To avoid further problems, it is absolutely necessary to define the nature conservation system of considerations so as to protect and enforce the nature conservation values we have, in order to win over societal support, and awaken environmental interest.

1.4 SWOT analysis

The SWOT analysis is based on a state of environment considered sustainable and ideal and the social processes generating this state.

From this point of you:
Strengths= Existing environmental values, and their sustaining social conditions
Weaknesses = Existing environmental problems, or lack of environmental values
Opportunities = Environmental values that can be restored or established, and their supporting social processes
Threats= Threatened environmental values, and their endangering social processes

The Weaknesses and Threats columns in the Table show with an * which problems can be connected with the Environmental Operational Programme (EOP) action.

Table 13 SWOT analysis

Strengths	***Weaknesses***
- Hungary has great natural, agro-ecological conditions and values and significant geothermic conditions on par with anywhere else on earth. - The country belongs to the Pannon bioregion and is home to several unique species living only here. - Many small villages and towns are still in good condition. - Air pollution is still low in the countryside, and emission of polluting substances is decreasing. - Public Utility drinking water infrastructure is built out to 100%. - 97% of drinking water supply is based on subsurface waters. Subsurface water supplies – except ground water – have excellent quality. - Primary energy consumption is low compared to Europe - Favourable natural conditions for use of certain renewable energy sources (first of all biomass, solar energy, geothermic energy) - The forest stock is in good condition, which favours forestry and game management. - Conditions for multi-function, close-to-nature agricultural and forestry activities in Hungary are favourable. - Retaining the traditional, one can say, partly sustainable consumption habits in the countryside (low water consumption, economical energy consumption, availability of solutions for recycling) - Existing knowledge in the field of extensive agriculture, farming lifestyle and certain arts and crafts - Relatively low application of chemicals in agriculture	**- The present land and water use is too uniform, contrary to the mosaic conditions: lands suitable for wetlands, meadows and forests are used as agricultural fields*.** **- Damaged landscape*, due to ecologically negative effects of unplanned construction and railway infrastructure** **- 46% of the rivers and body of lakes are at a risk of not reaching good quality state till 2015*** **- 23% of the territory of the country is threatened by floods, the threat has increased, the condition of flood protection structures is not satisfactory, 35% of the main defence dam lines do not reach the necessary height*.** **- High risk of drought, sensitivity to drought in the whole country*** **- Environmental conditions of major towns are not satisfactory, and show deteriorating tendency*.** **- Less then one-fifth of municipal waste is being reused and recovered*.** **- High number of operating landfills, which do not meet requirements *.** **- Areas of significant number in need of damage elimination*** **- Level of wastewater treatment and harmless disposal is behind the European standard. In areas without wastewater treatment, most of the wastewater is polluting the soils and the ground water*.** - Large sections of the population are affected by noise pollution. **- Significant numbers of our drinking water bases are located in a vulnerable environment*.** **- Energy intensity is higher than in old EU Member States*.** **- Low proportion of renewable energy sources*** - Significant part of botanical and historical gardens is in poor condition. - The centralized public road infrastructure hinders fast and safe transport between regions and causes unnecessary pollution. - Public places of towns rich in historic monuments are neglected and in poor condition. - Number of settlement parts is high that are inhabited by disadvantaged social groups and are in bad condition. **- Low level of knowledge about sustainable development and the connection between environment and development. Consumers don't realize the connection between the growth of consumption and the possible deterioration of the state of environment*.** - Complex and serious environmental pollution in the capital city and its agglomeration, typical of major towns. - Reduction of possibilities of livelihood in small towns. Abandonment and decline of villages.

Opportunities	*Threats*
- **Modern, dynamic approach to nature conservation that ensures sustainable land use and treatment***	- **Natural habitats are continuously diminishing, becoming fragmented, and this process of isolation may become irreversible***
- **The negative habitat situation could be effectively counter-balanced by the restoration, development and re-connection of fragmented habitats ***	- The spread of intensive agriculture causes a sustained threat to lands.
- Changing land use to improve water balance and water drainage without reducing agricultural efficiency is possible	- **The conflicting interests between intensive and environmentally friendly agriculture***
- The spread of close-to-nature agricultural and forestry activities helps to sustain biologic diversity	- Reduction of forest areas caused by unsustainable methods of biomass production
- Growing demand for region-specific, high quality bio-products, higher evaluation of eco-farming.	- Both quantity and quality of water resources are significantly threatened by upstream countries
- **The spread of environmentally conscious attitudes and the development of the environmental industry and waste management significantly decreases the amount of waste deposited in landfills. ***	- **The negative effects of climate change may get strengthened.***
- **Soil and groundwater pollution can be reduced by the extension of the wastewater collection system and the spread of alternative wastewater treatment*.**	- **Increased pollution concentration of wastewater and municipal waste caused by continued damaging consumer habits. ***
- **Higher security for water resources providing drinking water supply is improving*.**	- Increased risk of water pollution of surface origin in deep groundwater in case of increased use of deep groundwater for drinking water supply
- **Regional imbalances are reduced by improving urban environmental infrastructure, protection against flood damage and environmental restoration. Improved quality of life for inhabitants ***	- **Infrastructure development projects, green field investments, and active building up of green areas around settlements may result in the loss of natural or close to nature areas***
- **Rising environmental awareness of the population through nature conservation and environmental education (in particular the development of the forest school network) ***	- Conflicting interests between economic development, environment protection and sustainability principles.
- **More efficient use of renewable energy and the spread of environmentally friendly techniques can improve the country's environmental and economic efficiency and sustainability.***	- Increased traffic and transport, the transit situation has negative impacts on the environment
- Bringing life back to certain town districts and the countryside, new city functions can positively affect the inhabitant's quality of life and increase economic opportunities	- **Specific energy consumption increase expected in the household and transport sectors***
- Strengthening of trans-boundary and international contacts regarding environment protection	- **Uncertain legal framework in the renewable energy sector is decreasing investments (investment plans need a stable legal framework in the long term)***
- **The activity of the non-governmental domain and the number of non-governmental organizations increase***	- **Energy efficiency is not improving due to lack of funds and unfavourable legal framework***
- **Natural mineral content of drinking water is a problem. With EU assistance, solving this problem can improve the attractiveness of the affected areas ***	- Intellectuals, qualified workers are leaving regions in crisis. Unfavourable demographic developments get further strengthened: depopulation of micro-villages, population becoming older
	- Increasing imbalances inside the society and between territories, community disintegration, termination of former community ties, and continued impoverishment of certain social groups
	- Increasing quantities of unhealthy foodstuffs and the dubious origin thereof.
	- **Increasing frequency and quantity of floods.***

1.5 Experiences of using European Union funds

The accomplishments of EU funded projects can be divided in three groups that reflect the following experiences:

1. Investment preparation

Investment permitting takes a long time, while regulations regarding the use of EU funds (n+2 and n+3 regulations) give us more stringent rules for the timing of payments. In the medium-term, it isn't enough to improve the situation of large EU co-financed investments. The permitting system efficiency has to be improved also in general. It is necessary to carry out a **comprehensive supervision of the whole permitting process**, which would improve the situation not only for the large investments.

During project preparation in the case of revenue generating projects defined in Article 55 of 1083/2006/EC Council Regulation (11 July 2006) laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999 proportion of co-financing should be determined according to the cost-benefit analysis described in Article 55. This obligation stands even in case the project preparation is not funded from the OP.

Of the total project funds, a significant part, 3-5%, is used for **project preparation**. There are no or only unreliable application sources of funds for project preparation, therefore settlements delay project preparation until the decision on granting subsidies is confirmed.

Creating and drafting applications and collecting documentation require high levels of professionalism, planning and application writing knowledge, as well as prudence. That is why the municipalities of larger settlements having private professional companies and experienced partner-planners, previous studies and permits issued by the authorities have better chances of winning applications. The application system is over-bureaucratic (over 30 obligatory appendices) to avoid the risk of reimbursement.

In the 2007-2013 cycle, the application system will fundamentally change in order to filter out badly drafted projects, which presently cause most problems. By the planned **introduction of the two-stage application system,** applications could be filtered out during the first stage. Insufficiently prepared, ineligible projects, cannot reach the second stage. This way, decision in the second stage can already be made on well-prepared, detailed, feasible project proposals.

Recently, a**rchaeological excavations** are causing special project preparation problems. In the area of large construction projects, the time frame and costs of excavations to save cultural heritage are not foreseeable, and are not sufficiently clarified at the time of the decision on the investment. A further problem is that the fees paid by the investors regarding archaeological excavations have a significant share in the financing of the heritage protection institute system.

As a consequence, we need to be **stricter** than before in the area of **granting EU funds**, and only well prepared projects are allowed to be funded. We have to review in detail the regulations regarding heritage protection, in connection with development investments. We also need to make suggestions to reduce the time frame and costs of excavations in advance.

2. Public procurement

The prolongation of public procurement procedures is causing significant delays. The high value procurements are often being attacked even without good reasons, and still the Public Procurement Board (PPB) is not applying any sanctions against those attacking the decision without substantial reasons. The PPB is not consequential enough on certain resolutions, and this significantly endangers its predictability and causes large delays because of legal remedy issues.

On a positive note, we can mention the raising of the processing fee to 900 thousand HUF. A future solution could be to only hand in those major projects to Brussels in which public procurement procedures have already started. To do this requires reviewing applications using conditional public procurement and modifying prevailing public procurement rules as needed for EU funded projects.

In many cases, the failure of applications could result from the inexperience of the beneficiary. This could be helped by frequent support to the beneficiary, checking documentation quality, assistance to follow procedures and participation in procedures. Besides this assistance, EIOP, the 2004-2006 Environment protection and Infrastructure Operational Programme, involves independent public procurement experts and makes management costs more transparent to support the successful management of these procedures in the present period.

3. Low level of payments

In general, the low levels of payments are due to two problems. One is the **slow progress of projects** and the other is the **lack of financial resources of the beneficiary**.

The slow progress of projects is of course due to a number of unsolved problems. These problems are the complexity of environment protection infrastructure investments, the difficult technical and economic content and the necessary high-level project management capacity.

The time needed for archaeological excavations is a serious problem. Present regulations ensure a monopoly position to the regionally competent museums, which is not in the interest of a favourable shift in the price or the speed of the work. The solution could be to "liberalize" regulations regarding archaeological excavations.

Different interpretations of the laws on behalf of the authorities further complicate matters. A typical example of this is that the Regional Environment, Nature and Water Inspectorate (KTVF), the State Public Health and Chief Medical Officer Service (ÁNTSZ) and the bodies responsible for public roads are identifying more and more demands. This leads to situations where projects cannot be completed because of timing and financing problems. In many cases the regulations by authorities are too strict with regard to certain projects.

During the projects, it is also noticeable that beneficiaries are not precise enough. In many cases data supply is inaccurate (for example, data of landfills to be re-cultivated) and this

causes serious problems and delays. **Better staffing and more experienced staff at local implementing agencies could solve the problem.**

The above mentioned delays in the public procurement process also causes delays in project work, and along with this slows down the receipt of payments.

Changing legal frameworks are also a source of problems. Legislation does not always consider that small changes can create serious problems in a strict EU project financing setting.

In case of projects financed by the Cohesion Fund delays may occur, because changes in the technical content have to be approved by the assigned EU authority, and surplus costs need to be financed by domestic sources. In projects subsidized by ERDF (European Regional Development Fund), changes in the technical content requires the approval of the Managing Authority, and the modifications of the grant agreement.

Because of changes in regulations, the financial institutions appointed as beneficiaries are being reorganized or closed, which is causing more delays.

The beneficiaries financing problems may occur in a number of ways. First because they cannot pay their self-financing share in time and second because they cannot implement (at all or with delays only) any non-subsidized work connected to the project. The problem of the lack of self-financing could be solved in a number of ways: to reduce their self-financing costs, or forming new banking arrangements to enable municipalities pay their share.

2. STRATEGY

2.1 National strategy environment

2.1.1 Main directions of our environmental policies

The main directions of Hungarian environmental policies are included in the **National Environment Protection Programme (NEPP II), for the period of** 2003 – 2008, prescribed by Act 53 of 1995 on the general rules of environment protection and approved by the Parliament. Based on Section 40 (4) of the Act, **the content of NEPP-II** must be enforced in defining the country's socio-economic plan, making eco-political decisions, regional and settlement development, regional planning and **in any governmental planning and implementation activities in any sector of the national economy**. For the New Hungary Development Plan, NEPP's objectives are the initial conditions. It is a legal duty to enforce the objectives of the current NEPP in the drafting and implementation of the operational programmes of the New Hungary Development Plan.

NEPP-II emphasizes the preservation of environmental values by accurately defining the "state" targets, independently from environmental political decisions and the accurate definition of methods they adopt. The environmental target states and the present conditions are shown by concrete indicators and numbers. The way of reaching the target states can be identified with knowledge of the regional conditions and the current best solutions. This gives many opportunities for the planning of operational programmes, among others.

NEPP-II suggests applying basically two environmental policies at the same time in order to reach the target states. First of all, thematic action programmes have to be made to solve environmental problems of those priority areas that need special treatment, in the planning phase of NEPP-II. This is justified by the complexity of the designated areas, and the large circle of the affected environmental components and large number of affected people. Second, we have to urge the different sectors and sub-sectors who are responsible for environmental pollution to operate in an environmentally way, and assist integration of the environmental aspects into their sectoral activities.

The NEPP-II has nine thematic action programmes that identify the area's specific and operational objectives. Yearly made implementation plans that are going to be based on these nine themes will allocate the main environmental projects that are to be developed. The nine thematic action plans are the following:

1. Environmental awareness raising action programme,
2. Climate change action programme,
3. Environmental health and Food safety action programme,
4. Urban environment quality action programme,
5. Biological diversity protection and landscape conservation action programme,
6. Rural environment quality, area and land use action programme,
7. Protection of our waters and sustainable water consumption action programme,
8. Waste management action programme,
9. Environmental safety action programme.

The financing of tasks contained in NEPP-II is assisted by central and local budgetary sources, companies, individuals and international as well as EU sources. The budgetary needs of the assignments specified in the NEPP-II nine action programmes is HUF 2100 billion at year 2002 price levels, expected total expenditure is HUF 4200 billion. In the process of work related to the drafting and implementation of the National Development Plan, we have to enforce the objectives of NEPP-II action programmes in the following operational programmes (with different levels of significance):

Action programmes	EDOP	**TOP**	**EEOP**	**SoROP/ SIOP**	**SROP/ APEOP**	**ROPs**
Environmental awareness raising	**X**	**XX**	**XX**	**XX**	**X**	**X**
Climate change	**X**	**X**	**XX**			**X**
Environmental health and food safety	**X**	**X**	**XX**	**X**		**X**
Urban environment quality	**X**	**XX**				**X**
Biological diversity protection and landscape conservation		**XX**	**XX**			**X**
Rural environment quality, area and land use		**X**	**XX**			**XX**
Water protection and sustainable use	**X**	**X**	**XX**			**XX**
Waste management	**X**		**XX**			**X**
Environmental safety	**XX**	**XX**	**XX**		**X**	**X**

XX: significant tasks, X: being affected by

Accomplishment of environmental obligations by EU regulations contracted in the Accession Treaty is necessary in many fields of environmental sustainability. Some of these obligations have a deadline. To accomplish our obligations developments are necessary until 2013 in the following fields: wastewater treatment, water quality, waste management, remediation, recultivation, Water Framework Directive, nature protection (NATURA 2000 areas, habitat protection, bird protection), renewable energy, energy efficiency, sustainable consumption, e-environmental protection (Aarhus).

2.1.2 Relation with other operational programmes of the New Hungary Development Plan

Relation with the Economy Development Operational Programme (EDOP)

In the frame of priority 2, the "technological modernization of projects", EDOP supports the dissemination of such **environmentally friendly, clean, energy and material efficient production technologies** to implement sustainable development as a horizontal principle, which aim at improving environmental performance in the first place and also enhances environmental awareness and serves as a good example to other companies to follow. These technologies improve competitiveness and/or expand production capacity besides helping to reduce environmental burdens.

Paying attention to environment protection has to be a basic horizontal principle in EDOP. In addition to improving competitiveness, a priority aspect is the dissemination of sustainable resource management and environmentally friendly operation of companies in Hungarian economy. While helping the small and medium size enterprises (SME) sector, we have to emphasize the strengthening of the economic actors who are innovative and effective from the environmental point of view.

In the area of energy efficiency, EDOP supports technological investments that have complex effects on the environment. In the framework of the **EEOP** only those projects are eligible whose **priority and primary objective is to reduce energy consumption** and improve energy efficiency.

Relation with the Transport Operational Programme (TOP)

The reduction of environment pollution of transport origin – primarily air pollution and noise pollution - and accomplishment of sustainable (energy efficient) transport infrastructure are being supported by the developments implemented in EEOP. Highlighting the most environmentally friendly types of transportation (railway, water, and in general public transport) in the four priority axes of TOP, will be accomplished as follows:

Priority axis 1: *Improving the international accessibility of the country and the regional centres*

The main field of improvement of railway transportation is the development of the Trans-European Railways (TEN) including its railway sections in Hungary, and within this the railways of the Pan-European Corridor (track restoration, modern, electronic control and safety, improving the proportion and length of electrified lines). Inter-modal development of transportation on the Danube is the primary axis of developing water transportation in Hungary.

Priority axis 2: *Improving regional accessibility*

In this priority axis, the expressways connecting the regions to the TEN-network will be developed. It is important to emphasize that this priority axis can only offer environmental solutions if water and railway transport is dynamically developed.

Priority axis 3: *Linking modes of transport and improving the intermodality and the transport infrastructure of economic centres*

The result of this development is that the country and the regions become more accessible, and this leads to a significant improvement of the competitive and environmentally friendly capacities of transportation. By developing the transportation connections of the intermodal logistical centres, it is advisable – wherever possible – to direct transport towards more environmentally friendly ways (transport by railway, water). Therefore in the following time period, the development of ports can also fulfil trimodal functions (to connect with the railway), and can create centres for shipping.

Priority axis 4: *Improving urban and suburban communal transport*

These developments will build up the suburban railway system around Budapest and the main railway stations will be renovated. Restoration of passenger railway wagons is also part of the suburban railway system development plan. The quality of the communal infrastructure and its services are improving also in the larger rural cities, which is expected to lead to a reduction of transport by personal car.

Besides the above, an important element of environmentally friendly transportation is the use of environmentally friendly fuel, which is being supported by the „Increased renewable energy sources" priority axis of EEOP. The other important element is to establish an energy efficient, environmentally friendly stock of vehicles clear of obstacles. Vehicle innovation, R&D and production of environmentally friendly vehicles is contained in EDOP.

Relation with human resource development operational programmes

In ESF (European Social Found) type actions contained in SoROP (Social Renewal Operational Programme), and in ERDF (European Regional Development Found) type actions contained in SIOP (Social Infrastructure Operational Programme), environmental aspects have to be viewed in horizontal ways - differently in the different operations.

Environmentally friendly energy resource management and environmental safety have to be treated as outstanding aspects in human infrastructure investments in the same manner as the dissemination of environmental knowledge and environmentally conscious attitude have to be integrated into the operations promoting education, retraining and employment. As part of this, the digital contents will have to be significantly developed in the field of environment protection, which will be accessible for wide range of users, through the development of information system infrastructure with the tools of knowledge management (distance learning, knowledge portals). By developing information system infrastructure and content providers (remote work, e-conference, e-banking, e-education, etc.), we could reduce mobility needs, which can assist us to fulfil our environment protection targets. Effects of the actions planned by EEOP will greatly increase employment in the next 7-10 years. These developments will improve appreciably life quality while also being conscious about equal opportunities and territorial equality.

Relation with State Reform Operational Programme (SROP) and Electronic Public Administration Operational Programme (EPAOP)

Implementation of resource efficient electronic public administration, e-environment protection, and central development to improve government efficiency are in the interest of environment protection. While renewing public sector, inspirations to develop public administration and the community should be supported, as well as the preparation of environment protection programmes and plans on a local, micro-regional level. Environmental information technology and monitoring operations in EEOP will also assist to achieve a more efficient public administration and network.

The e-environment development (hardver and softver) in the EEOP aims at the environmental data collection-storage-service. The EPAOP contains the general (business data processing, IT security etc) developments of organisation in public administration. These developments do not contain environmental information technology.

Relation with the Regional Operational Programme (ROP)

The following environment development plans are being implemented (mostly not as independent priority axis, but as part of other priority axes) in the regional operational programmes:

- As part of settlement rehabilitation: protection and preservation of cultural heritage, dust-free in-town roads, revitalization of green areas for community purposes, establishing new green areas, planting trees in the inner parts of cities, inland water and precipitation drainage in towns, network reconstruction of wastewater treatment systems.

- Wastewater treatment of agglomerations and towns with less then 2000 population equivalent: using combined technical solutions, as part of the Individual Wastewater Treatment National Implementation Programme by giving preference to the establishment of small environmental friendly treatment systems and proper individual placement of sewage water; municipal liquid waste collection and treatment by the same axes.
- Elimination of damages to polluted areas connected to brown-field investments as part of settlement rehabilitation and the development of the economy.
- Eco-tourism developments (in connection with national parks, water directorates, botanical gardens, and other protected areas)
- Energy efficiency arrangements for the inhabitants (included in integrated town district rehabilitation plans)
- EEOP supports reconstruction projects exclusively with energy saving objective in non-residential buildings, especially in public buildings. Integrated settlement rehabilitation and development constructions of the ROP the aim of the project is to renew a certain part of a settlement environmentally, economically, and socially, activities in these constructions concerning energy savings of public buildings are eligible costs only. Projects are supported in case the regulations for the proportions among different cost types are strictly followed.
- Implementation of environmentally friendly regional transport infrastructure.
- Conservation and promotion of local environmental values, introduction of environmental programmes in relation with developments. Extension of Green Point network system, creating regional environmental-information centres and environmental databases.
- Asbestos removal in private and municipal dwelling places, public buildings, including removal of insulation containing asbestos, and secure treatment and disposal of these wastes generated.
- Qualitative and quantitative protection of our waters, arrangements in regionally significant water protection areas:
    - Riverbed rehabilitation to reach the „good state" – water replenishment, improving water quality, rehabilitation (*building and reconstruction of water courses and reservoirs, waterbed and flood-plain reconstruction, lakes, oxbows and tributaries)*
    - Water retention, water supplement, water replenishment/re-injection to reach "good state" (development of inland water as water resource, regional water retention, supplement, storage and rehabilitation of the water system.
- recultivation of urban solid waste landfills on local level, with the exception of such recultivation projects, that includes several regions and their value exceeds 650 million HUF. These are mostly (80%) the recultivation part of ISPA and Cohesion Fund project in the implementation phase, or part of large waste management projects already far in the preparation phase. Landfills, which are part of the EEOP projects, are listed in the EEOP's call for proposal. Only settlements not included in this list are eligible for ROP funds.
- recultivation of carcass pits,
- recultivation of municipal liquid waste landfills

Relation with the Central Hungary Operational Programme (KMOP) according to the 2nd objective (competitiveness and employment) falling outside the scope of the operational programme of the six convergence regions.

The Central Hungarian Region (CHR) is in a special situation compared to the other six convergence regions. In areas where EEOP developments will be implemented by using Co0hesion Funds, CHR is also eligible for assistance, just like the other six regions. Therefore, on the one hand, CHR is concentrating sources available for environmental development on projects which are being implemented by the Regional Operational Programmes in other regions. On the other hand, CHR prepares measures similar to those under 'Wise management of natural assets'; 'Increase of the use of renewable energy sources' and „Sustainable lifestyle and consumption patterns" priority axes, since these measures are financed from ERDF in the EEOP in the other six projects – however, CHR is not eligible for ERDF sources allocated to the EEOP.

Relation with flagship projects

The efficiency of the actions of operational programmes and the integrated accomplishment of projects with strengthening effects on each other are enhanced by the **„clean city – green land"** and the **„more with less – energy efficient buildings"** programmes as flagship projects.

2.2 EEOP Development Strategy

2.2.1 Connection to the Long- and Medium Term Development Plans of Hungary

The overall strategy of EEOP, along with the objectives of the **National Development Policy Concept**[16] is to reach the overall objectives of the NHDP, the **expansion and continuous growth of employment** while ensuring a safe, clean, good quality environment, and to create opportunities for healthier, longer and more fulfilled lives.

EEOP contributes to employment and development of human recourses in several ways. First, cleaner and healthier environment improves employability. Second, environmental developments increase employment – both during the investment and maintenance phase. Third, working with the new technologies brought by the investments – especially in the field of energy efficiency and use of renewable energy – contributes to the development of human capital.

The projected territorial developments to be implemented by EEOP are based on NDPC (National Development Policy Concept) and the **National Regional Development Concept**[17]**.** Through EEOP's developments, we can reach the objective of having the country run in territorial harmony, with efficient, sustainable and stable territorial development.

The basic condition of the development of society and the improvement of quality of life is to have an environment that is easy to live in for all. Therefore, we must ensure lasting protection and development of our resources and sustainable natural and man-made environments, which ensures quality of life in the long term. This includes the preservation and sustainable use of natural and man-made cultural values as well as the improvement of

[16] Resolution of the Parliament No. 96/2005. (XII. 25.)
[17] Resolution of the Parliament No. 97/2005. (XII. 25.)

material and energy efficiency, introduction of modern technologies and ensures high level public services.

GENERAL STRATEGIC IMPACT INDICATORS:

Table 13: Hungary and EU ecological footprint, bio-capacity and ecological deficit, 2003 (Source: WWF Living Planet Report 2006)

	Total ecological footprint (global ha /p)	Total bio-capacity (global ha /p)	Ecological deficit (global ha /p)
Hungary	3,5	2,0	-1,5
EU 25	4,8	2,2	-2,6

The overall strategic objective – which requires other programs than EEOP, too – is to stop the deterioration of these indicators, first of all the ecological deficit in Hungary[18], contrary to current general trends.

2.2.2 Enforcement of horizontal policies

The horizontal **sustainability** principle as a tool is intended to move development policy towards a sustainable society. In line with that, horizontal principle is enforced on the basis of criteria (socio economic organization principles) whose systematic application in the implementation may mitigate the unfavourable impacts of the current structures, or may give rise to structural changes that alter the unfavourable social and environmental processes. As part of sustainability, we also have to enforce the principle of social security to ensure the enforcement of democratic norms and fundamental rights to protect human life and dignity, and to minimize situations that endanger human safety.

Pollution reduction and clean environment have positive effects on health conditions and quality of life and this promotes the creation of **social cohesion,** including equal opportunity. All types of environmental development will have increasingly positive effects on the quality of life of the disadvantaged, since they usually don't have the ability to enforce their interests. Improvement of urban environmental quality and the level of basic environment protection infrastructure services are strengthening the awareness of having common environmental interests and feeling to belong together. The strengthening of social cohesion is also reflected in the requirements on implementation.

Regarding equal opportunities, EEOP guarantees to contribute to equality between men and women, and to equal opportunity of genders during all phases of planning, implementation, monitoring, and assessment. Special attention is focused on the employment of equal opportunity target groups. Furthermore the OP ensures prevention of any distinction regarding gender, racial and ethnical belonging, religion and any opinion, handicap, age, and sexual direction, with special attention at the access to the funds. In order to guarantee equal

[18] Changes of ecological footprint/person, between 1975-2003 +5%, while biological capacity decreased by 22% in Hungary. (Living Planet Report 2006)

opportunities, strong focus must be directed on balancing different regions, so that the location, where interested social groups live, must not influence their life conditions.

In the course of implementation of the EEOP objectives, we have to emphasize the enforcement of the (1) territorial cohesion targets and the (2) horizontal principle of territorialism (territorial perspective, territorial focus, territorial integration, land use principles), according to the NHDP.

To enforce **territorial cohesion,** the application of the regional approach and the territorial attitude has outstanding significance in every sector of development policies and at every level of planning, implementation, project development, project follow up and review.

The application of the principle of **territorialism** means paying special attention to territorialism in the implementation of the operational programme and the planning, accomplishment, review; follow up of the projects, their operations, and their axes of priority in order to ensure its true realization. This includes ensuring required professionalism; establishing data collection for measurements; applying this principle and calling to account thereon in the elaboration of the action programmes, their follow up and evaluation; project development, award process, efficiency evaluation; and presenting territorial objectives and principles of the institutional programme implementation and monitoring.

During the implementation of EEOP, the following horizontal objectives must be enforced:

Horizontal objectives	*Considerations to be enforced*
I. Acceptance and fulfilment of environmental requirements	1. A condition to implementation should be that it should be adjusted to the **appropriate level of environment protection and regional development policies,** thereby increasing the chances of being accepted by society. 2. Emissions of developments cannot exceed the determined loads (**pollution levels), neither locally, nor nationally.**
II. Helping the sustainability of local communities by development and the preservation of internal functions and sustainable environment. Insuring the balance between human needs fulfilment and the proper state of local environmental conditions.	3. The objective is to support those projects whose results are **felt first of all locally** (in the given region), contributing to decreased transportation needs. 4. Preference must be given to companies, especially small to medium-size companies that provide long-term **local employment** and **retain a large share of income in the region.** 5. Attention must also be paid to the **opinion of the inhabitants** where the projects take place, during planning, implementation and review. When implementing significant socio-economic, environmental developments, public must be consulted. 6. While defining developments, we **need to examine possibilities, which help us to avoid and minimize environmental damage,** and we need to choose the least risky, least hazardous materials and procedures. 7. When supporting developments, preference should be given to projects that are strengthening the **commitment to landscape values**. 8. The developments and their results (for example accessibility, employment) have to be felt locally by the largest possible segment of the local population. Therefore, the **target groups of equal opportunity policies** (women, the disabled and Roma) **have to be provided with information and have access to these programme and project components**, which have to be actively supported. During project implementation, we need to support family friendly, flexible **employment policies**.
III. Sustainable use of	9. Preference must be given to long-term material use, keeping material

Horizontal objectives	*Considerations to be enforced*
natural resources, with attention to natural cycles	flows in the cycle, and its continuous and fuller reuse. 10. With respect to **waste prevention** we have to make sure, before starting developments, how much waste will be produced and the possibilities for harmless treatment (recycling in the first place) thereof. 11. We must favour **energy saving** solutions, especially passive energy saving solutions, climate awareness (energy saving planning without the use of separate resource). 12. Priority must be give to developments, which are consciously using **renewable energy sources.** 13. We must give priority to those projects that promote the exploration and the most possible efficient use of internal regional resources. One of the positive effects is a reduction in transportation requirements. 14. Priority must be given to **careful land use and brown-field site investments**. When choosing site locations, sustainability, natural asset preservation and safety must be taken into account.
IV. Protection and preservation of assets (biological diversity, land sustainability, cultural and architectural assets)	15. We must give priority to developments and projects that **combine preservation of assets** (biological diversity, natural and landscape assets, cultural and architectural assets) **and access improvement.** 16. Emphasized attention must be given to insure environmental sustainability of sensitive macro regional systems of national importance, especially **Lake Balaton, the Tisza region and the areas along the Danube.**
V. Support **environmentally conscious attitudes**	17. The developments have to result in the strengthening of **positive or neutral environmental health balance and an environmentally conscious consumption.** 18. The demonstration of **Model projects** with regard to sustainability has to be supported.

2.2.3 EEOP's target system

EEOP's target system can be interpreted in a framework that is based on the development objectives in the accepted national medium- and long-term plans. With attention to our international environmental, social and economic processes, and taking into account our obligations and interests we have defined the following target system:

1) Improving quality of life through pollution reduction.

The **preservation, improvement and restoration** of environmental conditions to **ensure quality of life**, improvement of the health care system, ensuring healthy **environmental conditions**, reduction and elimination of health damaging, threatening effects.

2) Natural asset protection and preservation

Ecosystem and water protection, sustainable natural resource and land use, making use of the environment without excessive burden on the environment, environmental damage prevention, create natural asset protection management - paying attention to quality and quantity characteristics -, natural asset and system protection ensuring their sustainability, preservation of biosphere diversity, **attainment of environmentally safe living conditions.**

3) Preservation, economy, efficiency

Enforce environmentally sustainable points of view with regard to economic development. This requires the formation and maintenance, alongside with economic development, of a harmonic relationship between society and the environment, prevention of pollution and waste generation, popularizing products that apply low energy and low material

using technologies, increasing percentage of renewable energy use, **strengthening knowledge, consciousness and cooperation in relation with environment and nature conservation.**

Regional dimensions

A fundamental condition of Hungary's renewal is that economic and social development should be well balanced and harmonized as regards regional aspects. To this well balanced development EEOP's above mentioned three aims gives the environmental basis. So as to achieve national development aims harmonizing sectoral schemes and intentions across regions is inevitable, and local, regional intentions and opportunities, specific characteristics and problems should be taken into account as well.

According to the National Development Policy Concept that has a perspective until 2020 and is adopted by the Parliament so as to ensure well balanced regional development the **following areas should be given priority through financing and this aim will be considered when implementing the EEOP**:

- A metropolis that is competitive on the European level: Budapest and its agglomeration
- Multipolar urban network and axes generating spread of development
  - *Development of poles of growth*
  - *Axes of growth, urban connections, connected labour markets*
- Helping backward regions, areas, inner and outer peripheries, slums and countryside areas catch up
- Environmentally sensitive areas of national importance
  - *Creating Balaton region's long term competitiveness*
  - *Helping Tisza region catch up in a sustainable way*
  - *Strengthening ecological, and transport functions of the Danube*
- Strengthening cross-border cooperation
- Integrated development of countryside regions, special territorial aims of rural development
- Framework for regional development
  - *Development of regions that share their functions and cooperate with each other*
  - *Development of network cooperation between economic actors in the regions*
  - *Efficient, rational supply of public utility*

1) Improving quality of life by pollution reduction
PROGRAMME LEVEL INDICATORS
Total population of settlements with satisfactory environmental infrastructure [p] (source: HCSO)
Settlements are having satisfactory environmental infrastructure when, a) the proportion of households involved in modern waste management system is at least 80%, b) the proportion of the population having wastewater collection systems is at least 80% (in case the settlement is in an agglomeration with more than 2000 PE), c) adequate drinking water quality[19] is supplied to 100% of the inhabitants, and ALL of these conditions are fulfilled.
PRIORITY LEVEL RESULT INDICATORS – EVALUATION
Healthy and clean settlements priority axis
a) Municipal waste quantity by method of treatment (recycled or composted / thermal treatment/ Incinerated / Land filled) quantity per person [kg/p/yr] b) Proportion of households supplied with public sewerage [%] c) Number of inhabitants supplied with satisfactory quality drinking water [thousand p]
source: NSDCP, HCSO, MoEW
PRIORITY LEVEL RESULT INDICATORS – FOLLOW UP
Healthy, clean settlements priority axis
Result of EEOP operations: a) Municipal waste quantity by method of treatment (recycled or composted / thermal treatment/ Incinerated / Land filled) quantity per person [kg/p/yr] b) Number of waste management projects (core indicator 27) c) Proportion of households supplied with public sewerage [%] d) Proportion of wastewater connected to the public sewerage treated biologically [%] e) Number of inhabitants included in wastewater projects [million person] (core indicator 26) f) Number of inhabitants supplied with satisfactory quality drinking water [million p] (core indicator 25)
source: SMIS

[19] Pursuant to Government Decree No. 201/2001. (X. 25.) on the requirements of drinking water quality and control

<table>
<tr><th colspan="2">2) Protection and conservation of natural values</th></tr>
<tr><td colspan="2">PROGRAMME LEVEL INDICATORS</td></tr>
<tr><td colspan="2">a) Proportion of ecologically adequate surface water and good quality subsurface water [%],
b) Proportion and number of population with adequate flood damage protection (in line with legislation) compared to the number of those affected [%],
c) Aggregate change of nature conservation situation of habitats and species in the Annexes of the Habitat Directive [%].</td></tr>
<tr><td colspan="2">source: WFD directive report, MoEW, on the basis of the report required in Article 17 of the Directive</td></tr>
<tr><td colspan="2">PRIORITÁS SZINTŰ EREDMÉNY INDIKÁTOROK - ÉRTÉKELÉS</td></tr>
<tr><td>Vizeink jó kezelése prioritási tengely</td><td>Természeti értékeink jó kezelése prioritási tengely</td></tr>
<tr><td>a) Proportion of ecologically adequate surface water and good quality subsurface water [%],
b) Proportion and number of population with adequate flood damage protection (in line with legislation) compared to the number of those affected [%].</td><td>a) Aggregate change of nature conservation situation of habitats and species in the Annexes of the Habitat Directive[%].</td></tr>
<tr><td>source: MoEW, WFD report</td><td>source: according to Article 17 of the Directive</td></tr>
<tr><td colspan="2">PRIORITY LEVEL RESULT INDICATORS – FOLLOW-UP</td></tr>
<tr><td>Wise management of waters priority axis</td><td>Wise management of natural assets priority axis</td></tr>
<tr><td>As a result of EEOP operation

a) Proportion and number of population with adequate flood damage protection (in line with legislation) compared to the number of those affected [%] (core indicator 32),
b) Number of flood prevention projects (core indicator 31),
c) Changes in the ecological state of water bodies requiring priority treatment, [%],
d) Number of recultivated landfills [nb],
e) Volume of contaminated geological medium that has been recultivated (including underground water) [thousand m3]</td><td>As a result of EEOP operation

a) Extension of areas affected by habitat restoration and development [ha] (core indicator 29),
b) Extension of areas (with infrastructural development) satisfying the conditions of natural forest and agricultural management [ha].</td></tr>
<tr><td>source: SMIS</td><td>source: SMIS</td></tr>
</table>

3) Prevention economy, efficiency		
PROGRAMME LEVEL INDICATORS		
a) Proportion of renewable energy within total electricity consumption [%], b) Energy intensity (energy consumption per GDP unit) [kgoe/1000 Euro]		
source: Energia Központ Kht, EUROSTAT		
PRIORITY LEVEL RESULT INDICATORS – EVALUATION		
Increase of the renewable energy consumption priority axis	***Efficient energy use priority axis***	***Promotion of sustainable lifestyle and consumption patterns priority axis***
a) Proportion of renewable energy within total electricity consumption [%]	a) Energy intensity (energy consumption per GDP unit) [kgoe/1000 Euro]	a) Percentage of committed environmentalists according to EUROBAROMETER[20] [%]
source: KSH, Energia Központ Kht	source: EUROSTAT	source: EUROBAROMETER
PRIORITY LEVEL RESULT INDICATORS. – FOLLOW-UP		
Increase of the renewable energy consumption priority axis	***Efficient energy use priority axis***	***Promotion of sustainable lifestyle and production patterns priority axis***
EEOP's operation results: a) Renewable energy source based electricity production [GWh/yr] (core indicator 24) b) Renewable energy consumption [PJ/yr] b) Number of renewable energy projects (core indicator 23)	EEOP's operation results: a) Energy resources saved through energy efficiency [PJ/yr]	EEOP's operation results: a) Number of people reached by campaigns and model projects according to the types of activity [thousand p.]
c) Reduction in greenhouse gas emissions [kt/yr] (core indicator 30)		
source: SMIS	source: SMIS	source: SMIS

The technical indicators, the target figures, and the (non-technical) indicators related to the implementation of EEOP are described in detail in annex 8.3.

[20] „Environmental attitudes in the European Union" report: http://ec.europa.eu/environment/barometer/index.htm according to this report, *committed" environmentalists* are people who sometimes or often make efforts for their environment and they are convinced that their efforts are effective.

2.2.4 Priority axes connected to objectives

Healthy and clean settlements (to accomplish Objective 1 of EEOP's target system)
Environmental developments that need to be carried out in settlements are in the area of waste management (establishment of waste management systems, dissemination of selective waste collection, and treatment of special waste streams); municipal wastewater treatment and the improvement of drinking water quality. The developments affect, or may affect in the future, the total population of Hungary. In more than 95% of the cases, the main target is to fulfil the EU obligatory norms of clean, safe settlements.

Wise management of waters (to accomplish Objective 2 of EEOP's target system)
The construction of the Danube flood protection system will be accomplished and the implementation of the Vásárhelyi Re-Development Plan (VRDP) will continue, flood protection of other water courses will be implemented, and the development of other flood protection systems owned by the municipalities will also be carried out. Measures of river basin management and integrated water use cover, among others, the measures required by WFD to reach good conditions of waters (monitoring, protecting water quality and quantity). Water protection developments and measures preventing the further contamination of sub-surface waters will be realised to reach good water conditions by 2015 (diagnostic and safety operations as part of the protection of water bases, furthermore, re-cultivation arrangements and elimination of environmental damages).

Wise management of our natural assets (to accomplish Objective 2 of EEOP's target system)
Nature conservation actions include nature conservation development of NATURA 2000 and other protected areas (species and habitat protection, protection of inanimate natural assets, forest schools, mitigation of the landscape damaging effects of the railway system, and agriculture and forest management with a view to habitats protection). These developments affect, or may affect, 20% of the territory of the country and the objective is to protect and preserve our rich biodiversity.

Increased use of renewable energy sources (to accomplish Objective 3 of EEOP'S target system)
A key role of the New Hungary Development Plan is to influence the energy source structure: to promote the move from traditional energy sources towards renewable energy sources. The impact of the increased consumption of renewable energy has high significance also from the point of view of the structural changes in agriculture and forestry, and also from the aspect of improving our competitiveness.

More efficient energy use (To accomplish Objective 3 EEOP'S target system)
Besides modifying the fuel structure, an important task is to create a system which could help us save energy and set up a system for efficient energy consumption, both in the consumption and the production sectors. To fulfil the obligations to save energy under Directive 2006/32/EC, contribution by EEOP is needed.. To reach 1% energy savings per year, EEOP operations have to be supplemented with measures of other OPs and national programmes.

Promotion of sustainable lifestyle and consumption patterns (To accomplish Objective 3 of EEOP's target system)
Giving priority to environmental considerations (with the idea of saving materials, the prevention of waste generation and increased use of secondary raw materials; energy saving; prevention of further damage to human environment and nature conservation assets) can lead

to increased economic efficiency in several areas. These areas include: organisation of private and community production and services based on „industrial ecosystems", environment protection industry, the introduction of the best possible environmentally friendly techniques and technologies, and shaping environmental attitudes which leads to conscious and saving orientated consumption habits. An important task is to create the conditions for environmentally friendly lifestyles and sustainable consumption. These developments affect or may affect almost all municipality, their institutions and most of the small and medium-size companies and NGOs.

2.2.5 Justification of EEOP priorities on the basis of the most important planning and strategy documents

The Community Strategic Guidelines (CSG) defines developments to be supported in the framework of cohesion policy. In accordance with CSG's guideline on environment (guideline 4.1.) Europe and its regions have to be made more attractive in terms of investment and employment by *strengthening cooperation between environment protection and growth and also by less intensive use of traditional energy sources*. Incorporation of environmental aspects to serve economic growth in the long-term means development of prevention type, but these developments will only produce the desired effects if "end of pipe" solutions for environmental damage prevention are sufficiently disseminated in the operation of society and economy. In preventive environment protection, the fulfilment of our obligations undertaken in the Accession Treaty is the basis for starting to ensure the sustainable use of the environment by strengthening the environmentally efficient production and consumption structures. EEOP strategy and the identification of priorities are built on this principle: our main objective is the development of the missing environmental infrastructure, and in addition to this, in the spirit of our long-term environmental strategy, we are striving to give an impulse to the dissemination of preventative environmental solutions in the fields of production and consumption.

In line with the Community Strategy Guideline, NHDP (NSRK) also describes the horizontal consideration of environmental aspects as a necessary condition to ensure lasting growth and expansion of employment. Protection and careful development of our surrounding environmental and natural systems is one of the fundamental conditions to the improvement of human quality of life and at the same time a decisive factor of sustainable economic and social development. At the same time, EEOP also helps directly to attain the fundamental NHDP (NSRK) targets, since association of environmental developments to several production and service sectors also improves these sectors' performance and improves employment opportunities.

EEOP actions are in compliance with the provisions laid down in the European Parliament and Council Regulation 1080/2006/EC on the European Regional Development Fund and Council Regulation 1084/2006/EC establishing the Cohesion Fund. While drafting the Environmental and Energy Operational Programme we relied on several Hungarian and European Union rules of law, plans and programme documents.[21]

[21] Resolution of the Parliament No. 96/2005. (XII. 25.) on the National Development Policy; Resolution of the Parliament No. 97/2005. (XII. 25.) on the national regional development concept; Resolution of the Parliament No. 132/2003. (XII. 11.) on the National Environment Protection Programme between 2003-2008, etc.

The following table shows EEOP's priorities as defined in NHDP (NSRK) and highlights their connection to the major planning and strategy documents.

„Environmental and energy related development" priority of the National Strategic Reference Framework (NSRF)					
Overall NSRF objective describing priority „environmental and energy related development"	The „environment and energy related development " priority helps to attain the objective of permanent growth by reducing negative environmental effects, by the preservation of the natural environment, which is the basis of growth, and by the integrated approach to prevention, efficiency and complex problems.				
Intervention groups defined in NSRF	Environment Improving Developments				Environmentally friendly energy developments
Development areas defined in NSRF (in line with EEOP priority axes)	**Healthy and clean settlements**	**Wise management of our waters**	**Wise management of natural assets**	**Promotion of sustainable lifestyle and consumption patterns**	**Increased use of renewable energy sources *and* increased energy efficiency**
Environmental developments identified in NSRF (In line with the developments in EEOP, differences marked.)	- waste management (complex waste treatment systems, selective waste treatment, special waste streams, re-cultivation); - municipal wastewater treatment; - water base protection[22] and improvement of drinking water quality; - inner area and outer area water regulation[23];	- building up the Danube flood protection system - VRDP implementation in the Tisza region;. - investment in various river flood protection; - Investment in municipality owned inland water and flood protection systems.[24]	- species and habitats protection; - the forest schools; - reducing landscape deterioration due to railway operation; - agro-forestry management with a habitat preservation focus; - preservation of biodiversity;	- dissemination and support of sustainable lifestyle and consumer habits, activity patterns, model projects; - shaping environmental attitudes.	-gradual investment into and modernization of local energy production using renewable energy; - expansion of the use of plant based fuels; - increasing energy security; - supporting R&D [25]; - Modernization of the supply side of utility-

[22] Contained in EEOP'S priority axis "good treatment of our waters"
[23] contained in ROPs

	. elimination of environmental damages	- requirements in WDF (monitoring, water quality and quantity protection).	- sustaining and popularising traditional modes of land use and farming		supplied district heating, gas and electricity - Energy efficiency developments of companies, owned by providers and municipalities. -modernization of public and residential buildings for energy saving purposes[26]; - introduction of energy saving technologies; - development of local systems using primary energy.

Connection of EEOP priorities with Hungarian and international planning documents					
Community Strategic Guidelines for growth and employment (CSG) 2007–2013	GUIDELINE 1.1.: To make Europe and its regions more attractive for investment and work 1.1.2. Strengthening cooperation between environment protection and growth 1.1.3. Answer to the questions of intensive use of traditional energy sources in Europe.				
	- Fulfilling significant infrastructure investment needs to enable Member States to fulfil environment protection provisions in the area of water, waste and air quality protection. - Ensuring that there are favourable circumstances for companies and highly qualified staff.	- Undertaking risk prevention arrangements through further development of natural resources, more specific research, better ICT application and through more innovative administration policies	- Investment into infrastructure in order to enable Member States to fulfil legal requirements to protect the environment and species - Land use reducing urban expansion, rehabilitation of physical environment	-commitment towards risk-prevention actions, efficient management of natural resources, goal oriented research, enhancement of ICT tools, innovative policies in public administration - e.g. through preventive actions	- Supporting investments that contribute to the fulfilment of EU's Kyoto obligations - Supporting projects that promote energy efficiency. - Supporting the development of renewable and alternative technologies (wind, solar energy, biomass)

[24] Development of Inland water system contained in ROPs
[25] contained in EDOP
[26] contained in ROP

<table>
<tr><th colspan="6">Connection between EEOP priorities and Hungarian and international strategic documents</th></tr>
<tr><td>NEPP 2003 – 2008
(AP= Action programme)</td><td>3.3 Environmental health and food safety AP
3.7 Protection of our waters and sustainable use AP
3.8 Waste management AP</td><td></td><td>3.5 Biological diversity protection and landscape conservation AP</td><td>3.1 Increasing environmental consciousness AP
3.9 Environmental safety AP</td><td>3.2 Climate change AP
3.6 Countryside environmental quality, area and land use AP (in connection with the actions of NHRDSP)</td></tr>
<tr><td></td><td colspan="3">3.6 Rural environmental quality, area and land use AP (in connection with the actions of NHRDSP)
3.7 water protection and sustainable use AP</td><td></td><td></td></tr>
<tr><td>EU Environment Protection Action Programme 2001–2010 (EU VI. EAP)</td><td colspan="5">Programme objectives (article 1)
The objectives are fulfilling the environmental objectives the Community intends to achieve in the following areas:
Climate change, nature conservation and biodiversity, environmental-health, quality of life, natural resources and waste management</td></tr>
<tr><td></td><td>-high level protection of surface and subsurface water, promotion of pollution prevention and sustainable water use (Article 7)

- Implement solid-waste strategy (8. article)</td><td>- Ensuring the implementation of WDF in order to attain good ecological, chemical and quantitative condition of waters, and sustainable water management (Article 6)</td><td>- establishing the Natura 2000 network and provision of the necessary conditions for its operation and for the protection of species contained in the Bird and Habitat Directives outside of the Natura 2000 areas,
(6. article)</td><td>- Development of sustainable resource management and use, development of waste management and prevention (Article 8)</td><td>- promoting renewable energy use
(Arrticle 5)
- improving energy efficiency
(Article 5)</td></tr>
</table>

Integrated guidelines for growth and employment 2005-2008 (IGGJ)	Guideline 11: Promotion of sustainable energy use, strengthening synergies between environment protection and growth			
		- arrangements to stop biodiversity reduction and more rational use of resources		- In the interest of competitive and sustainable development, increase energy efficiency
Revised LISBON national action programme for growth and employment (2005–2008) /October 2006 /	Guideline 9: Promote use and spread of information and communication technology, information society development Guideline 11: Promote sustainable resource use, strengthen synergies between environment protection and growth			
	- Strengthen environmentally friendly waste management. - Prevention, reduction of hazardousness, recycling, dissemination of modern methods of treatment, modernize or close obsolete methods (establishments)		- Strengthen environmental awareness - promote the application of ICT tools and services	Energy saving and energy efficiency - Use of renewable energy resources

Legislation supporting EEOP priorities					
Cohesion Fund legislation (EEOP priority axes by financing funds)	*Council Regulation 1084/2006/EC on establishing the Cohesion Fund (Article 2):* -Environment protection among environment protection political priorities as defined in the environmental protection action programme and policy	*Council Regulation, 1084/2006/EC on establishing the Cohesion Fund (Article 2):* -Environment protection among environment protection political priorities as defined in the environmental protection action programme and policy	*EP and Council Regulation 1080/2006/EC on ERDF (Article I. / 4.):* - improve biological diversity and nature conservation, including investment into NATURA 2000 areas	*EP and Council Regulation 1080/2006/EC on ERDF (Article I. / 4.):* - integrated prevention and restrain of environmental pollution;	*EP and Council Regulation 1080/2006/EC on ERDF (Article I. / 4.):* - investment in energy, promoting the development of renewable energy; *Council Regulation 1084/2006/Econ establishing the Cohesion Funds (Article 2):* - areas related to sustainable development, with obvious advantages for the environment, for example, energy efficiency and renewable energies
Justification of EEOP priorities, based on ex ante evaluation					

Findings of the EEOP ex ante evaluation	The three emphasized areas (waste management, wastewater treatment, improvement of drinking water quality) are serving the accomplishment of EU directives also appearing in the Hungarian environment policy documents.	EU directives are emphasizing the importance of risk-preventive arrangements, along which EEOP identified the following developments: flood protection, damage elimination and water base protection. An important priority of EU and Hungarian environmental policy is the accomplishment of the WFD.	The EU regulation on Structural Funds and also its environment protection programme support arrangements to accomplish the preservation of biodiversity. Within this, CSG prefers primarily investment into infrastructure that EEOP actions are adjusted to. This area is a high priority of Hungarian environmental policy.	EU environment protection policy urges the support of sustainable consumption on the EU level, while on national level, the Lisbon Action Programme defines it also as a main priority of environmental development. E-environment protection, as one type of ICT is being named by EU and Hungarian eco-political documents as an important task for the future	Promoting renewable energy and increasing energy efficiency are contained in all applicable EU and Hungarian regulations, programmes and guidelines. The documents presented are sufficient justification for the implementation of these developments.

3. PRIORITY AXES

3.1 Healthy and clean settlements priority axis

The objective of the healthy, clean settlement priority axis is the improvement of environmental conditions of sustainable urban development and components of environmental settlement conditions, to ensure satisfactory quality of life, a healthy environment and better circumstances for human life. To reach these objectives, the priority axis – using the opportunities of **comprehensive environmental management and planning**, and applying **cost-efficient solutions** – is concentrated on implementing actions in urban environment protection public services, environment protection infrastructure developments and direct environment protection and damage prevention.

Obligations on developments undertaken in the Accession Treaty give a heavy burden to the Hungarian State and to local authorities in the period 2007-2013. Funds of the Healthy and clean settlements priority axis support primarily this financial burden. According to preliminary estimates funds available in this priority axis do not cover fully the costs of the objectives in wastewater handling, drinking water quality improvement and waste management. Hungary will cover this financial gap from governmental sources in the period after 2010.

Waste management, wastewater treatment and drinking water quality projects are supported in this priority axis, however, a maximum of 20% of the priority's budget can be allocated to waste management.

Within the framework of the priority axis the future developments will be supported by the **Cohesion Fund** to reach the objectives of „Convergence", and **the entire territory of our country** is eligible for support.

3.1.1 Waste management

Intervention logic

In accordance with the principles laid down in the European Parliament and Commission Directive 2006/12/EC (of 5 April, 2006.) and in the Act No. 43 of year 2000 on Waste Management, and in the interest of establishing a waste management hierarchy, the strategy was defined on the following intervention logic in the „Healthy and clean settlements" priority axis to ensure waste management hierarchy.

In accordance with the regulations in force and in the interest of health protection of the population of, **waste management conditions have to be created at a similar level in the entire country, adapted to local conditions and with differentiated technology**.

The waste management priorities (prevention, re-use and recycling, and environmentally friendly treatment) can be enforced through waste management systems based on **modern, logistically organized, selective waste treatment.** At least 5% of the value of every single waste treatment or disposal development – based on lessons learned from earlier ISPA

projects - is used for **implementing developments of waste prevention**. For this purpose attention is being focused on pamphlets influencing consumer habits, information work, promoting solid waste prevention among the population and involving them in selective waste treatment programmes.

Our goal is to have in place municipal waste management systems in the whole of Hungary which, by enforcing the principle of cost efficiency:

- ensure separate **collection and further treatment of recyclable** (especially paper, glass, metal, plastic, including packaging material), and **hazardous waste** components (batteries, electronic wastes, medicines, etc.);
- minimise landfilling of biodegradable organic waste by propagating domestic and local **composting**, as well as by implementing **on-site bio-waste treatment** (composting, biogas production, mechanical-biological pre-treatment and stabilization);.
- realise disposal of the remaining waste in **safe incinerating facilities or regional landfills.**

A national level alternative-analysis was carried out to support the EEOP and the municipal solid waste management strategy, which meant a common assessment of waste handling goals and waste handling methods. The first principle of the analysis was that waste handling objectives focus on the EU regulations as the available sources are scarce. The other principle was that all the necessary capacities to accomplish the 2016 obligations should be built until 2015. In order to create the basis of support, the strategy (approved and verified by the Government) will be sent to the Committee until the middle of June 2007.

Alternatives differ in the method of organic waste handling only, the handling of all other types of waste are determined by directives, existing capacities, and cost-effectiveness.

- In case of obligations of the producers municipal solid waste management should provide selective collection for the producers. In this case this means the full realization of selective collection systems on efficiency basis. The costs connected to the accomplishment of the producers obligations can be imposed on the producers.
- Selective collection of non-packaging paper waste can be more efficiently accomplished by selective collection systems built because of obligations of the producers, than the mixed collection. Thus the objective is that the same selective collection system can collect the non-packaging paper waste to an extent necessary to fulfil the objectives of the organic waste.

Accordingly, the following alternatives were generated:

- Development primarily of composting, complemented by energetic utilization after mechanical-biological pre-handling (MBH) to an extent necessary to fulfil directives;
- Development primarily of MBH and energetic utilization: building capacity of MBH and joining energetic utilization to an extent which is necessary to fulfil deposition directives, along with the composting capacities built until 2009;
- Modified development strategy: composting has a bit lower proportion compared to MBH and following energetic utilization, based on cost effectiveness. Another difference is that the volumes handled are in accordance with EU obligations on yearly basis.

With regard to that all the three alternatives have the same waste handling objective, the best alternative is selected on cost basis (lowest investment and operation). According to the analysis the modified development strategy is the best alternative.

The technical-financial assumptions for the investment and operation applied in the analysis determine the cost effective solutions of the national goals. These technical-financial assumptions are to be determined in the action plans (eligible activities, selection criteria, etc.). Measures securing the national goals have to be applied primarily by conditions determined and controlled in the support contract, and with the necessary adjustments in legislation.

In case of **waste streams** (construction-demolition, animal origin and medical waste) affecting local governments and **requiring special treatment,** compliance with material- and waste-specific treatment rules must be also guaranteed, apart from general regulations on these waste types. This objective can be achieved through the establishment of treatment - including collection, transportation, pre-treatment, recovery and disposal - systems, separate from other wastes, and creation of the conditions to establish such a system. Support must be given for the establishment of collecting systems, waste recovery and the reduction of the quantity and hazard of hazardous components.

In order to comply with European Union expectations regarding packaging, electric and electronic equipment as well as waste battery, the greatest possible quantity of the waste generated by the population is to be collected and treated separately. Market processes following predictable tendencies will solve this problem by the set deadline in accordance with legal regulation.

In the implementation of the intervention, projects will be planned and realised in line with the **urban solid waste management development strategy.**

The description of the **legal environment,** which is **the justification for the intervention and** a framework for the development, can be found in section 8.2.1 of the Annex.

Indicative list of planned types of operations

In order to realise modern municipal waste management and meet EU requirements, the following are necessary in addition to the complex regional systems already completed or under construction:

1. **Prevention of solid waste generation (contained under 3.6 priority axis of promoting sustainable lifestyle and consumption habits)**

2. **Promotion of municipal waste recycling**

   a) Selective collection, introduction and modernization of collection and pre-treatment systems and methods, (collection and pre-treatment of special waste streams, [packaging waste, biodegradable organic waste, batteries and car batteries, tyres, electric and electronic equipment, construction and demolition waste, and other hazardous wastes which can be treated selectively])
   b) Treatment of waste of animal origin (by-products) belongs to the responsibility of municipalities. (Development of collection and gathering and pre-treatment

systems, their formation and modernization, harmonized with present and planned treatment capacities.)

c) Territorial and technology complementing investments of regional, municipal waste treatment systems (In harmony with existing and planned treatment capacity systems - except waste disposal establishments – establishment and expansion of the system elements of waste management, and the involvement of settlements that now belong to the technical-economic zone of gravity, but were formerly left out of the system. The technological complementing first of all covers solid waste collection, pre-treatment and recovery connected to system operation. For example: implementation of selective waste collection, mechanical-biological pre-treatment, production and utilisation of bio-gas, collection and utilisation of landfill-gas and house composting.
d) Establishment of incinerators which can serve waste management units of more than one region, able to burn new and left-over municipal waste for electricity production and thermal recovery purpose, and treat incineration remnants.

Indicators

According to the indicator table Objective 1 and section 8.3. of the Annex.

3.1.2 Wastewater treatment

Intervention logic

The implementation of the National Municipal Wastewater Collection and Treatment Programme must be continued, as well as the **construction** of **wastewater collection and treatment systems and facilities** – including works for the treatment of liquid waste – the **extension and modernization** of existing **wastewater treatment and wastewater collection systems**, the **development of wastewater sludge treatment and recycling** and, in the framework of diverse and comprehensive technical projects, **semi-natural wastewater treatment** as well as the application of **cost-effective and environmentally friendly individual facilities for unique wastewater disposal** must be started where sewerage is not justified by environmental or economical reasons.

At settlements or part of settlements **in highly vulnerable areas without a sewer system,** where professional, individual wastewater disposal is not an option, transportation of adequate liquid waste (on road), treatment and development of utilisation must be ensured. This enables every citizen in the country to have access to an apartment with every modern convenience. The generation of municipal liquid waste must be reduced as much as possible, and reception of the remaining fraction at wastewater treatment plant must be ensured.

In case of some projects or at settlements, parts of settlements, the technical interventions (individual wastewater disposal or sewerage, traditional or semi-natural wastewater treatment), which have to be implemented must be decided on the basis of economic and environmental sensitivity analysis. In this way some projects may include sewerage, individual wastewater disposal, and, sometimes municipal liquid waste treatment elements. In addition to traditional technical solutions of wastewater treatment, the possibility of semi-natural wastewater treatment is also to be considered. Selection among options – as long as they comply with legal regulations – is based on long-term cost efficiency. The development

of the wastewater collection and treatment systems has to be in harmony with other OP investments (for example, development of rainwater collection systems), to avoid extra costs caused by repeated operations in the same area (for example re-pavement).

The description of the **legal environment,** which is a framework for future development and its reasoning, can be found in section 8.2.2. of the Annex.

Indicative list of planned types of operations

Eligible activities necessary to attain the outlined goals for agglomerations over 2000 PE:

1. Wastewater collection, treatment and municipal liquid waste treatment, disposal

a) Construction of new wastewater collection systems / wastewater treatment plants;
b) The extension of existing wastewater collection systems / wastewater treatment plants, including network reconstruction connected to building and development (max. 5%) and implementation of semi-natural wastewater treatment;
c) As part of complex projects the development of environmentally friendly, cost efficient, professional, unique wastewater treatment solutions in settlements or parts thereof, which are not connected to the network for economic reasons;
d) Implementation of developments aimed at creating the conditions for reception, transportation, and treatment/disposal of municipal liquid waste (e.g., works for receiving solid municipal waste, waste collecting vehicle);
e) Procurement in connection with operation of wastewater collection systems/wastewater treatment plants (e.g. sewerage cleaning vehicle).

2. Sludge treatment, utilization

f) Regional and urban investments aimed at utilising wastewater sludge as renewable source in connection with the construction/extension of wastewater treatment plants
g) Construction of facilities for sludge treatment at wastewater treatment plants, or establishment of regional wastewater sludge utilisation plants;
h) Investment into wastewater sludge utilization in agriculture.

3. Closure and re-cultivation of municipal liquid waste storage sites and sludge ponds

Indicators

In line with the indicator table of Objective 1 and section 8.3. in the Annex.

3.1.3 Improvement of drinking water quality

Intervention logic

We need to continue the National Drinking Water Improvement Programme started in 2001. We have to ensure healthy drinking supply for the inhabitants which fulfils all requirements, reduce regional differences in drinking water quality and improve water level and safety of supply.
Individual projects, certain settlements or parts thereof and future technical interventions (building out water treatment technology, switching to other waterbases, switching to other water supply systems, and combined solutions) have to be decided on by the result of comprehensive planning for selecting the overall most favourable solutions. The decision between the different alternatives is based on long term, cost efficiency considerations. In case efficient intervention requires that the drinking water system should be partly reconstructed, then these necessary activities are also part of the drinking water quality improvement process.

The description of the **legal environment,** which is a framework of the future development and its justification, can be found in section 8.2.3. of the Appendix.

Indicative list of planned types of operations

Activities to be supported so as to reach the outlined objectives are as follows: building out water treatment technology, switching to other water bases, switching to other water supply systems, and combined solutions, and choosing the overall most favourable solution for all of the settlements included in the programme based on careful planning work of combined solutions of the preparation phase.

1) Drinking water treatment technologies

In case where the application of a certain water treatment technology (i.e. expanding an earlier or creating a new technology) is found to be the overall most advantageous solution, it has to be ensured that besides reducing the chosen parameters (boron, fluoride, nitrate, arsenic, ammonium) below limit values, the quality of the provided drinking water after the intervention should comply with all regulations defined by directives and government decree.

2) Switching to other water bases

In certain settlements and settlement groups the possibility occurs for abstraction of water in another way, for building wells on another water base. This solution can only be chosen if it turns out to be the most advantageous even in the long run. .

3) Joining other water supply systems, establishment of regional systems

The comparison between different alternatives can lead to the conclusion that the optimal solution could be the abandonment of local water bases and water treatment technology and simultaneously connecting to the regional water works or building a new regional water works.

4) Combinations of the solutions above

During the preparation of drinking water quality interventions, in complex situations the most adequate solution can sometimes be found in a combination of the solutions above.

5) Reconstruction of drinking water pipeline system

The reconstruction of the drinking water pipeline system can be part of the investments only to such degree that means an inevitable development in order to ensure, in the long term, the successful improvement of drinking water quality due to the investments.

Indicators

In line with indicator table of Objective 1 and section 8.3 of Annex.

3.2 Wise management of waters priority axis

The goal of this priority axis is to ensure that social-economic development keeps water protection on sub-river basin areas in the focus of attention. The basis of integrated river basin management is a **system approach**, the development of water and land uses with ecological systems can be coordinated and the necessary measures can be planned and implemented only on river basin regional level. The developments under this priority axis (establishment of a proper flood control practice in the first place) can be taken as preparations for global climate change, as according to the forecasts there will be more precipitation than normal in the future, and the distribution of the precipitation in our region may be described by extremities, meaning that we can expect more intense rain, but more rarely. The main objective is – besides preserving flood safety – to retain waters and thus collect waters to be used during times of low precipitation. To reach the above mentioned goals, we need proper land use and complex water management.

Based on the Water Framework Directive 2000/60/EC (WFD) of the European Council and the Parliament coming into effect on December 22, 2000 water management plan is to be drafted for the EU river basin districts and subsystems. In Hungary there are 4 sub-river basins (Danube, Tisza, Dráva and Balaton). These sub-river basins include 17 subunits, river basin management plans are to be drafted for each according to methods defined by the framework directive, and the elaborated action programmes are their organic parts. **According to WFD deterioration of water status is to be prevented and 'good status' of European waters is to be achieved until 2015.** The implementation laws of WFD – among others – set the state, local government and economic management tasks necessary to achieve WFD objectives. The goal of this priority axis is to meet the obligation undertaken taking into due consideration the deadlines set in WFD: life and property security, implementation of river basin development serving surface and groundwater protection, which promote land and landscape use adjusted to sub-regional water cycles.

Regarding the financial aspects of the priority axis, preliminary estimates show that funds – taking into calculating also the ROPs – will fully cover the costs of the closure and recultivation of landfills. Costs for the objectives determined in the "Acquis" concerning water protection cannot be estimated at the time of the Operative Programme preparation due to the lack of detailed legislation, surveys and plans, but potentially exceed the funds

available in the priority axis. Hungary will provide further sources from the budget to finance this gap in the period 2007-2013 depending on the available sources.

Cohesion Fund provides aids for developments implemented in the framework of the priority axis to achieve the 'Convergence' objective; the whole territory **of the country** is eligible for this aid.

3.2.1 Formation of good flood protection practices

Intervention logic

The primary objective of this intervention is to reduce the risk of flooding. In this case, the reduction of risk means the reduction of the possibility of a flood occurrence of a given gravity; therefore it also reduces the possibility of severe damages caused in human health, the environment or in economic activities. Concerning society and the economy the changes have to create better and safer conditions than present and long term management possibilities in the affected areas, improving these areas' strengths, in order to retain their population. The objective of the **EU Directive on Floods** which will be accepted in 2007 is the reduction of flood risks affecting human health, environment and economic activity, hence the increase of flood safety, the prevention and handling of natural disasters.

In the framework of the Vásárhelyi Re-Development Plan (VRDP), rehabilitation of the water transportation in the main riverbed **of Tisza valley** is to be continued by adequate flood plain regulation, building flood-reservoir system, strengthening the critical sections in the Tisza valley flood prevention system, rehabilitation of flood-plain water system and developing landscape management systems.

- **Target state to be achieved by the development:** Reduced level of ice free flooding by at least 1.0 meter compared with the 1.0 meter higher than historical flood level, along the Tisza. The control of floods threatening with disasters has to be complemented by the reactivation of flood plains through regulated water drainage.
- **The main objective of the Vásárhelyi Development Plan:** The planning of necessary interventions of flood protection development and operations of flood reservoirs has to be made in harmony with the conservation and development of ecological systems. The development of Tisza valley flood protection system serves as protection of people and assets against flood waters, and it is integrated in the ecological development of Tisza, its tributaries and their flood plains. Besides this, the VRDP has to ensure new opportunities for rural development in the Tisza Plain.

In the framework of the **Development of flood protection system along the Danube**, building of the line of protection has to be started on the inadequately protected sections so as to reach the prescribed level, furthermore, sufficient protection of valuable and densely populated settlements and parts of settlements on low-lying areas without flood prevention works are to be ensured. In the framework of the project our goal is to accomplish prescribed flood protection safety – according to EU recommendations on the enforcement of „Rivers Need Space" principle and serving environmental and nature conservation interests as well. Certain parts of the flood prevention works will be covered by solid pavement to make the riverside and protection barriers more accessible for maintenance work.

The expected project result, in the first step, is the achievement of the prescribed flood protection safety in the most critical sections of the line of protection. The length of developed and newly built dikes in the Danube project can total to a maximum of 180 km.

In addition to the two large rivers, development of state-owned flood prevention works is necessary also on other watercourses (e.g. Körös valley, Alsó-Dráva, Zagyva-Tarna, Hernád valley). It is the expansion of the Danube and Tisza programme to their tributaries. The basic development objective is the satisfactory building up of flood protection establishments of the affected rivers according to presently prevailing regulations. This mainly includes flood protection actions that can strengthen the system's weak points. The implementation of the task started with an overall review of technically reasonable developments. The need for urgent action is being defined by a survey on the most risky flood protection establishments. The development first of all includes building new dikes, strengthening the existing ones, increasing their cross-section size horizontally, heightening them, paving the tops of dikes and dike replacement.

Close to two thirds (65%) of **municipal protection works** are not in satisfactory condition for protection, and need to be developed and strengthened. There is another significant group of threatened settlements that have not built up protection works and their surrounding „high bank protection line" is not safe anymore. Presently, there are 49 municipality owned, first level flood protection works recorded, with a total length of 205 km, which is exactly 5% of what the government owns.

The description of the **legal environment,** which is a framework for future development and its justification, can be found in section 8.2.4. of the Annex.

Indicative list of planned types of operations

- **Implementation of the VRDP objectives**
- **Flood protection development of the Danube: according to Annex 1 of** the Ministry of Transport, Telecommunication and Water Management (MoTTWM) Decree No.10/1997. (VII. 17.) on the development of identified flood protection lines.
- **Development of other flood protection lines**: Annex 1 of the MoTTWM Decree No. 10/1997. (VII. 17.) on the development of identified flood protection lines.
- **Development of municipal owned flood protection lines**: is applicable to settlements belonging to widening out areas affected by flood protection line sections identified in Annex 1 of the MoTTWM Decree No. 10/1997. (VII. 17.).

Indicators

In line with indicator table of Objective 1 and section 8.3. in Annex.

3.2.2 Complex river catchment development

Intervention logic

The status of Hungarian water bodies (lakes and watercourses) was surveyed on the basis of WFD, their good ecological status/potential is to be achieved by 2015. The measures,

particularly pollution reducing measures are to realize this goal focusing on **developments on high importance water bodies** (Balaton, Little Balaton, Velence Lake, Fertő Lake, Tisza Lake, Upper Danube, water replacement on flood plains and the safe side of the Szigetköz, Ráckeve-Soroksár Danube section).

Preparation and implementation of the necessary actions to protect water quality in lakes include building or renewal of filtering meadows, reservoirs, alluvial deposit catchers from incoming rivers for reducing nutrient pollution; reconstruction of flood protection works; research activities connected to lake regulations and reed management; safe drainage of excess water; aesthetic appearance of inland areas and to preserve the ecological potential of the lakes.

On the upper Danube, the task is to implement flood plain and safe side water recharge in the area of Szigetköz, efficient elimination of inland inundation, rehabilitation of tributary systems, and the improvement of ecological potential and the rehabilitation of water level on the Moson-Danube, together with the development of the flood protection system and the ecological corridor of the Lajta.

The improvement of the water quality of the Ráckeve-Soroksár Danube section can be implemented by the elimination of point source and diffuse polluters, removal of riverbed sediment to the necessary degree, and the rehabilitation of the tributary system.

Prevention of further pollution of the subsurface water is also a field of action of high importance. Differentiated technological measures have to be taken in the area of local waterbases, adapting them to the local circumstances. The protection process is embedded in the framework of the Government Decree No. 123/1997 (VII. 18.) „ on the protection of waterbases, prospective waterbases for drinking water and that of water works for drinking water supply". As regards the diagnostic phase, a detailed guide on the methodology is available .

The objective of **water base protection for drinking water** supply is to prevent pollutions of human origin and to preserve the natural (good) drinking water quality conditions in the proximity of water works for drinking water supply or in territories of water bases to be used in the future. In the framework of the diagnostic phase of the „ Water Base Protection Programme for Drinking Water Supply", started in 1995, the condition of vulnerable operating and future water bases has to be examined. A monitoring system has to be built to survey water resources in the area of water abstraction, the protection areas around the water bases and cost-efficient measures have to be defined. In the phase of insuring safety of water bases the investments will satisfy the requirement of long term efficiency and the need for economic solution for protection. Finally, in the phase of maintaining safety of water bases the task is the planned maintenance of water works and keeping the water base monitoring system operational.

From 2007 a three level monitoring system developed on the basis of WFD typology and on preliminary risk assessment will work. The selection of sampling sites and components to be examined will provide information necessary to evaluate the status of river basins. The monitoring system will be the basis of the action programmes necessary to achieve good ecological and chemical status and will control their efficiency. Both the surface and the subsurface water monitoring system should be further developed.

The monitoring of surface waters is to be developed in the case of water bodies with smaller river basin area and those without or with irregularly monitored ones. In case of lakes quantitative measurements must involve all lakes registered as surface water bodies.

In the monitoring network of groundwater bodies and along small watercourses the number of wells monitoring shallow groundwater necessary for quantitative monitoring has to be increased, in order to protect land ecosystems, which depend on groundwater. In case of deep ground- and karstic waterlevel the development is necessary because of inadequate geographical distribution, with special emphasis on thermal waters. Spring measuring network is also to be developed to monitor the small watercourses they feed. At all stations - monitoring either quality or quantity - priority should be given to the automated, best available technology detection systems for the sake of cost efficiency and of maintenance quality.

The description of the **legal environment,** which is a framework for future development and its justification can be found in sections 8.2.5,, 8.2.6. and 8.2.7. of the Annex.

Indicative list of planned types of operations

a) **Complex water protection investments for high priority water protection areas** (Balaton, Little- Balaton, Velence Lake, Fertő Lake, Tisza Lake, Upper Danube, flood plain and safe side water recharge in the area of Szigetköz, Ráckeve-Soroksár Danube section);

b) **Drinking water base protection operations**:

- In the diagnostic phase (2007-2009): building up the monitoring system, making a status report, identifying sources of pollution, hydro-geological modelling, preparing a plan on insuring safety of water bases, elaborating an economy study by adapting the methodology to complex applications on the water bases. In the preparation phase, we have to carefully optimise the number, the placement and the types of the necessary monitoring wells, and we have to define the steps and the timing of the works according to this method.

- In the phase of insuring safety (2007-2012): Measures prescribed by legally binding resolutions issued by the authorities regarding the drinking water protection areas, on the inside, the outside and in hydro-geological protection zones of water bases for drinking water supply. The overall most economic and efficient measures have to be chosen in the preparation phase, based on the plan on insuring safety of water bases.

  In the diagnostic phase, the ranking of the tenders can be based on the level of vulnerability, the capacity of the water works, (that has to protected), and the number of the supplied inhabitants.

c) **Development of monitoring systems** to track and regularly assess surface water bodies, groundwater, water bodies and in relation to them the status of protected areas in order to achieve environmental objectives.

Indicators

In line with indicator table Objective 2 and section 8.3 in the Annex.

3.2.3 Recultivation of municipal solid waste landfills

Intervention logic

Old, technically non-complying landfills continuously endangering the environment and the inhabitants will be **recultivated**, in order to prevent further pollution of surface waters and groundwater. According to a Phare survey of 2001 out of all explored, mainly abandoned, closed, and to-be-closed landfills 328 are planned to be recultivated in the framework of ISPA programme. The recultivation of further 2232 landfills is inconceivable without EU financial assistance.

The National Waste Management Programme (planned according to the 6th Environmental Action Programme) contains the operations that ensure modern waste management system in Hungary.

The description of the **legal environment,** which is a framework for future development and its justification can be found in sections 8.2.8. of the Annex.

Indicative list of planned types of operations

Strengthening prevention against adverse effects of municipal waste, the reduction of adverse effects of solid waste by **closing and recultivating municipal solid waste landfills**. (The planned operations are only covering regional level waste management and recultivation tasks belonging to municipal responsibility).

Indicators

In line with indicator table Objective 2 and section 8.3 in the Annex.

3.2.4 Remediation of polluted areas

The Government initiated the **National Environmental Remediation Program** (NERP) by its Decree No. 2205/1996 (VII.24.) in order to establish a national inventory of pollution sources endangering subsurface waters and polluted areas. In the framework of NERP the number of contaminated sites and, potential sources of contamination is about 30.000 - 40.000. The legal background of NERP and the implementation of the program is presently ensured by Government Decree 219/2004 (VII.21) and joint KöM-EüM-MOARD-MoTTWM Decree 10/2000 (VI.2) on limit values necessary for the protection of the quality of the geological medium. Regardless of responsibility issues, NERP coordinates tasks in connection with environmental remediation for the whole territory of the country (i.e. all tasks in the scope of either state or not state responsibility). Within these, remediation tasks in the scope of state responsibility are belonging to ministers responsible according to governmental division of labour. The involved ministries will realise their remediation investments in the framework of NERP ministry subprograms.

The description of the **legal environment,** which is a framework for future development and its justification can be found in sections 8.2.9. of the Annex.

Indicative list of planned types of operations

Implementation of environmental remediation in the polluted areas (technological intervention). Reduction of actual and potential pollution of subsurface waters, soil and geological medium by remediation.

Indicators

In line with indicator table Objective 2 and section 8.3 in the Annex.

3.2.5 River basin management plans

Intervention logic

This operation is in direct relation with operations 3.2.1 and 3.2.2. It covers general, country level, long term strategic planning, which are connected to the development objectives defined in the above mentioned operations, and are obligatory according to the acquis, but cannot be directly linked to a certain project.

According to the Water Framework Directive (WFD) surface waters and groundwater must be improved to a good state until 2015 and this good state must be sustainable. To achieve this goal, Article 13 of WFD prescribes that member states must create River Basin Management Plans for all the water catchment areas in their country. The content of this plan is determined to some extent, as according to the WFD it has to contain information listed in Annex 7 of the WFD.

Harmonization is ensured by several regulations, 221/2004. (VII. 21.) Government Decree about water basin management being the most important. This Decree prescribes that the water basin management plan must be prepared according to Article 13 of WFD with the deadline 22, December, 2009. The water basin management plan is the first key step in the sequence to reach the 2015 objective.

According to **EU Floods Directive** which will be accepted in 2007 member states has to prepare preliminary flood risk assessment for all river basins and sub-basins in their country within 3 years after the Directive enter into force. For river basins with significant flood risk, **flood risk maps** have to be prepared until 2013 and **flood risk management plans** have to be prepared until 2015. The flood risk maps and the flood risk management plans have to be made in accordance with the re-examination of river basin management plans prescribed in the Water Framework Directive and if necessary, have to be integrated into to the modernized version of river basin management plans. Objectives in connection with the EU Floods Directive until the completion of the flood risk management plans (in the period 2007-2015) is the preparation of the strategic plans and concepts which serve as a basis for the development of flood protection system and the harmonized operation of the system of the completed facilities.

It is especially important to:
- monitor and treat not just the presently known flood risks, but also those expected in the future, paying attention to the effects of climate change and of future land use planning;
- treat flood management as a whole cycle (prevention, protection, preparedness, protection during floods, restoration and integration of lessons learned).

Modern (digital) flood danger and risk maps on Hungary's flood inundation areas (inundation area of rivers covers 21 200 km^2, that of brooks about 4 000 km^2) have to be prepared according to EU directives taking into account the above mentioned activities (our present maps are out of date, 30 year old paper maps). Based on these new maps, we have to create flood risk management plans.

The description of the **legal environment,** which is a framework for future development and its justification can be found in sections 8.2.4. and 8.2.5. of the Annex.

Indicative list of planned types of operations

- **River basin management plans** on all sub-basins in Hungary
- **Risk management tasks according to the Flood Directive** (preliminary risk evaluation, risk analysis using flood disaster maps, making risk management plans, main riverbed management plans)
- **Strategic plans and concepts** which serve as a basis for the development of **flood protection system** and the harmonized operation of the system of the completed facilities.

Indicators

According to the indicator table of Objective 2 and section 8.3. of the Annex.

3.3 Wise management of natural assets priority axis

In the period between 2007 and 2013 the characteristics, the natural and traditional landscape features, and individual landscape values of the Pannonian biogeographical region are to be preserved.

The objective of nature protection is to preserve the self-maintaining and self-regulating ability and biodiversity of natural ecosystems. This is not only an ethical obligation, it is also an interest of the society and economy, because economic and social life is based on natural resources and gains many benefits from ecosystems.

Main objectives of wise management of natural assets priority axis are to protect and restore protected natural and NATURA 2000 areas and assets, and to support environmental education by the development of forest school network.

Actions in the wise management of natural assets priority axis contribute both directly and indirectly to economic development in many ways:

- A significant part of the natural assets in Hungary are located in the least developed regions. Preservation of these assets is unquestionably key elements in maintaining highly important services such as eco- and agrotourism to the natural areas, and the local selling of local goods, thus contributing to the population retaining capacity and economic development of rural areas. Projects on the preservation and restoration of natural assets are financed from EEOP, whereas projects on the infrastructural development of ecotourism connected to these areas are financed from the relevant ROPs.

- Most of nature protection projects are labour intensive (e.g. hand control of invasive species), thus they directly contribute to employment.

- Several projects would also serve the prevention of economic losses.

    - Aerial electric power line kills might result in power failure. Modifications (changing to underground cable, installing bird deflectors, insulation pads and artificial nests) would not only save birds but would also help to maintain continuous power supply.

    - Crossing animals on roads may slow down traffic and create direct threat of accidents. Animal tunnels and bridges contribute to save protected species on one hand and to safe and fast traffic on the other hand.

    - Invasive species not only endanger natural ecosystems, but also generate economic losses and health problems (e.g. ragweed, silkweed). Their adverse effect can be mitigated by complex actions only. Controlling them in protected natural areas helps to stop their spread into cultured land where their appearance would result in economic loss.

- Habitat reconstructions mitigate the adverse effects (including economical losses) of climate change in several ways:

    - Preservation and reconstruction of habitats with significant carbon-dioxide fixing capacity (e.g. forests, water habitats) contributes to mitigate the adverse effects of climate change and thus reducing economical losses.

    - In a natural, patchy landscape the effects of climate change may be reduced (patches of trees in large sandy areas reduced the effects of arid weather), maintenance and restoration of natural ecosystems (and their microclimate) help the society to adapt to climate change.

    - Restoring natural household of lands also helps the society and the economy to adapt to climate change. Meteorology models forecast even less precipitation in the already dry summers in Hungary, which means that the ratio of arid periods may increase (resulting in severe economical losses mostly in agriculture). Water retention in problematic areas is of utmost importance in the future. Restoring natural household of lands, reconstruction of water habitats contributes also to this objective.

The conservation of biodiversity and its components will be achieved through the rehabilitation, restoration, sustainable use and management of lands and the development of the necessary instruments to this end in accordance with the conservation of the landscape, nature, biodiversity and ecological systems. In order to improve the ecological integrity of the country, reduction of the isolation of semi-natural habitats is of vital importance. These activities can be performed efficiently if they focus on NATURA 2000 and protected natural areas, protected natural assets.

Development of the forest schools helps to raise public awareness and form nature conservation attitude, which are necessary to preserve biodiversity and natural environment.

The **European Regional Development Fund** provides aid to development realised in the framework of this priority axis in order to achieve the 'Convergence' objective, the following NUTS II regions are eligible for this aid: **Western Transdanubia, Central Transdanubia, Southern Transdanubia, Northern Hungary, Northern Great Plain, Southern Great Plain.**

Within the frame of the flexibility principle, there are open possibilities to finance the kind of interventions that belong to the other structural funds' activities (ERDF vs ESF), by up to 10%. The planned interventions of the priority axis offer the opportunity for taking advantage of interoperability (for example: raising awareness of nature conservation, publicity, education).

3.3.1 Restoration, preservation and development of protected natural assets and areas

Intervention logic

One of the most important tasks of nature conversation is to preserve wild fauna and flora and their habitats, and, in the case of the deterioration of their conditions, to restore the original conditions through reconstruction and rehabilitation. This involves (protected and strictly protected) species in Hungary, species and habitats (of Community interest) protected in the European Union, and natural areas protected at various levels (of local or national importance). The habitat preservation and restoration activities cover forests, meadows and wetlands as well.

Since Hungary covers almost the whole Pannonian bio-geographic region, our country's emphasized task and responsibility is to preserve the natural assets that are present here. Furthermore, by joining the European Union, Hungary has undertaken commitment to attain and to sustain the favourable natural conditions of species and habitats of Community importance.

In the course of habitat protection, restoration and development, the protected and NATURA 2000 areas enjoy preferential status.

Another important nature conservation task is to preserve our geological heritage, our unique inanimate natural value. The caves, springs, tumulus and earthworks, certain cliffs and other geomorphological features are special habitats of certain protected plant and animal species with their micro-climates, water cycles and soil conditions that are different from their

environment. Moreover, these inanimate values make it possible to examine the structure of the earth crust, and together with geological exposures and the geological key sections they represent a special value because of the information that they can give us regarding the evolution of hundreds of million years of the Earth and its wildlife. Action is needed in a number of areas for the conservation and restoration of their natural state; those under national protection enjoy priority through the development.

The botanical gardens also play an important role in biodiversity preservation, ex-situ protection and the propagation and necessary rehabilitation process of threatened plant species. Gardens give home not only to endemic, protected and strictly protected species, but also to numerous plant communities, rich in species, conserving unique plant rarities of the country. The planned investments serve the conservation, reconstruction of species and habitats, which have special significance from a nature conservation point of view. Protected historical gardens, within these castle parks are garden constructions that create value helping bio-diversity preservation, in such way that they are in harmony with the landscape ecology features (hills, hydrology, and botany) of the regions. In several cases, the deterioration or loss of these unique cultural-historical creations can still be prevented, and garden architecture, garden arts and landscape ecology values can still be restored with proper actions (reconstruction).

The man-made networks – roads, railways, electrical power lines – cause serious nature conservation problems, in many cases hindering **species migration, free movements of animals and the sustainability of their livestocks**. Because of the environmental and landscape considerations, the railway system has to become safer, the habitat isolation effect need to be reduced, electric power lines must be replaced with underground cables, etc**.,** especially when they cross important migration routes.

The electric power lines can cause the injury and death of birds in two ways: the animals can fly into the power lines and get shocked by the electricity. Bird death through shock can in many cases be avoided by making bird protection modifications on the medium voltage pillars (for example by installing insulation pads). Bird death through crashes is especially dangerous for heavier and not very manoeuvrable birds, for example buzzards, cranes and herons. On the dangerous power lines, „bird deflector" placement can reduce the risk of crashing. The best bird protection safety is to replace aerial lines by underground cables, and this also serves landscape protection objectives. Because of the high costs, we can only suggest their usage in the most significant bird gathering places. In addition, the nesting holes and boxes placed on these pillars are creating good brooding possibilities for certain species. These holes are helping to strengthen some bird stocks, which are dwindling, for example of the lanner, the kestrel and the roller. The Hungarian white stork stock is protected by stork nest raising platforms. The environmental transformation of electrical power lines is being accomplished with preference given to protected and Special Bird Protection Areas (SPAs).

Road kills is the most apparent damage caused by transport infrastructure (roads, railways). The number of run over animals is reduced by properly built protective fences and retention walls. The bird protection devices along roads and railways are serving the protection of the bird species (for example lifting bird flight paths by lines of trees, bird protecting fences and walls). Amphibian and reptile access to roads can be reduced or stopped with amphibian deflection walls. But these deflection fences divide and cut up habitats. From the nature conservation point of view an acceptable solution is to build and shape fences together with the so-called ecological corridors. These are technical solutions, which can lead animals threatened by being run over under or over the road (for example frog corridors, little animal

corridors, big wild animal corridors, landscape bridges and combined corridors). Railroad tracks are often operating as negative ecological corridors, giving space to the spread of invasive plant species. Changing the plants (for example re-sowing grasses, switching bush and tree species) along the tracks can positively influence animal and plant diversity. The nature conservation investments of transport infrastructure is being concentrated on protected and NATURA 2000 Areas.

The description of the **legal environment,** which is a framework for future development and its justification can be found section 8.2.10 and 8.2.11 of the Annex.

Indicative list of planned types of operations

a) Habitat protection, restoration, development,
b) Preservation and restoration of inanimate assets (caves, geological assets),
c) Preservation and restoration of botanical gardens, arboreta and protected historical gardens.
d) Environmentally aware restructuring and increasing the safety of power lines (with the objective of bird protection, landscape protection, etc.)
e) Environmentally aware reconstructing of infrastructure (roads, railways)

Indicators

According to the indicator table of Objective 2 and section 8.3. in the Annex.

3.3.2 Creation of the infrastructure basis for habitat-conserving agriculture and forestry (investments)

Intervention logic

Regarding dynamical nature conservation approach and land use the national nature conservation strategy is an important objective to preserve the ecological potential of NATURA 2000 areas, Hungarian protected forests and agriculturally cultivated areas.

The conservation of natural values is supported by building up the infrastructure conditions of semi natural farming in the government owned NATURA 2000 areas and protected agricultural and forest lands. In many cases this means the implementation of unusual technical and technological solutions or the purchase of livestock for property management, which is a consequence of specialized farming activities that adapts better to extensive natural conditions.

We need to set up and develop appropriate technical and technological tool parks for the beneficiaries to enable them to carry out nature conservation treatment of grasslands, reeds, fish ponds and fallow agricultural lands in NATURA 2000 areas or state owned protected natural areas. First of all this means the purchase of machinery and tools that can fulfil the special demands of semi natural property management and land use. These could for example be special edge tools that are less endangering nests and nestlings, purchases of special machinery that is adapted to the special features of the areas (hills, road accessibility, etc.) and setting up the complementary equipment for extensive animal husbandry, based on grazing. Other types of investments include the creation of conditions for grazing and animal

husbandry, the formation of mobile and permanent stockyards and winter resting place, drinking trough and wells, and the purchase of electrical fences.

In the framework of the measure, forestry investments in state owned areas are in many cases directly serving the conservation and improvement of the natural conditions (for example tools, machines and equipment used against erosion; investments helping the preservation and improvement of water balance). Other types of investments are connected with the introduction and application of new forestry methods and environmentally friendly technological switches, which indirectly facilitate reaching nature conservation objectives (for example purchases of infrastructure, machinery, equipment and tools which are necessary for the application of environmentally friendly forestry and the introduction of new methods in forestry).

The investments helping the introduction of semi natural farming and forest management are concentrated on protected and NATURA 2000 areas.

The description of the **legal environment,** which is a framework for future development and its justification, can be found in section 8.2.12 of the Annex.

Indicative list of planned types of operations

a) Investments serving the introduction of close to nature forestry practices (protected, NATURA 2000),
b) Investments serving the introduction of close to nature meadow land practices (protected, NATURA 2000).

Indicators

According to the indicator table of Objective 2 and section 8.3. of the Annex.

3.3.3 Development of the forest school network

Intervention logic

Education and raising awareness are important strategic questions in nature conservation that play an important role in sectoral policy through the institutional system of forest schools. The promotion of environmentally conscious behaviour as well as the creation of opportunities to get in direct touch with nature directly through experiences can be realised by developing the forest school network.

The forest school service is an activity defined by the public education law. The high level of service is ensured by the service provider assessment system, in operation since 2004, in the framework of the Forest School Programme. There are three basic dimensions of the forest school service, in line with the focus of service assessment: the quality of the professional programmes, the institutional background and the infrastructure background of the services.

The forest schools are able to provide the professional material inevitable for a successful service, but at the same time, they usually need assistance to develop their infrastructure. The

main types of eligible investments, developments and purchases, in the framework of the arrangements are the following:

- Building reconstruction, renovation, establishment;
- Creating the infrastructure background (road, wastewater, solid waste management, etc.);
- Eco-conscious (for example, energy saving) transformation of existing establishments,
- Building up special thematic presentation tools on field;
- Accessibility to nature conservation demonstration areas;
- Purchase of field lab work equipment;
- Purchase of field monitoring and measurement equipment;
- Development of tools for in-door activities.

The description of the **legal environment,** which is a framework for future development and its justification can be found in section 8.2.13. of the Annex.

Indicative list of planned types of operations

a) Infrastructure development of forest schools.

Indicators

According to the indicator table of Objective 2 and section 8.3. of the Annex.

3.4 Increase of the use of renewable energy sources priority axis

The priority axis influencing the structure of energy sources, namely increasing renewable energy utilization aims at contributing to the enhancement of security of supply, to the decrease of import reliance, and furthermore to fulfil the environment and climate protection policy related goals.

The developments being realized within the framework of "Increase of the use of renewable energy sources" priority axis will be supported by the **European Regional Development Fund** in order to achieve the "Convergence" objective. The following NUTS II regions are eligible for support: **West Pannonia, Central Transdanubia, South Transdanubia, North Hungary, North Great Plain, and South Great Plain.**

Intervention logic

In the energy policy of the European Union, increased use of renewable energy sources occupies a very prominent position – in harmony with strengthening environment protection. This has numerous **national economic advantages**, since renewable energy sources

— do not overload the environment , or only to a smaller degree than in the case of fossil fuels, contribute to meet the Kyoto Protocol obligations (climate policy), furthermore CO_2 savings may evolve that can be traded internationally.
— replace fossil fuels, the **energy import reliance** of traditional energy sources is reduced, thus the balance of payments improves
— **may create new jobs**,

— could facilitate a change in **agricultural structure,** thus having a favourable impact of preventing the migration of population, and the budgetary expenses on grain intervention may be decreased,
— facilitate the application of new, **high level technologies,**
— by generating energy from **materials** that otherwise would increase the **environmental load** (e.g. sewage sludge), the environmental load can be reduced significantly.

According to the January, 2007 strategy of the EU, the ratio of total renewable energy sources and bio-fuels must reach 20% and 10%, respectively by 2020.

In order to define the national opportunities, ambitious and in parallel realistic goals, current and foreseen barriers, alternatives of solutions, and tools for implementation, the Government, in 2007, is going to approve the 'Strategy for the increasing of renewable energy source utilisation" as a part of the new Energy policy, (the Renewable Roadmap will be elaborated on the basis of that). Subchapter 8.2.14. comprises of the planned details of the Strategy. This priority axis of the EEOP will be a significant element of the set of tools integrated into the Strategy.

It can be estimated from the amount of funds at the disposal of EEOP that renewable energy source based electricity production (green electricity) can be increased to 870 GWh/y by 2015, whereas within the total renewable energy source utilization – not including bio-fuels - an increase of 14 PJ/y can be realized (figures are 1169 GWh/y and 41 PJ/y including bio-fuel and bio-fuel plants, respectively). The ratio of green electricity will increase from 4.6% in 2005 to 6.5% by 2015 (electricity consumption is estimated to be 41.97 GWh). Due to EEOP, the ratio of total renewable energy sources will increase from 4.6% in 2005 to 7.9% in 2015 (both figures for 2015 include bio-fuel production). Funds are provided mostly from EEOP in the period of 2007-2013, however, other funds also support the increase of the use of renewable energy sources, such as the NHRDP (EAFRD), the Energy Efficiency Credit Fund, and the National Energy Program. Renewable energy use may further be increased by investments implemented without subsidies (e.g. network dependent wind power plants and larger capacity biomass plants). Increment provided by EEOP funds may be further increased by these programmes to a large extent, thus an increase of green electricity by 2100-2200 GWh/y can be estimated by 2015.

The major part of the planned 1169 GWh/y EEOP based increment of green electricity in the period of 2007-2013 will mostly derive from electricity production from solid biomass[27] and biogas. To achieve the objective, energy crop production in agriculture must develop accordingly.

The use of total renewable energy sources – including bio-fuels - is estimated to increase to 41 PJ/y until 2015. This increment contains 14 PJ/y heat value of electric energy increment, 9 PJ/y heat energy production/consumption increment, and 18PJ/y bio-fuel production increment.

The description of the legal environment, which is a framework for future development and its justification, can be found in section 8.2.14. of the Annex.

[27] power plants producing bio fuels constitute a significant proportion within this

Planned operations (the order of operations represents the order of priorities in implementation)

a) **Supporting biomass-utilization:** The agricultural potentials of Hungary are very favourable regarding the planned increase of biomass use, therefore priority is given to energy crop and agricultural waste based biomass projects taking into account environmental issues and related to agricultural development (solid biomass, biogas, bio fuels). Instead of excessive forest exploitation, emphasis shall be placed on establishing a balance between the objectives of forest protection and meeting the wood demand of the population, industry and energy sector. Sustainable forest management is, thus, a crucial element to consider in the assessment and implementation of projects. Supported areas are: small capacity combined and condensation electricity, and direct heat production based on solid biomass and biogas. In order to carry out the planned increase of bio fuels, support may be necessary both on the resource production and on the consumer side. The former is funded by EARDF, the latter by EEOP.
b) **Supporting waste utilization:** an important area, amongst other fractions of waste, is the energy-based and/or bio-fuel utilization of mass generated used cooking oil or animal fat (the support of collecting could take place in another priority or within the framework of a complex project as well.)
c) Supporting biological waste based **biogas** production and utilization: The energetic use of **biogas** produced from sludge of wastewater treatment plants, or municipal waste, or waste of plant or animal origin is beneficial from an environmental aspect (waste management, climate protection) . In detail: establishing regional biogas plants, establishing small biogas plants of individual consumer type, energy-based and agricultural utilization of sewage sludge.
d) Supporting **geothermal** electric and/or thermal energy generation and utilisation: the produced energy can be used to meet the needs of the local populations, institutions and manufacturers. Article 15.§ (3) of the Hungarian Act LVII. of 1995 on Water Management states that only that thermal water must be repressed which is used for a solely energetic purpose. Thus, in accordance with the act, only those investments can be supported, which meet the repressing condition required by the act, or those that are exempt from it.
e) Supporting the instalment of the most modern **heat pump systems** for heating and cooling purposes.
f) Supporting the establishment of **solar power** utilization systems**:** provided partially or entirely for the energy utilization of consumers. Operating **photovoltaic systems** will reduce the use of fossil fuels in generating electric energy, and operating **sun collector** systems can diminish the fossil fuel usage in the production of hot water and heating energy.
g) Supporting energy conscious architectural solutions, passive solar energy utilization in order to decrease the energy consumption of buildings**.**
h) Supporting the increase of existing water power plants' life span, efficiency, and energy conversion efficiency, and supporting the establishment of smaller water power plants.
i) Supporting electric energy production via **wind power**: until system regulation problems are solved, only local or community wind power plants -not producing onto networks - are eligible.

j) Introduction and application of tools and regulatory measures, which support the integration of renewable energy sources into the electricity and other energy networks, and which take into account the ensuring of security of supply.

The technical implementation of the above operations (conditions of support, selection criteria, preferred fields, allocation of funds etc.) will be based on the Energy Policy and the related "Strategy for the increasing of renewable energy source utilisation", which are being elaborated simultaneously with the OP. The strategy is expected to be approved by the government by the end of 2007. The guidelines of the strategy will be integrated into EEOP's two year action plans as well, the action plans for the 2009-2010 period will be elaborated on the basis of these documents

The following principles must be followed in the developments:

— The developments must influence the fossil based energy use of a given region in a demonstrable manner, at regional level the energetic utilization of renewable energy sources must be increased.
— It is especially preferred, if the raw material production and processing, the energy production and processing in connection with the developments can be realized in an equally definable, coherent system at a regional level. The region, depending on the size of the development can extend to a part of settlement, a settlement, a group of settlements, micro-regions, a group of micro-regions, depending on the local potentials and the most efficiently produced local renewable energy sources.
— It is preferred, if development activities are implemented in the framework of community investments, with community support, and the results of the investments serve community interests.
— The joint utilization of different renewable energy sources is preferred as long as they are more cost and environment effective collectively than if they were realized unaccompanied or in combination with a non-renewable.
— The developments combining the utilization of renewable energy sources with other fossil energy sources are eligible to a limited extent as long as they improve the rate of the renewable energy sources and moderate the fossil energy source utilization.
— Also preferred are the developments combining energy efficiency solutions and renewable energy sources. Combined heat and electricity production must be favoured in this respect.

When shaping support policy, and making support decisions it must be considered that – in the case of electricity production – the obligatory delivery price already contains subsidies.

Indicators

In line with the indicator table of Objective 3 and section 8.3. of the Annex.

3.5 Efficient energy use priority axis

In addition to influencing the structure of energy sources, an important task is to develop the tools enabling energy savings and efficient energy utilization in both the production and the consumption spheres. Projects implemented in the framework of "Efficient energy use"

priority axis are supported by the **Cohesion Fund** in order to meet the requirements of the "Convergence" objective. For this support all the regions of the country are eligible.

Intervention logic

The national opportunities, ambitious and in parallel realistic goals, current and foreseen barriers, alternatives of solutions, and tools for implementation will be defined in the National Energy Efficiency Action Plan. Subchapter 8.2.15. comprises of the planned details of the Action Plan. This priority axis of the EEOP will be a significant element of the set of tools integrated into the Strategy.

Hungarian energy policy – considering our significant reliance on imports and the fact that successful energy savings activities may play an important role in the future in securing the supply of energy – treats energy savings as a distinctive priority.

By energy savings:
— The country's reliance on energy imports is moderated,
— The energy bills of the population and budget institutions curtails, the end consumers feel less defencelessness,
— The competitiveness of Hungarian enterprises in the world market increases,
— The number of enterprises and investments increases, therefore employment improves, national capital mobilizes and the flow of foreign direct investments and support accelerates,
— Our international environmental commitments relating to the emission of air pollutants will be accomplished.

The importance of energy savings is strengthened by the fact that the Hungarian economy's energy efficiency, as measured by the energy used for producing one unit of GDP is by over three times higher if calculated on the basis of foreign exchange conversion, and 1.2-1.3 times higher if calculated at purchasing power parities, than that in the developed EU Member States.

The energy/GDP index depends on the rate of energy consumption and the economic performance measured in GDP, thus it can be improved by energy savings and better performance in the economy.

The major target area of savings in energy use is comprised of private, industrial, communal and transport related consumers. Out of these, EEOP especially focuses on communal investments (within this primarily municipalities and district heating providers), and non-technological type of energy efficiency investments of SMEs. Support for private, transport related and (other types of) industrial investments may be granted from other OPs and nationally financed programmes.

Objectives and attainable results

The national objective is to progressively approach the 1%/y energy savings as stated in the 2006/32/EC directive. (It is important to note that the economic changes/set-back after the change of the political regime in Hungary resulted in a 25% decrease in national energy consumption compared to the period before 1990, when it was 1350 PJ, and it regained only to 1153 PJ even in 2005. It is thus impossible to expect from our gradually recovering

economy that it can provide the same rate in energy savings increase as the continuously developing economies of Western-European EU countries.)

With the help of EEOP funds energy consumption can be decreased by a total of 11 PJ/year by 2015, which amounts to approx. 1% savings. Other energy saving funds (ESCF, EECF co-financed by PHARE, NESP) and other operational programmes complement this amount with another 5 PJ/y savings by 2015. By 2015 a total of 16 PJ/year energy savings can be estimated altogether, which is approx. 1.3% of the total national energy use (approx. 1200 PJ)..

The description of the legal environment, which is a framework for future development and its justification can be found in section 8.2.15. of the Annex.

Planned operations

The technical implementation of the above operations (conditions of support, selection criteria, preferred fields, allocation of funds etc.) will be based on the Energy Policy and the related "National Energy Efficiency Action Plan", which are being elaborated simultaneously with the OP. The action plan is expected to be elaborated by the end of 2007. The guidelines of the action plan will be integrated into EEOP's two year action plans as well, the action plans for the 2009-2010 period will be elaborated on the basis of theses documents

a) Modernizing the energy usage of buildings

The reduction of the energy consumption of various buildings, mostly of public buildings[28] must be achieved, as well as the restraining of public lighting energy consumption encumbering municipal budgets. The decrease of the energy consumption of municipal buildings can best be solved by investments implemented via third party financing (TPF) schemes. (The energetic modernization of residential buildings cannot be supported from EEOP.)

b) Modernization of district heating systems

In Hungary, there are almost 650 thousand apartments with district heating, whose energy supply is burdened by significant losses. Savings opportunities: reducing the heat losses of networks, reconstruction of heat centres, instalment of control systems; and on the supplier side: modernization of electricity and heat generating equipment, combined heat and electricity production and application of renewable energy sources. The reconstruction of district heating systems – similarly to the energy related modernization of buildings – must be given high priority due to its well-known critical condition.

Energy efficiency investments that apply several tools of energy efficiency and involve renewable energy sources are preferred.

Indicators

In line with the indicator table of Objective 3, and section 8.3. of the Annex.

[28] Although no regulation defines the concept of public building, however regarding the consideration of interpreting the law, subsidies apply to buildings used by organizations conducting public service. Even without special legal title, such public service is e.g. public administration, service of justice, health care, social welfare provision, public education, professional training, higher education, and all services whose conduct is made obligatory for anybody by any law.

3.6 Sustainable lifestyle and consumption patterns priority axis

The priority axis enhances the goals of the revised Lisbon Strategy in the field of **environmental prevention**, fulfilling international commitments of Hungary and the EU on the promotion of sustainable consumption patterns and it contributes to the availability of environmental information.

The priority axis helps to make sustainability a generally accepted way of living, to make widely known the ways of use of sustainable alternatives and the environmental consequences of consumption, and to improve availability of sustainable consumption alternatives as a result of the cooperation among the different groups of the society (businesses, NGOs, education, science, consultants, and the public). Another aim is to achieve high quality in regular collection, processing and use of environmental information.

The **European Regional Development Fund** provides support for developments realized in the framework of the priority axis in order to achieve the "Convergence" objective. The following NUTS II regions are eligible for support: **Western Transdanubia, Central Transdanubia, Southern Transdanubia, Northern Hungary, Northern Great Plain, and Southern Great Plain**.

Based on the principle of cross-financing the Structural Funds (ERDF, ESF) can finance each other's operations within a 10 % range in the same priority axis, which can be useful for projects under this priority.

3.6.1 Promotion of sustainable consumption

Intervention logic

A prerequisite for running the economy sustainable is the modification of common practice on both the supply and the demand sides of the market. While ECOP acts on the supply side to enforce the principles of sustainability, this priority axis of EEOP plays a role in the development of an environment-conscious attitude and in spreading the practical tools of the realization of environment-conscious consumption on the demand side.

The following actions have to be considered in order to shift consumption patterns in a more sustainable direction:

- raising awareness about the benefits of sustainable consumption, including spreading and verifying values of sustainability in order to make its benefits interpretable at a personal level;
- promoting the acceptance of sustainability as a social norm;
- facilitating the accessibility of the sustainable alternatives of infrastructures, increasing awareness about the possible uses of these infrastructures.

The main target groups of the above operations are children, youths, and local communities; the major fields to focus on are food consumption, transport, waste management, energy consumption and energy efficient products and lifestyles.
The description of the **legal environment**, which is a framework for future development and its justification, can be found in section 8.2.16. of the Annex.

Indicative list of planned types of operations

1. **Campaigns (awareness raising, informing) presenting the environmental and social impacts of consumption and sustainable lifestyle and consumption.**
   - Spreading sustainability related issues, values by means of campaigns, various tools of information, awareness raising events, awareness raising brochures and publications, TV/radio programmes, commercial spots in media, databases, and other initiatives (within this operation ESF type of activities may be provided assistance for up to the 10% cross-finfnacing limit).
   - Research and strategy development supporting the above activities.

2. **Investments and pilot projects presenting and promoting a more sustainable lifestyle and consumption alternatives, and facilitating their distribution.**

With a primary focus on:

- Providing the necessary conditions and elaborating the procedures for sustainable communities (e.g. use of consumer durables, application of energy savings opportunities, strengthening cooperation and community ties, strengthening ties to the place of residence and local community etc.).
- Establishing pilot systems promoting durable and "green" products (e.g. bio products, environmental friendly products) and services.
- Initiatives aiming at the prevention of waste generation, the moderation of generated waste hazardousness and increasing recycling in its material.
- Reconstruction of public buildings and other highly frequented buildings in order to ensure their sustainability.
- Improving the conditions of product certification processes (organizational development, accreditation).
- Presenting the results of the above activities, ensuring the accessibility and distribution of information (this is a must in all projects).

Indicators

The indicator table of Objective 3 and section 8.3. of the Annex.

3.6.2 Developments targeting e-environmental protection

Intervention logic

Environmental information technology must support the shift towards sustainable development and must contribute to the reduction of currently experienced deficit in the field of environment protection democracy. The objectives of e-environment protection must be implemented primarily as the further development of the National Environment Protection and Information System OKIR[29], and as the development of databases related to the implementation of the Water Framework Directive (WFD). The developments must be realized as further developments of existing systems, the implemented and adequately functioning macro systems must not be redeveloped based on new foundations.

[29] Országos Környezetvédelmi Információs Rendszer – National Environment Protection and Information System

The objective is to harmonize the data management in coherence with the professional areas of environment protection and the distribution of employing integrated notion required by the IPPC directive. In order to achieve this, it is important to standardize the notions, formats, submission deadlines of data supply required by the environment protection special fields, making possible at the same time the electronic data supply. Within the e-environment protection developments it is of distinctive importance that the establishment of **EIONET**[30] **compatible environmental surveillance, data collecting and processing network is completed** and based on that an integrated environmental-economic information system is established and operated. Another important field of developments is to improve wider accessibility supporting R&D, planning, policy shaping and decision-making.

The accessibility and publishing of the most important electronic environmental contents of public interest via Internet, based on previous developments and built on OKIR are within reach today (the OKIR-web is operational in test run).

A specific task of this measure is also the **development and harmonization of databases related to the implementation of WFD**. Involving and informing the public during the implementation phase is necessary, and in order to achieve this, flexible databases must be elaborated and made accessible online and in water information centres. Another task is the further (multi-functional) development and harmonization of already existing databases containing various types of information necessary for the implementation and reporting activity.

The establishment of **environmental geographic information system databases and information systems running according to regulations and operating with utilizing the real-time and the so-called "**delayed" environmental information and – possibly – their accessibility online for the public are qualified as further distinguished areas.

The description of the **legal environment,** which is a framework for future development and its justification, can be found in section 8.2.17. of the Annex.

Indicative list of planned types of operations

3. Development of local EIONET network.

4. Development, management and information supply of information technology and geographic information systems, operations applicable for the entire OKIR and its subsystems (especially including the further development of information supply to the public).

5. Information technology support for rural and regional co-operations.

6. Development of IT systems related to the implementation of WFD.

Indicators

The indicator table of Objective 3 and section 8.3. of the Annex.

[30] Európai Környezeti Információs és Megfigyelő Hálózat – European Environment Information and Observation Network

3.7 Project preparation priority axis

Intervention logic

The objective of this priority axis is the **complete preparation of such high standard projects** that if winning Cohesion Fund or European Regional Development Fund subsidies, they could be implemented between 2007 and 2013. With the utilization of available sources within the framework of the priority axis the project managers are going to turn the project ideas adjoining the intended EEOP proceedings into project proposals suitable for financial assistance, retaining complete technical-professional and public procurement documentations.

The support of preparation does not mean automatic decision regarding the implementation of the project itself.

The significance of project preparation is given by the fact that in order to successfully utilize the subsidies available between 2007 and 2013, the closure of sources according to strict timing is inevitable. The timing can only be kept if the supply of projects with adequate quality and quantity apt for the development objectives can be continuously provided.

Indicative list of planned types of operations

Preparation of projects adjoining the following priority axis of EEOP can be supported:

- Healthy, clean settlements priority axis
- Good management of our waters priority axis
- Good management of our natural values priority axis
- Increasing utilization of renewable energy sources priority axis
- Efficient energy utilization priority axis
- Sustainable lifestyle and consumption habits priority axis

In project preparation the following activities can be supported: preparation of technical, financial, economic, and environmental studies, environmental impact assessments required for the project, detailed technical plans, tender documents, and other costs directly related to their preparation and authorization.

3.8 Financing the management of the Operational Programme (technical assistance) priority axis

The objective of the priority axis is the successful and efficient realization of the Operational Programme's operations.

Indicators

The rate of supported projects to be realized. [Ratio of decided (positive decision in favour of support) developments and the realized (in completed projects) developments]

Target: (2015): 90%

3.8.1 Activities of NHDP (New Hungary Development Plan) technical assistance

According to Article 46 of European Council Regulation 1083/2006/EC, there is an opportunity to finance from the funds the preparation, managing, monitoring, evaluating, informing and controlling activities of the operational programmes, including the reinforcement of the administrative capacity necessary for realization.

The sources for technical assistance in the 2007-13 period appear in two places: in the priority axis of OP's technical assistance and the horizontal IOP (*Implementation Operational Programme*). The division between the two financing sources of NHDP's technical assistance framework is in accordance with both Article 46 of Regulation 1083/2006 EC and NHDP's implementation structure.

The distribution of workload between the different levels of the supporting institution system is based on clear principles. The central level tasks – the coordination of design and conduct – is the job of the operational programmes' managing authorities, while the single monitoring information network, NHDP's and the Operational Programme's activities having to do with information supply and publicity etc, are co-joined in the NDA (*National Development Agency*). In order to realize the objectives of the operational programmes, during the programme implementation phase the managing authorities are mainly concentrating on preparing and conducting decisions of strategic significance, as well as on the external, sample taking and system control of the intermediate bodies.

The technical-operational tasks of conducting individual OP's are done by the *Intermediate Bodies* (IBs*)* working on behalf of the managing authorities.

In accordance with the above, differentiation between the technical assistance (TA) framework of IOPs and OPs is as follows:

- The priorities of IOP are intended to support the strategic and systemized activities in connection with conducting NHDP and all operational programmes. *(The tasks of the National Development Agency and the horizontal organizations).*

- The priority axes of the technical assistance Operational Programmes are supporting the technical-operational administration of individual programmes, primarily those activities adjoining the implementation of OP projects. (*Costs connected primarily to the intermediate bodies.*)

The above division of the technical assistance budget is the basis for the design of financial sources. According to the lessons learned from NDP I (*National Development Plan*), nearly one third of the administration costs can be connected to the central and horizontal institutions carrying out activities in relation with programme implementation. The remaining nearly two thirds part can be connected to activities of operational type, primarily project level implementation (intermediate bodies) of various programmes.

Based on this the technical assistance sources available are as follows:

TA-source	In NHDP percentage
IOP	1,38%
TA priority of all operational programmes	2,59%
Total	3,97%

3.8.2 Activities supported by Technical Assistance

a) Technical-administrative administration of the Operational Programme (tasks of intermediate bodies)
When administering the operational programme – in consequence of the above division of tasks – the intermediate bodies carry out the handling of assistance schemes and operations based upon the authorization and guidelines received from the managing authorities.

Most significant tasks of intermediate bodies:

- Take part in the shaping and modification of Operational Programme or priority axis and action plan
- Draft an annual work plan about the administration of the Operational Programme
- Receive project proposals and evaluate them
- Carry out secretarial duties of the juries of award
- Drafting and modifying grant agreements and, if necessary, the security contracts
- Keeping track of the realization and progress of projects
- Authorizing grant payments
- Payment of grants
- Implementation of on-site reviews
- Observing and reporting non-compliances
- Continuous registering of data in the single monitoring information system, as well as providing an up-dated and reliable database
- Drafting quarterly reports about the progress of the programme
- Carrying out OP specific information supply and public related tasks
- Elaboration of sectoral strategies promoting elaboration of call for proposals
- Development of integrated climate change concepts and to prepare action plans

The tasks of the intermediate bodies are stipulated in agreements signed by the managing authority and the intermediate bodies. This priority axis finances the tasks of the intermediate bodies related to the implementation of OP, based on the activities implemented and accomplishment. The performance of the intermediate bodies – based on pre-defined considerations – is evaluated annually.

Precondition to delegating the tasks between MA (*Managing Authority*) and IBs is that during a so called *assessment* (organizational audit) the intermediate bodies give proof to the availability of necessary organizational conditions, resources and professional competence

and that MA can continuously be assured of the availability of these conditions. In order to achieve this the performance of the intermediate bodies need to be regularly evaluated.

b) Fulfilment of specific tasks in relation with the administration of the Operational Programme

Furthermore, the priority axis supports all activities that can be connected specifically and exclusively to the realization of OP and are not being supported within the framework of the IOP. These are mainly the following:

- Operating the OP monitoring committee and implementing its secretarial duties
- Drafting annual progress reports, studies and analyses regarding OP implementation

4. FINANCIAL TABLE

Financing plan of Environment and Energy OP

Reference number (CCI) of the Operational Programme: 2007HU161PO002

at current price, Euro

Year		ERDF (1)	Cohesion Fund (2)	European Union total (3)=(1)+(2)
2007	In a region without interim assistance	55 683 716		55 683 716
	In a region with interim assistance			
	Total	**55 683 716**	**153 394 806**	**209 078 522**
2008	In a region without interim assistance	54 050 519		54 050 519
	In a region with interim assistance			
	Total	**54 050 519**	**327 197 504**	**381 248 023**
2009	In a region without interim assistance	51 502 148		51 502 148
	In a region with interim assistance			
	Total	**51 502 148**	**523 666 181**	**575 168 329**
2010	In a region without interim assistance	53 358 763		53 358 763
	In a region with interim assistance			
	Total	**53 358 763**	**645 580 908**	**698 939 671**
2011	In a region without interim assistance	60 577 407		60 577 407
	In a region with interim assistance			
	Total	**60 577 407**	**674 995 810**	**735 573 217**
2012	In a region without interim assistance	58 714 807		58 714 807
	In a region with interim assistance			
	Total	**58 714 807**	**710 597 299**	**769 312 106**
2013	In a region without interim assistance	62 143 776		62 143 776
	In a region with interim assistance			
	Total	**62 143 776**	**747 382 697**	**809 526 473**
Total	**In a region without interim assistance**	**396 031 136**		**396 031 136**
	In a region with interim assistance			
	Total	**396 031 136**	**3 782 815 205**	**4 178 846 341**

Financing plan of Environment and Energy OP

Reference number (CCI) of the Operational Programme: 2007HU161PO002

at current price, Euro

Priority axis	Source	Method of calculating co-financing	European Union financing (a)	National financing (b)(=(c)+(d))	National indicative division		Total financing (e)=(a)+(b)	Rate of co-financing (f)=(a)/(e)	*Informational data*	
					State (c)	Private (d)			Other financial tools	EIB loans
1. Healthy, and clean settlements	CF	Public expenditure	2 217 569 580	391 335 808	391 335 808		2 608 905 388	85,0%	n.a.	n.a.
2. Wise management of our waters	CF	Public expenditure	1 199 328 900	211 646 276	211 646 276		1 410 975 176	85,0%	n.a.	n.a.
3. Wise management of our natural assets	ERDF	Public expenditure	114 989 621	20 292 286	20 292 286		135 281 907	85,0%	n.a.	n.a.
4. Increase of the use of renewable energy sources	ERDF	Public expenditure	215 113 165	37 961 147	37 961 147		253 074 312	85,0%	n.a.	n.a.
5. Efficient energy use	CF	Public expenditure	131 215 775	23 155 725	23 155 725		154 371 500	85,0%	n.a.	n.a.
6. Sustainable lifestyle and consumption patterns	ERDF	Public expenditure	65 928 350	11 634 415	11 634 415		77 562 765	85,0%	n.a.	n.a.
7. Project preparation	CF	Public expenditure	167 571 738	29 571 483	29 571 483		197 143 221	85,0%	n.a.	n.a.
8. Technical assistance	CF	Public expenditure	67 129 212	11 846 332	11 846 332		78 975 544	85,0%	n.a.	n.a.
Total			**4 178 846 341**	**737 443 472**	**737 443 472**		**4 916 289 813**	**85,0%**	**n.a.**	**n.a.**

* Based on Article 53, Section 1 of Council Regulation 1083/2006/EC a) Total amount of accountable expenses – including public and private expenditures, b) amount of accountable public expenses

The division by categories of the Operational Programme sources can be found in Chapter 8.8 of the Annex.

Hungary intends to meet the still remaining obligations after 2010 involving more Hungarian governmental resources. A certain part of the amount for additionality in the NSRF will also serve the fulfillment of environmental derogations of the EU.

5. CO-RELATION WITH THE ACTIONS FINANCED BY THE EUROPEAN AGRICULTURAL FUND FOR RURAL DEVELOPMENT

Co-relation with the New Hungary Rural Development Strategic Plan (NHRDSP) and the New Hungary Rural Development Programme (NHRDP) supported from the European Agricultural Fund for Rural Development:

Based on EU Regulation 1698/2005/EC, NHRDSP and the NHRDP are plans consisting of significant environment protection actions to which EEOP is connected in multiple ways.

A significant rate of activities that can be financed from EAFRD – especially measures included in axis 2 of the EAFRD supporting land use – are of fundamental significance for nature conservation. Agri–environmental and forest-environmental schemes and independent payment schemes to Natura 2000 sites and areas designated based on the river basin management plans developed according to the Water Framework Directive contribute to the conservation of natural values protected by national and international legislation as well as to the implementation of optimal nature management activities. Agricultural producers can establish the infrastructural basis of integrated agriculture that incorporates environmental and nature conservation considerations as well by using the EAFRD payment schemes targeting the development of non-productive infrastructure. The EAFRD also provides area-based payments to farmers switching to a new-type of (floodplain) farming on the territory of flood-reservoirs to be developed in the framework of the enhanced Vásárhelyi Plan. Support mechanisms targeting the modernization of agricultural establishments can provide support to the implementation of environmental investments of animal farms which are required by the IPPC and Nitrate Directives but were failed to be implemented until present. The EAFRD can provide support to developing the electricity supply of farms, with a special emphasis on increasing the use of renewable energy sources. This may include the competitive production and primary processing of biomass by the producers, as well as the production of crude oil and crude alcohol.

However, the opportunities to use EAFRD are limited, especially as regards the supported activities and the scope of beneficiaries, thus the coordination of objectives and actions of NHRDSP and EEOP is of great importance. The synchronization of agricultural and rural development policy and the development of river basin management is an element of key significance. NHRDSP contributes to increasing the efficiency of integrated river basin management through supporting the environmentally friendly utilization of oxbows and their impact area, promoting nature-friendly agricultural land use, supporting farmers operating on areas affected by the rehabilitation of floodplains and drainage areas of inland waters and by promoting the application of good agricultural practice as the means to achieve the good ecological condition of the waters.

Axis 1 of the NHRDP includes support for infrastructure developments related to water management and the production and processing of biomass as well as for the upgrading of forestry infrastructure and the modernisation of animal farms. Among the different support schemes within axis 2 compensation payments for less favoured areas (LFA) and Natura 2000 sites, agri-environmental, forest-environmental and animal welfare payments as well as the

above mentioned support to non-productive infrastructure on agricultural land and forests are of outstanding importance considering the aims of EEOP.

The demarcation between the EEOP and the support provided from the EARDF is summarised as follows (the description mentions only those measures of the EEOP and the NHRDP where making a clear delimitation proved necessary):

- EARDF supports the collective investments of water regulation, flood protection and inland water regulation in order to protect agricultural production. Similarly, it supports the construction, reconstruction and development of water and water related facilities serving the purposes of agricultural production, carried out with the consideration of the objective of achieving and sustaining the good ecological condition of water and water habitats. The NHRDP provides an explicit list of those areas that are eligible for support. Being supported from EEOP, priority axis titled "the wise management of waters", the NHRDP does not support the development of water infrastructure related to the landscape management on the territory of flood reservoirs to be constructed in the framework of the enhanced Vásárhelyi Plan. The institutional system dealing with the planning and implementation of the EEOP and the NHRDP will ensure the professional coordination of these developments during the assessment of the above mentioned landscape developments. In this respect the motivation of farmers to use these infrastructures through their farming activities by the development of a proper system of area-based payments must be addressed with a special attention.

- In the case of renewable energy sources EEOP supports developments in energy production from renewable sources in the case of non-agricultural enterprises of no on-farm type. On the other hand the NHRDP supports the development of small-scale and medium-scale facilities for the production and use of renewable energy sources to be used for performing agricultural activities of agricultural enterprises[31] , furthermore the on – farm[32] development of non-agricultural type of enterprises. The institutional system responsible for the implementation of the EEOP will monitor and exclude the possibility of double funding during the assessment of the applications. For bioethanol EEOP interventions will focus on developments above 30 kt output, as regards biodiesel, on activity will be funded under EEOP.

- In the field of nature protection EEOP supports investments related to the conservation of habitats in protected areas or Natura 2000 sites as well as the establishment of the infrastructural base for the management of such areas through nature friendly agriculture and forestry. The beneficiaries of these investments are national state authorities, state-owned companies and local authorities. Besides the EEOP supports conservation investments in protected state owned or church owned botanical gardens. Among investments targeting forest schools (nature education centres) the EEOP supports the reconstruction and enlargement of the target institutions including the purchase of education equipment. The NHRDP does not provide support to similar beneficiaries in these areas. The institutional system responsible for the implementation of the EEOP will monitor and exclude the possibility of double funding during the assessment of the applications.

[31] Agricultural enterprise: income from agricultural activity exceeds 50% compared to total income in the year in question. Agricultural activity: TEÁOR 01.1 – 01.3; 01.4; 02; 01.5; 05; 15.71.

[32] On-farm type of renewable energy use: use of renewable energy for agricultural purposes devoted to the agricultural activity of the enterprise onsite

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The demarcation of the EEOP and European Fisheries Fund (EFF) is necessary in the field of water habitat reconstruction. The EEOP supports only the protection of habitats and natural assets, and the implementation of conservation investments, while the EFF supports developments related to fisheries.

6. IMPLEMENTING PROVISIONS FOR THE OPERATIONAL PROGRAMME

The main aspects in terms of the establishment of the implementation system are to summarize the lessons of the period of 2004-2006, to establish a coordinated and effective system, to clearly separate tasks and liabilities, to avoid the overlapping of the different procedures, to ensure the transparency of the procedures, and simplify them, as well as to establish a client-friendly system. These fundamental aspects have to be monitored by all actors of the procedure, at all levels of the implementation system.

The following national legislation lays down the governing rules for implementation:

- Government decree 255/2006. (XII. 8.) on the fundamental rules and institutions in charge of implementation of support from the European Regional Development Fund, the European Social Fund and the Cohesion Fund in the programming period 2007-2013.
- MHPMO (Minister Heading the Prime Minister's Office)-MF (Minister of Finance) Joint Decree 16/2006 (XII. 28.) on general rules of implementation of support from the European Regional Development Fund, the European Social Fund and the Cohesion Fund in the programming period 2007-2013.
- Government Decree 281/2006 (XII.23.) on rules concerning establishing systems of financial management and controls in relation with receiving support from the European Regional Development Fund, the European Social Fund and the Cohesion Fund in the programming period 2007-2013.

6.1 Management

6.1.1 Strategy and Coordination

Throughout programming and implementation the following **aspects of coordination** must be ensured:

- The coherence and consistency between development assistance financed from the Funds as well as from national resources;
- The co-ordination of programming and implementation between the different Funds – EAFRD, EFF, structural funds, Cohesion Fund;
- Full exploitation of synergies between operational programmes within the NSRF, as well as eliminating duplications and conflicting activities;
- Taking into account regional considerations in case of sectoral OPs through the continuous involvement of the regional development councils;
- Ensuring that sectoral policies are represented in regional operational programmes through the participation of line ministries;
- The programming and implementation of flagship programmes financed by several operational programmes at a time, including territorial development programmes covering more than one region;
- Ensuring the promotion and respect of horizontal objectives – gender mainstreaming, equality between men and women and non-prevention of any discrimination based on

sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation, ensuring accessibility for disabled persons with respect to Art. 16 of 1083/2006/EC as well as environmental sustainability with respect to Art. 17 of 1083/2006/EC..

The guarantees for coordination equally cover the phases of planning, implementation, monitoring, evaluation and feedback. In order to provide for efficient cooperation of the organisations the principle processes of coordination are defined by the legal framework.

Institutional framework

The overall coherence of strategic planning is ensured by the Government. For this, **the Government** approves

- the National Strategic Reference Framework (hereinafter referred to as the New Hungary Development Plan, (NHDP) as well as the operational programmes before they are submitted to the European Commission;
- the action plans that describe the measures to be implemented by the operational programmes in full detail – the schedule, budget, objectives, target groups, of the planned measures as well as the list of projects to be implemented without a competitive procedure, including the list of major projects;
- any proposed amendments to the operational programmes – prior to their approval by the Monitoring Committees.

The Government evaluates the progress of the implementation of the NHDP and the operational programmes on a regular basis.

In order to facilitate the co-ordination of strategic planning tasks related to the NSRF and the OPs, the National Lisbon Action Programme, the National Strategy for Sustainable Development and the rural development plan, the Government established the **Development Policy Steering Committee (DPSC)**. The DPSC has the task of discussing proposals and reports to be submitted to the Government, including the delivery of an opinion on the OPs, the action plans, the content of the calls for proposals. (These functions are without prejudice to the functions of the Monitoring Committee.)

As a further, high-level advisory body to the Government, the **National Development Council** (NDC) was set up. The NDC's members are:

- the Prime Minister,
- representatives of the regional development councils,
- delegates of the Economic and Social Council,
- distinguished experts,
- the invited members of the DPSC.

The NDC evaluates the implementation of the development policy objectives, monitors the implementation of the objectives defined by the NSRF, and the enforcement of the development guidelines of the EU, and based on that, prepares recommendations for the Government. (These functions are without prejudice to the functions of the Monitoring Committee.)

The Government's agency charged with the planning and implementation of the National Strategic Reference Framework is **National Development Agency. The NDA** is responsible for:

- the coordination of the planning, programming, evaluation and implementation of the NHDP,
- the coordination of the planning, programming and implementation of the operational programmes,
- in accordance with the Council Regulation (EC) 1083/2006 Article 27 Paragraph 4.g) ensuring coordination between the support provided by the operational programmes, as well as – in co-operation with the Managing Authority of the New Hungary Rural Development Programme – those of the European Agricultural Fund for Rural Development (EAFRD) and the European Fisheries Fund (EFF);
- the coordination of all above financial sources with the assistance received from the European Investment Bank and the European Investment Fund and other resources;
- liaising with the European Commission regarding the questions related to the NHDP and the other operational programmes;
- the elaboration of the general procedural requirements for the implementation of the NHDP and the OPs, including the development of a single operational manual;
- the setting up, the operation and the continuous development of the single monitoring and information system;
- the enforcement and promotion of Community policies and horizontal principles such as sustainability, equality and non-discrimination, public procurements and – in cooperation with the State Aid Monitoring Office of the Ministry of Finance (MoF SAMO) – the respect of state aid rules. In the frame of this for the elaboration of documents and guidelines etc., the enforcement of these in the calls for applications and grant facilities, and the monitoring of the fulfilment of these activities;
- the development of the unified communication strategy regarding the implementation of the NHDP, as well as the requirements related to providing information and publicity on the entire NHDP;
- the organisational development of the institutional system (i.e. providing training opportunities, development of curriculum, dissemination and promotion of best practices, ensuring coordination upon the regulations)
- setting up and operation of the unified client service for the NHDP.

Coordination processes

The coherence, complementarity and coordination of the content of the **operational programmes** is ensured through the definition of detailed demarcation principles in the OPs themselves.

The operational programmes are translated into concrete operations by the so-called **action plans,** prepared, on a biannual basis, for an OP or a priority axis thereof. The action plans spell out the objectives and content of the planned operations, their schedule and indicative financial allocations. Action Plans are also required to present a detailed justification for the planned measures through describing their:

- relationship to community policies (including CSG and Lisbon strategy), sectoral and/or regional strategies and programmes (including connections with flagship programmes);
- complementarity with developments financed from national resources;

The proposals for the actions plans are prepared by the Intermediate Bodies (IBs) and the line ministries and/or regions concerned with the guidance of the Managing Authority (MA) in the framework of a working group where all ministries and regions concerned are represented (**Operational Programme Programming Coordination Committee (OPPCC)**).

In the interest of ensuring the complementarity and avoid double funding with rural development and fisheries the representatives responsible for the implementation of the **EAFRD and EFF** are also taking part in the meetings of the OPPCC , and in the monitoring committee. Small regional advisory networks for the NHDP and EAFRD-EFF will operate in close co-operation..

As an extension of the partnership principle, but also in an effort to further strengthen co-ordination between programmes and measures, the NDA invites **comments from social partners and NGOs** not just during the preparation of the NHDP and the OPs, but also when elaborating the action plans and calls for proposals. Contributions by potential stakeholders – in writing or during dedicated consultation sessions – are then taken into account when finalising the detailed content of operations.

The application of the partnership principle on the different programming-implementing documents, as well as the fact that the relevant line ministry or – in case of the ROPs – the relevant Regional Development Council may be represented in the project selection committee also ensures the realisation of coordination aspects. As members of the monitoring committees regions also take part in the drawing up of project selection criteria.

6.1.2 Managing Authority (MA)

As of July 2006 the Managing Authority of all OPs operate as separate organisational units of the National Development Agency.

The concentration of the management of the implementation improves the effectiveness of the coordination between the implementation of the OPs, the exchange of experience, the transparency, the accountability as well as the rationalisation of management.

6.1.2.1 Designation of the Managing Authority

In line with Art. 59 paragraph (1) of regulation 1083/2006/EC, the tasks of the Managing Authority in case of the Environment and Energy Operational Programme are carried out by the NDA's Directorate General Managing Authority for Environmental Programmes.

6.1.2.2 Tasks and Responsibilities

According to Article 60 of Council Regulation (EC) No 1083/2006 the Managing Authority is responsible for managing and implementing the operational programme in accordance with the principle of sound financial management, and in particular for:

- Coordination of the planning of the operational programmes and the related documents that are under its responsibility. In the framework of the above, it

operates with the participation of the relevant ministries, regions and experts the Operational Programme Planning Coordination Committee as a sub-committee of the Planning Operational Committee;

- Ensuring that operations are selected for funding in accordance with the criteria applicable to the operational programme and that they comply with applicable Community and national rules for the whole of their implementation period;
- Ensuring that the system for recording and storing the accounting records for each operation of the operational programme in computerised form is fed with up-to-date data, and that the data on implementation necessary for financial management, monitoring, audits and evaluations are collected;
- Ensuring that beneficiaries and other bodies involved in the implementation of the operations maintain either a separate accounting system or an adequate accounting code for all transactions relating to the operation without prejudice to national accounting rules;
- Approval of the calls for applications and the grant contract templates as well as the decisions on the project proposals;
- Receipt and control of the requests for funds prepared by the intermediate bodies, countersigns and forwards verification reports prepared by the IBs to the certifying authority;
- Ensuring that the evaluations of the operational programmes are carried out in accordance with the relevant Community legislation. Thereby, the MA will play a lead role in defining priorities and tasks for evaluation work, in consultation with the Monitoring Committee (*see also the chapter on evaluations*);
- Preparation and continuous update of the audit trail of the operational programme; setting up procedures to ensure that all documents regarding expenditure and controls required to ensure an adequate audit trail are held in accordance with the requirements of the relevant legislation;
- Ensuring that the Certifying Authority receives all necessary information on the procedures and verifications carried out in relation to the expenditure for the purpose of certification;
- Operation of the Monitoring Committee and providing it with documents required to permit the quality of the implementation of the operational programme to be monitored in the light of its specific objectives;
- Drawing up and, after approval by the Monitoring Committee submitting to the Commission the annual and final reports on implementation;
- Providing the Commission with information to allow it to appraise major projects;
- Elaborating proposals for the amendments to the operational programme;
- Ensuring the implementation of the OP in line with the decisions of the Monitoring Committee regarding the criteria for the selection of operations, implementation of the action plans, ensuring regularity and feasibility of all operations.
- Monitoring of the implementation of the programmes under its responsibility,

- Liaising with the competent directorates-general(s) of the European Commission regarding the operational programme,
- Participation or – where the function is delegated – supervision of the fulfilment of in tasks related to providing information and publicity on the entire NHDP, as well as the operational programme;
- Managing the technical assistance budget of the operational programme;
- Handling of the system level irregularities, making the necessary corrective steps;
- Prepares proposals for the Government regarding the identification of priority projects after consultation with the relevant ministers and regional development councils.

Further organisational units of the NDA – typically regarding the horizontal tasks, related to several Ops, e.g. communication, finance – participate in the fulfilment of the tasks of the OP MA.

With regard to the **Intermediate Bodies,** responsible for delegated administrative, financial and technical tasks of implementation, the MA:

- Provides professional supervision regarding the activities of the Intermediate Bodies related to the implementation of the OP;
- Approves the internal rules of the Intermediate Bodies related to the use of the OP resources;
- Prepares instructions and rules regarding the implementation of the OP for the IB;
- Controls and evaluates the activities of IB on a regular basis.

The Intermediate Bodies provide the delegated tasks based on the task-order contracts that ensure that the Intermediate Bodies receive payment for their services based on their performance.

6.1.3 Intermediate Bodies

6.1.3.1 Tasks of the Intermediate Bodies

Intermediate Bodies fulfil in relation to one or more priorities especially the following tasks:

- Participation in the preparation of action plans falling in its competence
- Preparation of the **annual work plan** based on the requirements of the Managing Authority. The plan shall contain the dates of the calls for applications as well as the the annual targets for commitments, support contracts and payments.
- Participation in the **preparation of calls for applications** and sample support contracts in cooperation with the MA and the relevant ministries.
- **Admission and appraisal of the project proposals**, and based on the agreements with the Managing Authority setting up and operation of Assessment Committees, in case this task has been delegated to the Intermediate Body.

- Concluding of and amendments to the **support contracts**.
- **Verifying** that the co-financed products and services are delivered and the expenditure declared by the beneficiaries for operations has actually been incurred and complies with Community and national rules;
- **Monitoring of project implementation**, payment of contributions, carrying out tasks regarding project closure, performing verification checks, trackstracking and reportsreporting irregularities.
- **Recording of data** in the single monitoring information system on a continuous basis, providing an up-to-date and reliable database
- Preparation of **quarterly progress** reports on the implementation of the operational programme, the action plan that specifies the details of the implementation process, as well as the annual work plan, with the recommendations on the necessary measures.
- Preparation and up-dating of the **audit trail**.
- Fulfilment of tasks related to **information and publicity tasks**, based on the annual communication plan approved by the NDA.

6.1.3.2 Qualification, Selection and Financing of the IB

Intermediate Bodies contributing to the implementation of the operational programmes were **selected on the basis of a set of objective criteria** measuring their institutional capacity and technical competence. In order to receive the assignment, the prospective Intermediate Body needed to prove the existence of an appropriate, consolidated organisational structure, the availability of human and technical resources, as well as professional competence necessary. (*Further information is provided on the selection procedure under the administrative capacity chapter.*)

To ensure the effectiveness of the implementation, the performance of the **Intermediate Bodies will be evaluated on a regular basis**.

The Intermediate Bodies participating in the implementation of the OP – based on the result of the qualification process – were appointed through a joint **ministerial decree**. Details regarding the tasks, responsibilities, and financing of the IBs were fleshed out in dedicated **task assignment contracts**, signed by the NDA, the IB and – where applicable – the owner of the IB.

For the sake of effective implementation of the programme in case of certain support frameworks – based on an individual decision – non-governmental organisations or corporations, commercial banks, can also be involved *(e.g. as managers of indirect grants or capital funds)*.

The **IBs will be financed** through the above mentioned task assignment contracts from the technical assistance priority of the OP. In order to ensure correctness, sound financial management and regularity of expenditure declared by the IBs in relation to their operational costs the contracts – among others – impose the following requirements:

- The IB has to **separate in full the costs** and incomes related to its activities concerning IB tasks in its financial records as well as in its analytical accounts. Unless unit prices are result of competition, incomes related to IB tasks cannot generate extra profit or finance losses related to other tasks of the organisation.
- The **MA is required to perform controls** of the IB concerning the implementation tasks delegated to it, including the correctness and regularity and effectiveness of expenditure and costs separated in its accounts related to its IB functions.

In case an irregularity is detected the **MA may suspend** the task concerned by the irregularity of the IB or in justified cases all tasks related to the task assignment contract of the IB.

6.1.3.3 The Intermediate Bodies of the Environment and Energy Operational Programme

In case of Environment and Energy Operational Programme the following intermediate bodies were appointed as a result of the qualification procedure:

- The Development Directorate of the Ministry of Environment and Water

The Development Directorate of the Ministry of Environment and Water was established in 2003 in order to take part in the management and implementation of assistance from the European Union dedicated to promote environmental developments. Through its aforementioned activity, the Development Directorate gained useful experience of managing projects financed by the pre-accession instruments (ISPA, Phare, LIFE) and Structural Funds granted in the framework of the 2004-2006 programming period. The familiarity in managing EU funds made the Development Directorate appropriate as Intermediate Body at the end of the qualification procedure performed by the National Development Agency in 2006

- Energy Centre Public Benefit Company

The Energy Center was established by the Government of Hungary in 2000 – with special regard to the integration tasks of the country - to carry out national energy-efficiency tasks, to strengthen and support national and international cooperation aimed to promote energy-efficiency and environmental protection; to elaborate energy-efficiency strategy for the Government services and to support the decision making process, and last, but not least to cooperate in the implementation thereof. The Energy Center gained useful experience by managing the National Energy Saving Programme and by participating in the implementation of the Environment and Infrastructure Operational Programme as an Intermediate Body during the 2004-2006 programming period which can be utilized by the implementation of the energy related priority axes of the Environment an Energy Operational Program of the National Strategy Reference Framework.

With regard to the conditions set out on Art. 10 of Government Decree No. 255/2006. (XII.8.) IBs may be subject to change.

In order to eliminate duplications or overlaps in tasks – as experienced during the 2004-2006 period – as a general rule, all IB tasks related to an operation shall be assumed by one Intermediate Body only. The applicant or beneficiary be in contact with only one organisation (IB) that is responsible for a grant facility during all stages of implementation.

6.1.4 Procedures in Relation to the Implementation of the OP

In order to improve the efficiency and effectiveness of the implementation, as well to further encourage transparency it is necessary to standardize and simplify the implementation process.

Selection criteria need to ensure that operations / projects:

- contribute to the social-economic objectives of the NHDP, of the operational programmes, as well as the given priority;
- have objectives that are definite, measurable, and achievable;
- are cost-effective;
- are sustainable from a financial and organisational point of view;
- contribute to the enforcement of sustainable development, equal opportunities and the principle of non-discrimination;
- demonstrate the existence of all necessary pre-conditions for their successful implementation.

In each case, specific criteria for the selection of operations will be approved by the Operational Programme **Monitoring Committee**.

Decisions on projects will be made through one of the following procedures:

- **Major projects**: In line with a total cost exceeding EUR 50 million (in case of environmental protection exceeds EUR 25 million), that from technical-economic point of view cannot be separated to individual parts. Thethe provisions of Art. 39-41 of 1083/2006/EC, operations financed by the ERDF or the Cohesion Fund comprising a series of works, activities or services intended in itself to accomplish an indivisible task of a precise economic or technical nature, which have clearly identified goals and whose total cost exceeds EUR 50 million (in case of environment exceeds EUR 25 million). In those cases where major projects are foreseen the indicative list of these projects will be part of the operational programme and the action plan and thus it is subject to public consultation
- **Key projects**: Projects that can be supported without a call for applications. These too will be carefully appraised in an applicationassessment procedure, first before pre-selected in an action plan (based on preliminary project proposal), and second before approved for implementation (based on detailed project proposal). Partnership approach will be ensured in both stages, as action plans will be subject to public consultation, and NGOs will delegate members to the project selection committees.. Such projects have key importance from the economy and the society point of view. Their beneficiaries are usually – but not exclusively – state or local government organisations. (e.g. *infrastructure projects of public benefit, state support of investments having priority employment effect*).
- **One-stage calls for proposals:** applied whenever – mainly due to the expected high number of applicants (i.e. private organisations) – it is reasonable to select beneficiaries on the basis of a fully competitive procedure.

- **Two-stage calls for proposals:** This procedure is applied mainly in cases where the size of the target group and the expected number of applications is more limited (typically: public investments), and projects to be financed are more complex. In such cases, projects are first pre-selected on the basis of preliminary (less detailed) proposals. Proposals successful in the first stage then receive assistance, through the IB, during their elaboration into fully fledged, fundable projects.

- Indirect support: cover two different procedures:
  - *Indirect grants* are used in case of proposals that are below a given value limit, and the allocation of the support, the monitoring of the implementation of the projects, whether they are in accordance with the regulations and the contracts – based on the contract concluded with the Managing Authority – will be fulfilled by professional management body – e.g. non-governmental organisations.
  - *Financial support instruments*: (e.g. credit, capital, guarantee instruments) are procedures for which the project selection, monitoring of implementation, auditing and the payment of the support will be carried out by financial intermediaries (e.g. banks).

Project selection procedures regarding independent measures are set out in the detailed action plans.

6.1.5 Administrative capacity

The budget of the development plan – and, within that, the size of the EU's contribution – has increased significantly compared to the previous period. Hungary is committed to the continued development of the institutional system, so that the full and continuous availability of appropriate institutional capacities is ensured, and EU support is used in an efficient, effective and timely manner.

In order to meet the challenges taking into account the experience of the 2004-2006 period Hungary has decided upon the structural reform of the institutional system. This comprehensive reform covers both the increasing of the efficiency of task assignment and operational management as well as in connection with that – based on preliminary measurement – the extension of administrative capacities.

Therefore:

- All managing authorities were concentrated in a single institution (the NDA). As a result of that:
  - The rules and procedures for programming and implementation are now standardised. This increases the transparency of the system and allows for better dissemination of best practices.
  - The common background functions of all MAs (i.e. finances, accounting, communication, legal matters) are to be carried out by horizontal units of the NDA for all the MAs. This allows for increased efficiency.

- The Government has revised the assignment of tasks related to programming and implementation between the MAs and IBs according to common principles. The MA will be responsible for the strategic tasks regarding the implementation of the OP while the IBs receive more autonomy and responsibility in the case of specific operational issues related to implementation. Therefore the duplication of tasks is to be eliminated, the possibility for mistakes can be reduced and the performance of all stakeholders will become unambiguously measurable and accountable.
- In autumn of 2006 in the frame of an independent institutional assessment the NDA – similarly to 2003 – has performed a qualification procedure on the potential IBs. The aim of the qualification assessment was to assess the competence of the institutions as regards IB functions, as well as to identify the areas in case of each body needed to be enhanced in order to perform the task (gap assessment). The main considerations of the assessment were:
  - whether or not the body is in possession of sufficient professional experience and skilled human resources;
  - whether the form of organization allows for performance incentive of staff and weather it allows for autonomous performance of tasks of an IB during the 2007-13 period;
  - whether the organizational functions and work is well defined and regulated;

  As a result of the qualification process precise activity plans were prepared for institutional development for each of the IBs. The action plans established precise deadlines for the IBs that committed themselves to taking the measures necessary in the field of capacity and competences (which may if necessary for instance foresee the employment of additional staff required or the training of staff).
  The gap assessment action plans form part of the NDA-IB task assignment contract and their execution is followed up by the MAs. It is therefore ensured that all IBs maintain adequate number of qualified and trained staff.
- A comprehensive performance measuring and incentive system is introduced both at organizational as well as staff level. Thus, all members of the institutional system became interested in the efficient and as regards the content effective implementation of the programmes.
- A predictable, performance-based system of financing has been introduced for the IB. Financing is based on annual business plans. The contract between the NDA and the IB ensures that the IB has financial interest in high standard, fast selection and management of the projects. It also ensures that the IB manages human and technical resources flexibly: they are free to increase or decrease capacities according to their mid-term tasks. Financial resources to cover the costs of the IB have been allocated to the technical assistance priority of the OP, based on a detailed assessment and calculation of the costs of the institutional system in the 2004-06 period.

Through the individual operational programmes, about two thirds of all TA resources available were earmarked for the financing of IB-level task and capacity needs.

6.2 Monitoring and Evaluation

6.2.1 Monitoring

6.2.1.1 Monitoring Committee

Tasks and Competences:

The tasks within the competence of the Operational Programme Monitoring Committee – with special regard to the efficiency and quality of implementation– are specified in Article 65 of Council Regulation (EC) No 1083/2006 and Art. 14. of Government Decree No. 255/2006. (XII.8.). Accordingly, the Committee shall

- consider and approve the criteria for selecting the operations financed within six months of the approval of the operational programme and approve any revision of those criteria in accordance with programming needs;
- periodically review progress made towards achieving the specific targets of the operational programme on the basis of documents submitted by the Managing Authority;
- examine the results of implementation, particularly the achievement of the targets set for each priority axis and the evaluations;
- consider and approve the annual and final reports on implementation, and the annually updated evaluation plans;
- be informed of the annual audit report, or of the part of the report referring to the operational programme concerned, and of any relevant comments the Commission may make after examining that report or relating to that part of the report;
- propose to the Managing Authority any revision or examination of the operational programme likely to make possible the attainment of the Funds' objectives or to improve its management including its financial management;
- consider and approve any application to amend the content of the Commission decision on the contribution from the Funds.

The Monitoring Committee debates the action plans referred to in chapter 6.1.1. In compliance with Article 63 Paragraph (1) of Council Regulation (EC) No 1083/2006 a Monitoring Committee may supervise the implementation of several operational programmes.

Composition:

The Managing Authorities are responsible for establishing the monitoring committees.

In compliance with Article 64 of Regulation (EC) No 1083/2006, the composition of the operational program Monitoring Committee will be as follows:

The Monitoring Committee according to Art. 64 (1) of 1083/2006/EC is chaired by the person appointed by the Member State, the prevailing member of the Development Policy Steering Committee responsible for the programme area concerned.

Members of the Monitoring Committee will be:

- the Managing Authority,
- a delegated representative of the line ministers concerned in the implementation of the operational programme,
- the Intermediate Bodies concerned in the implementation of the OP,
- the representative of the minister in charge of the state budget,
- delegated representatives of regional development councils concerned,
- at least one delegated representative of local government' associations,
- at least one delegated representative of the environmental protection NGOs,
- one representative of each of the employees' and employer's sides of the National Council for the Reconciliation of Interests,
- delegated representatives of non-governmental organisations – within that, at least one member representing an organisation active for 1.) the Roma people, 2.) disabled people and 3.) equal opportunities for men and women,
- one delegated representative of each of the professional and social organisations concerned.

Members attending in an advisory capacity:

- a representative of the European Commission at its own initiative or the request of the Monitoring Committee;
- the representative of MAs in charge of other OPs affected by the implementation of the OP;
- one representative each of the Certifying Authority and the Audit Authority, as well as the Central Harmonisation Unit;
- for operational programs with contributions from the EIB or EIF, one representative of each of the EIB and the EIF respectively;
- as permanent invitees, one representative each of the organisations responsible for the implementation of the EAFRD (European Agricultural Fund for Rural Development) and of the EFF (European Fisheries Fund).

6.2.1.2 Description of the Monitoring Information System – Indicators and Data Collection

Data supplied by applicants and by the beneficiaries will be entered in the monitoring information system - an upgraded version of the Single Monitoring Information System (EMIR) used for the period 2004-2006. Feeding the system with data is the responsibility of Intermediate Bodies; the NDA ensures continuous operation and upgrading of the system.

The system will ensure the collection, processing and forwarding of data, and the support of implementation, supporting the daily work of all authorities involved in the implementation of the NHDP, as well as the European Commission, and other national institutions.

It is a fundamental requirement in the programming period 2007-2013 that applicants and beneficiaries meet their data provision responsibilities, wherever possible, through electronic means.. The system has been developed by considering these criteria.

The IT system delivers real-time data from each level of the implementation system, and serves as a means of electronic communication between the European Commission and Hungary.

In order to ensure transparency the system will also be used to monitor

- compliance with Article 34 paragraph 2 of Council Regulation 1083/2006/EC as regards complementary financing between the ERDF and ESF and respecting the ceilings thereof, including the special cases laid down in Regulation 1081/2006/EC of the European Parliament and of the Council Art. 3(7) and 1080/2006/EC Art. 8;
- the use of additional assistance to the Central Hungary Region pursuant to paragraph 15 Annex II of Council Regulation 1083/2006/EC.

In order to ensure regional cohesion the system will also be used to monitor

- the allocation of financial funds in the regions and especially in the disadvantaged small regions during the whole period of the programme. These results will be incorporated in the yearly monitoring reports.

6.2.2 Evaluation

6.2.2.1 Evaluation Plan

The evaluation of the operational programmes will take place based on the coordination specified in the New Hungary Development Plan in a systematic system in accordance with the evaluation plan. The evaluation plan enables the preparation for the evaluations, efficient management of the external and internal evaluation capacities, and utilising the opportunities of the harmonisation of evaluations.

The evaluation plan of the operational programme contains a 3-year forecast and is annually revised, as it is an ongoing evaluation system.

The evaluation plan of the OP will be submitted to the MA of the OP, – with the agreement of the organisational unit ensuring the New Hungary Development Plan level coordination of the evaluation – to the Operational Programme Monitoring Committee, which will annually approve it. (The Monitoring Committee will also have a right to initiate the carrying out of evaluations.) For the implementation period lasting until 2015, the evaluation plan contains forecasted evaluations, as well as evaluations selected annually in the system of ongoing evaluation.

The evaluation plan contains the evaluations described below:

- Mid-term revision of the operational programme strategy and implementation system (2009-2010);
- ex-post evaluation of the operational programme (2015-2016);
- annual operational evaluation of action plans (2008, 2010, 2012, 2014);
- ex-post evaluation of action plans (2009, 2011, 2013, 2015);
- ex-ante evaluation of the contribution of action plans, individual interventions and major projects to the implementation of the objectives of the operational programme, and to the enforcement of horizontal policies (2006, 2008, 2010);

- comprehensive evaluation of the operational programme regarding horizontal principles (for example: equality of opportunities, sustainability, etc.) (2008, 2010, 2012)

The evaluation will include the analysis of the impacts of the Operational Programme on climate change (as far as possible analysing the environmental, social and economic costs and benefits of climate change as well) to support different actions for climate change prevention, mitigation and adaptation.

The rules for the potential use of evaluations (publication and availability of evaluation reports, presentation and distribution of results, monitoring the use of recommendations) are laid down in the Operation Manual. These follow the recommendations of the Commission's Working documents on on-going evaluations.

6.2.2.2 Selection Process of Ongoing Evaluation

In addition to the preliminarily planned (comprehensive, strategic) evaluations the unified evaluation plan of the New Hungary Development Plan will from year to year be complemented with evaluations related to the action plans, for which the operational programme Managing Authority will make proposals in agreement with the Monitoring Committee. In the frames of the evaluation plan the evaluations will be made:

- in case of those operations of the action plan, for which during the implementation there was a significant difference between the indicator values specified in the implementation schedule;
- to summarize the findings in connection with the measure(s) related to the operations of the action plan, and implemented in the 1st National Hungarian Development Plan (NDP1);
- 2 years after the completion of operations having no innovative domestic implementation history in order to summarize the findings of the implementation, and to explore impact mechanisms;
- to assess the intended and non-intended impacts of at least one operation per priority annually as from 2009, by ex-post evaluation.

Irrespective of the evaluation plan, it is justified to launch ad-hoc evaluation on the basis of unforeseen needs arising in the implementation system (Intermediate Body, Managing Authority), and of the requirements of the Monitoring Committee.

6.2.2.3 Evaluation Management

The organisation unit ensuring the horizontal, NHDP-level coordination of the evaluation will:

- prepare and conduct the preliminarily planned, comprehensive strategic evaluations;
- provide resources for the regular evaluations conducted based on unified methodology and the enforcement of the evaluation plan;
- prepare and carry out the evaluations conducted in issues which concern more than one of the operational programmes;

- prepare and carry out the evaluation of operations having no innovative domestic history;
- ensure that evaluation reports are available to the public.

The Managing Authority will maintain sufficient capacity for the performance of evaluation-related management duties, and will:

- be responsible for the performance of duties related to the evaluation of the operational programme and the related action plans and operations, and for the implementation of those parts of the evaluation plan of the New Hungary Development Plan, which concern the operational programme;
- coordinate, develop and stimulate the operational programme-related evaluation activity;
- make proposal for the 3 year evaluation plan of the New Hungary Development Plan;
- ensure the incorporation of evaluation results into planning and implementation;
- generate the data of the indicators related to the evaluation of the operational programme and their storage in the monitoring information system;
- revise the target values of the priority level indicators of the operational programme every second year, upon closing the action plans;
- launch, in justified cases – e.g. at the initiative of the monitoring committee –, evaluations not included in the evaluation plan of the operational programme related to the operations, and support their implementation.

6.2.2.4 Planned resources for evaluation

As regards financial resources, NSRF-level evaluations as well as preparation of evaluation methodologies, coordination of evaluation activities and financing of evaluations included in the annual evaluation plan will be financed by the Implementation OP and central budget resources.

Further evaluations – e.g. at the initiative of the Monitoring Committee – may be financed from the Technical Assistance resources of this OP.

As regards human resources planned for evaluation purposes, besides the staff of 6 persons in the horizontal evaluation unit of the NDA, and appropriate dedicated human resources provided by the MA will be dealing with evaluations.

6.3 Financial Management and Control

6.3.1 The Tasks of the Certifying Authority

The Certifying Authority for all operational programmes financed by the Structural Funds and the Cohesion Fund is a separate organizational unit of the Ministry of Finance. The activity of the Certifying Authority is based on the organisation and experience of the Paying Authority

(Ministry of Finance, Office of the National Authorising Officer) of the programming period of 2004-2006.

The Certifying Authority will perform the **tasks** described below:

- receiving payments from the European Commission;
- transfer of EU contributions to the national financing account of National Development Agency;
- drawing up and submitting to Commission certified statements of expenditure and applications for payment;
- certifying that the statement of expenditure is accurate, results from reliable accounting systems, and is based on verifiable supporting documents, as well as the expenditure declared complies with applicable Community and national rules, and has been paid in respect of operations selected for funding in accordance with criteria applicable to the programme and complying with Community and national rules;
- taking account for certification purposes of the results of all audits carried out by or under the responsibility of the Audit Authority;
- in order to support certification carrying out desk-based fact finding assessments and paying fact finding visits on-the-spot at organisations participating in the financial implementation,
- keeping accounting records on the turnover of the treasury accounts used to receive transfers, on the receivables and liabilities;
- keeping an account of amounts recoverable and of amounts withdrawn following cancellation of all or part of the contribution for an operation;
- carrying out financial corrections due to administrative errors and irregularities in the course of the implementation of the operational programme, rendering accounts on Community contributions repaid to the European Commission;sending forecasts of the likely applications for payment for the current financial year and the subsequent financial year to the European Commission latest until the end of April each year.

6.3.2 Rules for Financial Management and Control

Responsibilities of the MA:

- The Managing Authority is responsible for the management and implementation of the Operational Programme in line with the principle of sound financial management.
- The Managing Authority delegates the reception, processing and control of the payment claims of the beneficiaries to the intermediate body – if there is an Intermediate Body.
- The MA monitors the fulfilment of delegated tasks.

- The Managing Authority ensures that for the purposes of certification the Certifying Authority receives sufficient information on procedures conducted in connection with the expenditure incurred in the course of the implementation of the operational programme, and declares to the Certifying Authority by counter-signing the verification report of the Intermediate Body that the procedures applied by the Intermediate Body performing the tasks delegated by it are in compliance with the Community and national regulations. The MA arranges for the submission of the verification report prepared by the IB to the certifying authority.
- The MA has to carry out on the spot checks based on risk-analysis at the IB over expenditure declared by the IB. In order to enhance effectiveness of this function the MA has the possibility to delegate one or more persons (treasurers) from the Hungarian Treasury to the IB to ensure the correctness and regularity of expenditure verified by the IB including correctness of data recording in the IT system.

Responsibility of the IB:

- The Intermediate Body is responsible for the performance of the tasks delegated by the Managing Authority in accordance with Community and national provisions.
- The Intermediate Body provides for the control of the implementation of projects approved in the frame of the operational programme in accordance with Community and national regulations.
- The Intermediate Body is responsible for the receiving, processing and performing administrative verification checks on the applications for reimbursement submitted by beneficiary, for carrying out of on-the-spot checks based on risk assessment, and for summarising the results of verifications carried out in verification report for the purpose of information supply to the Managing Authority and the Certifying Authority. The Intermediate Body is responsible for payments to the beneficiaries.

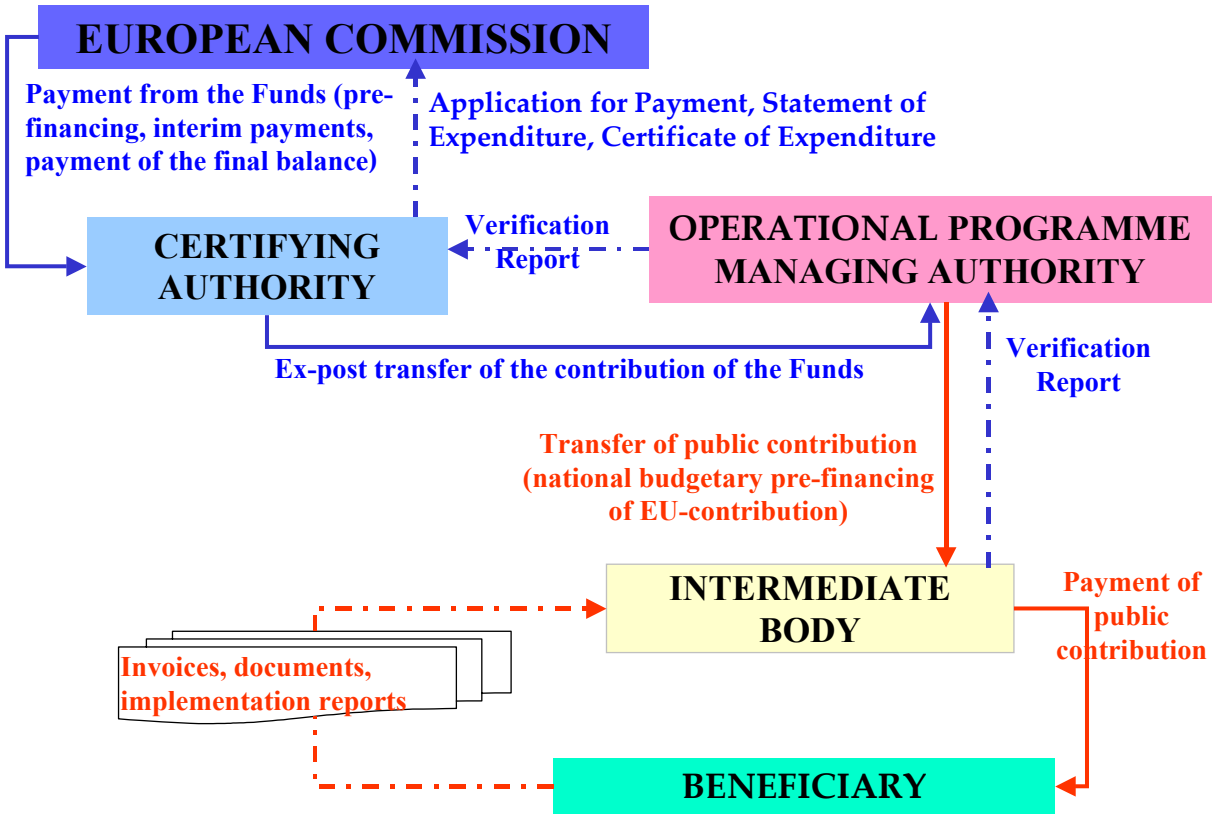
6.3.3 The Process of Payment to Beneficiaries

The beneficiaries will submit their invoices generated in the course of the implementation of the project to the Intermediate Body together with the progress reports, on a regular basis.

The Intermediate Body will perform verification checks on applications for reimbursementsfinancially as well as their content and form, and may conduct on-the-spot checks in accordance with the audit plan prepared on the basis of risk assessment.

On the basis of the approved reimbursement claims the Intermediate Body is responsible for payments to the beneficiaries. It informs the Managing Authority on the results of the verifications conducted in the verification report.

The Managing Authority transfers the Community and the national contributions to the beneficiary from the central budget, which will be refunded to the Managing Authority by the Certifying Authority from the available pre-financing, and from subsequent interim payments.



6.3.4 Control of the European Union's Contributions

6.3.4.1 Financial Management and Control

The Managing Authority, the Certifying Authority and the Intermediate Body establish and operate the financial management and control system. The financial management and control system shall ensure that the activity of the organisations is in line with the regulations and sufficiently regulated, economical, efficient and effective, the information is accurate, and available in due time. The planning, call for proposals, the financial transaction, accounting, control and monitoring duties are functionally separated, and it is necessary to provide for the adequate regulation of these duties also in the relevant internal regulations.

The Managing Authority, the Certifying Authority and the Intermediate Body are responsible for the elaboration of the audit trail, risk management and irregularity handling rules and the immediate entering up of the eventual changes.

In the course of the financial implementation, the Managing Authority, as well as the Intermediate Body are responsible for carrying out administrative verifications and risk assessment based on-the-spot checks prior to payments. In the frame of the above, it is necessary to control whether the physical and financial progress is corresponding with the programme, as well as the project support contracts, and whether the submitted invoices or documents of equivalent probative value are in accordance with the decision related to the application and the contracting terms, the fulfilment of the physical and performance indicators, and the Community and national rules on public procurement.

The chair of the National Development Agency, the head of the Intermediate Body, the Certifying Authority and the Audit Authority are in every year obliged to make a statement

concerning the proper operation of the management and control systems – with content and until a deadline as specified by the legislations.

The Minister of Finance executes its tasks concerning the regulation, co-ordination and harmonisation relating to the control of EU Funds through the Central Harmonisation Unit for Public Internal Financial Control (CHU for PIFC). Regarding EU Funds the CHU elaborates and regularly reviews methodological guidelines to be used in relation to internal controls and makes recommendations for drafting and adopting relevant legislation; through the harmonisation of the audit resources it ensures the fulfilment of an effective, efficient and not overlapping audit activity; and through quality assessment it monitors the execution of relevant regulations and guidelines in relation of the internal control systems.

The minister responsible for the public finance will set up and operate an audit committee involving organisations involved in the implementation of the EU funds, in order to strengthen the transparent use of Community contributions.

6.3.4.2 The Tasks of the Audit Authority

The Audit Authority is a body designated in line with the Community and national rules, responsible for auditing the effective functioning of the management and control systems, which is functionally independent from the Managing Authority, the Certifying Authority and the Intermediate Bodies. In Hungary, the same body performs the duties of the Audit Authority with regards to every operational programme. The tasks of the Audit Authority in line with the provisions of Government Decree 312/2006. (XII. 23.) on the Government Audit Office are performed by the Government Audit Office – a central office having chapter management rights – supervised by the Minister of Finance..

The tasks of the Audit Authority are:

- according to Article 71(2)of Regulation (EC) No 1083/2006, preparation of the compliance assessment criteria of the management and controls systems, to carry out the compliance assessment, and to prepare the report and opinion on the that;
- the preparation and fulfilment of the national audit strategy, and annual reporting obligations (annual audit reports and opinions) to the Commission;
- implementation of system audits and sample checks;
- implementation of audits at the request of the European Commission;
- follow-up of the findings of the audit reports and the chedule related to the measures;
- preparation of declarations on partial closure, and closure declarations and the underpinning audit reports;
- participation in preparing member state responses to audits carried out by the European Commission, as well as in the required negotiations;
- participation in the cooperation with the European Commission according to Article 73 of Regulation (EC) No 1083/2006 in order to coordinate audit plans and exchange the results of the audits.

6.4 Provisions related to Information Supply and Publicity

In compliance with national and Community legislation requirements, the NDA (National Development Agency) will be responsible for the tasks related to the communication and publicity of the New Hungary Development Plan and the operational programmes, with special regard to the following:

- Communication to the potential beneficiaries, economic and social partners on the opportunities related to the contributions. Within this, special role will be given to the efficient mobilisation of the prospective applicants, to well-founded project generating activity and information on available calls for applications.
- Communication to the public on the role played by the European Union in the implementation of the developments. In the course of the above the communication will focus on the introduction of the results of activities implemented with Community co-financing.

The realisation of activities related to information and publicity involves liabilities on the part of both the actors of the institutional system (NDA, Intermediate Bodies) and on the part of the beneficiaries. It is necessary to coordinate the general communications activities related to the entire New Hungary Development Plan, as well as operational programme-related communications activities and partnership actions at central level. The Intermediate Bodies will participate in the performance of other communications tasks related to the introduction of the support possibilities (organisation of professional and information days, forums for the prospective applicants on the programmes at national, regional, county and micro region level), in promoting the communication activities of the beneficiaries, as well as they also carry out data collection and data provision.

On the basis of the information and publicity guidelines prepared by NDA, the beneficiaries have to introduce their own project to the widest public.

Concerning the implementation of tasks related to information and publicity, in accordance with the regulations, NDA (National Development Agency) will prepare a uniform communication strategy for the entire New Hungary Development Plan, which will define the objectives and message of the relevant measures, the strategy and content of their implementation, the targeted social and economic groups, the criteria measuring the efficiency of the measures, the proposed budget of the measures, their estimated time schedules, as well as the administrative units responsible for implementation, and their liabilities. The communications plan will be prepared annually on the basis of the communications strategy. The task of the Intermediate Body will be to prepare and submit to NDA (National Development Agency) the communication plan related to the operational programme managed and/or to the entirety of the priorities, for approval.

Main areas:

- *Introduction of support possibilities, efficient mobilisation of applicants, project generation*
  For the successful and effective use of the development resources it is indispensable to efficiently mobilise the potential beneficiaries, and to introduce the support possibilities This area requires especially active, efficient and concentrated communication focusing on identifiable target groups (various segments of the range of potential beneficiaries). In the frame of this special attention shall be given to

providing direct information and help with project generation and in case it is necessary through implementation to organizations representing the most disadvantaged groups.

- *Introduction of the results of development programmes realised through co-financing*
  The introduction of the realised projects show the success of the domestic use of the structural funds, and reinforces the image of a rapidly and dynamically developing Hungary in the public, strengthens the image of the European Union, and inspires prospective applicants – setting a positive example.

- *Partnership*
  The performance of methodological tasks related to the application of the principle of partnership – such as partnership strategy, partnership actions, partnership reports –in connection with social partnership process, keeping contacts with the preferred partners, involving of partners in professional cooperation, and the preparation of a strategy and reports related to the application of the principle of partnership are of extraordinary importance for the Hungarian government and for the European Commission. Partnership activities are carried for each OP and action plan separately. In line with the terms of delegation of tasks, for sectoral OPs the horizontal unit of the NDA carries out partnership activities, financed by IOP, and IBs will participate in these, Costs of the monitoring committee will be financed by the TA priority of the OP.

- *Client-service*
  A special responsibility of the institutional system is the maintenance of relations with potential and winning applicants. From the aspect of the strengthening of the service provision character of the institutional system, and from the aspect of transparency, this is an important area. Accordingly, the performance of the client communication and information supply task in a unified system is necessary at central and also at local level. The main elements of the unified client-information system are: applicant-information site on the Internet, operation of online and telephone-based client services *(Contact Centre)*, coordination of the information activity of the Intermediate Bodies, setting up and operation of an internal information system coordinating the flow of information.

6.5 Community policies and horizontal principles –Sustainability, Equal Opportunities and Partnership, State Aid, Public Procurement

6.5.1 Sustainability, equal opportunities and non-discrimination, partnership

In the course of the planning and implementation process, all along, criteria sustainability (with special attention to the environmental aspects of sustainability) must be fully met taking into account the provisions of Articles 16-17 of 1083/2006/EC. To this end, an environmental assessment was completed in the case of the NSRF and all operational programmes. The NSRF and the operational programmes were submitted to the National Council for Environment Protection.

Appropriate management arrangements shall ensure at all levels of programme implementation, that possible effects which are unsustainable or unfavourable to environment, especially as concerns impacts on climate change, the maintaining of biodiversity and ecosystems, and the drawing on natural resources, are avoided or kept as low as possible, so that the environmental charges of the OP in total, will in the end be climate- and resource-neutral. The OPs positive effects and potentials for synergies in the sense of optimising its contribution to an environmentally sustainable development, shall be exploited at best and, wherever possible, be strengthened.

In the course of the consultations on the NSRF and the operational programmes with the social partners a great number of non-governmental organisations specialised in different aspects of environment protection, or equal opportunities expressed their views which if possible, we took into account while working out the final draft of the abovementioned documents. We also extended the practice of consultations with the social partners to the action plans and calls for proposals.

Equality between men and women and integration of the gender perspective will be promoted during the various stages of the implementation of the NSRF and all operational programmes. Respect of the principle of non-discrimination (prevention of any discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation) will also be ensured during all phases of the implementation, in particular in relation to access to funding. Accessibility for disabled persons is a particular criteria being observed when defining the operations of the various operational programmes and being taken into account during the various stages of implementation as well.

The Managing Authority responsible for co-ordination shall develop guidelines and compile an Operational Manual in order to ensure the full respect of the horizontal principles of equal opportunities, and non-discrimination both at all stages of programme implementation as well as with regard to the institutional system. These guidelines will be specialized by the OP MA taking into account the specificities of the Fund, the programme and potential beneficiaries and target groups. Also the Managing Authority supports and disseminates good practices. , ensures the possibility of counselling for beneficiaries regarding practical application of horizontal principles during project implementation. Special attention is also given to monitoring the progress made towards equal opportunities targets on programme level.

In the course of the selection process of the projects – as minimum criteria – the full respect of environmental sustainability and that of the principles of equal opportunities, and of non-discrimination are mandatory by the law. In order to ensure full compliance with the above requirements – we have introduced as a novelty – the procedure of the two level evaluations of proposals. In the course of this selection procedure the acceptance of any proposal is subject to the compliance with the horizontal criteria.

It is mandatory to include into the Monitoring Committees at least one representative of a non-governmental organisation specialised in environment protection. Also, at least one representative each of an organisation for Roma people, for persons living with disability, and dedicated to the equality between men and women should be invited to participate in the Monitoring Committees.

Special reports on the compliance with the principles of sustainability and non-discrimination will be compiled, and submitted, on a regular basis to the Government, the Monitoring Committees, the Steering Committee on Development Policy, the National Development Council and Parliament.

On an annual basis, the National Council for Environment Protection shall be informed on the environmental impact of the NHDP and on the compliance with the horizontal aspects of sustainability.

Particular attention should be devoted to the monitoring of the gender equality (in particular in view of collecting data broken down by gender), the partnership mechanisms and to the effective participation of the disadvantaged groups (with special attention to the Roma minority) in the programme.

In the course of operations a widely accessible information and customer service will be put in place. It will include provision of targeted information and support services for the disadvantaged groups. The employees of this customer service will undergo specific training courses tailored to the needs of these target groups. For the sake of providing appropriate information to the different handicapped groups, we plan to offer full access to our websites. Applicants from disadvantaged regions will have access to on-site information through branches of the national orientation service established in all micro regions.

National advisory network will provide help with project preparation for potential beneficiaries in all micro-regions. Special support by Roma experts is also provided for Roma beneficiaries.

The implementation system is fully committed towards the ensuring of the horizontal principles of sustainability as well as the promotion of equality between men and women and non-discrimination, therefore the introduction of the EMAS is foreseen for the NDA. Furthermore measures will be taken in order to provide for a family-friendly work-environment.

Partnership also prevails at all stages of implementation:

- members of non-governmental organisations take part in the project selection committees (including for preparatory activities) as full members (with voting right);
- half the members of the Monitoring Committee are delegated by non-governmental organizations;
- in the frame of environmental impact assessment public consultation is mandatory for projects

6.5.2 State Aid

The NDA takes into account to their full extent legislation in force regarding state aid. To ensure compliance with state aid regulations the **State Aid Monitoring Office** (SAMO) of the Ministry of Finance participates in the preparation of the programmes and action plans (see further on). Furthermore, it examines, in each case, the relevance of the state aid rules with respect to the activity to be co-financed. The Managing Authority (MA) bears responsibility for the compliance of the operational programme with state aid rules and the SAMO ensures professional control over this compliance. Therefore all support schemes shall be pre-assessed by the SAMO.

6.5.3 Public procurement

Hungary has a Public Procurement Act which was adopted by the Parliament in 2003. More than 10 regulations ("secondary legislation") lays down some detailed rules of public procurements e.g. templates of call for applications, the way of publishing call for applications, special rules related to construction procurements, design contests, etc.

Intermediate bodies are responsible for ex post controls related to public procurements conducted by beneficiaries. The National Development Agency has set up a unit for ensuring regularity during public procurement procedures. The role of the Unit for Public Procurement and Control (UPPC) is to provide management control during public procurement procedures.

The rules concerning management control and ex post control are laid down in a regulation which was issued by the minister who is responsible for developments and by the minister of finance (16/2006.(XII. 28.) MEHVM-PM).

The single Operational Manual to be implemented by all Managing Authorities provides guidance for the due adherence to sustainability considerations in the course of the public procurement procedures (so called "green public procurement").

6.6 Provisions Related to Electronic Data Communication between the Commission and the Member State

The SFC2007 system of the European Commission under development will operate on the basis of electronic data provision according to the expectations of the Commission. The IT system is accessible for the institutions of the member sates in two different ways (through the website – Web Application, as well as directly through electronic connections with the member state system – Web Service). It is possible to get connected to the system either using one of the methods, or by combining the two methods. The data that have to be submitted in accordance with the annexes of the regulations will be displayed up to the level of the operational programme components.

In the case of those data, which are included in the Single Monitoring Information System (EMIR), data loading will be ensured according to the specifications supplied by the Commission. Those data, which do not have to be recorded in the Single Monitoring Information System (EMIR) (to avoid duplication of data), will be entered in SFC directly by the key users of the responsible central institutions (such as central coordination, Certifying Authority and Audit Authority).

The Member State Organisation - MSO, responsible for tasks related to the system will be NDA (National Development Agency) in accordance with to domestic regulations, so the Member State Liaison, as well as the 'MS System Owner', the executive of the member state organisation responsible for technical issues will be designated also from the members of the staff of NDA (National Development Agency).

Regulations on Data Provision

Concerning the given data, the method of data provision depends on the way of connection the designated institutions use for data provision purposes out of the two options:

- if they upload the data to the SFC2007 system through the website, the authorised key users of the above assigned institutions (central coordination, Certifying Authority and Audit Authority), enter data to the tables within the competence of their organisation in the requested form, as well as verify them.
- if the member state system sends the data to the SFC2007 system through direct electronic contact, the authorised key users of the above assigned institutions (central coordination, Certifying Authority and Audit Authority) load the data into the member state system, verify and send them to SFC2007.

Irrespective of the way of data recording, – the task of the assigned institutions (central coordination, Certifying Authority and Audit Authority) is the direct and perfect loading of the data into the system(s) keeping the deadlines, so that the data provision by other institutions related to their report can also be carried out within the deadline.
The documents will be supplied upon upload into the system. The documents will deem to have been sent to the Commission, only if they have been validated by the authorised persons.
If the system is permanently inaccessible, especially if the deadline for the data delivery is endangered, the member state will deliver the information to the Commission in the form of paper-based document specified in the relevant regulations. If the access problem has been solved, the member state, or the designated competent organisation will subsequently carry out the loading of the information to the system (SFC2007). In such cases the official date for sending the documents will be the date of the sending of the paper-based documents.

7. MAJOR PROJECTS

Among the major projects of the Environment and Energy Operational Programme (2007-2013) only those projects are listed indicatively which are nominated in government decisions, and whose preparation is underway, or there is national obligation to accomplish them due to former EU Committee decisions. In compliance with the above, further major projects are to be expected within the OP.

Project (planned allocation for preparation in million HUF)	Planned expenditure based on Gov. Decree (Billion HUF)	Cost requirements based on latest data (HUF billion)	Comments	
			Town	Population (Thousand)
Békéscsaba wastewater collection system for the city and external areas, and wastewater treatment (300)	15,0	17,89	1	65,7
Makó and vicinity waste water collection system (112,8)	14,0	15,05	6	41,0
Székesfehérvár and vicinity waste water collection system (127,5)	7,0	8,8	4	110,9
Tápió vicinity waste water collection system and treatment (296)	36,0	43,0	20	90,0
Dél-Buda agglomeration waste water collection system and wastewater treatment (525)	72,0	72,0	7	263,0
Sewage treatment of South Balaton settlements falling under the scope of the Balaton Act (377)	16,0	20,8	40	30,0
Nyíregyháza and peripherals waste water collection system and wastewater treatment (380)	16,0	14,9	4	133,0
Nagykanizsa and vicinity waste water collection system and wastewater treatment (177,3)	7,5	9,38	15	60,9
South Great Plain region drinking water quality improvement (1524)	101,0	105,6	225	1222,6
North-Great Plains drinking water quality improvement 2nd phase (750)	60,0	60,0	199	600,0
Mecsek-Dráva region waste management (250)	31,0	36,23	295	425,4
Central-Transdanubia region waste management (190)	46,0	58,6	169	675,0
GyőrSopron waste management (378,6)	39,5*	22,2	227*	483,1*
Sopron waste management		15,92		
Sustainable development of the Danube-Tisza interfluvia sand ridge (500)	49,0 (+36,5 ROP)	85,4		
Ráckeve Danube-sector improving water management and water quality (1000)	35,0	35,0		
Tisza flood plains project (Expansion of Vásárhelyi plan - VRDP) (351,5)	10,5	11,0		
Kis-Balaton water protection system, Stage II (389,3)	7,7	7,5		

Reservoir for flood level decrease at Hany-Tiszasüly (113,3)	19,0	26,1		
Nagykunsági Reservoir for flood level decrease (95,3)	6,5	10,7		
Reservoir for flood level decrease of Szamos-Kraszna interfluvia (110)	6,5	14,2		
Duna-project (flood protection structures, building of solid covering at some sections of the flood protection structures) (497)	16,4	29,85		
Szabolcs-Szatmár-Bereg county municipal solid waste management systems recultivation programme	-	27,31		
Middle-Duna waste management systems recultivation programme	-	29,71		

* Győr-Moson-Sopron was approved in one project, but only Győr and Sopron exceeded the financial limit set for major projects

8. ANNEXES

8.1 Environment developments implemented from EU sources 2000-2006

The European Union, in the four years preceding the accession and then in the two years following it has provided financial assistance in many fields of Hungarian environment programmes.

During the period between 2000 and 2006 EU supported the development of Hungary's environment protection infrastructure with admitting 12 regional **waste management** ISPA projects and one Cohesion Fund project, and the municipal solid waste-management system of Szabolcs-Szatmár-Bereg County. These projects affect involve more than 1400 settlements and nearly 4.2 million people. The investment costs of the **ISPA and CF** waste management projects are more than €325 million. From **EIOP**, 15 projects of management of animal origin waste and 9 health-related, construction-demolition related waste management project were approved in total of HUF 7.95 billion.

During the period between 2000 and 2006 EU supported the development of Hungary's waste **water management** with admitting 7 ISPA – and three Cohesion Fund projects (among them the development of Budapest Central Wastewater treatment Plant). The implementation of **ISPA and Cohesion Fund projects** affect nearly 2 million people and more than 100 settlements, the total costs are nearly € 800 million. From **EIOP,** 5 wastewater management projects were admitted winning HUF14.2 billion out of the HUF15.7 billion-development.

In the **case of drinking water supply (drinking water quality improvement)** in this period one **Cohesion Fund** project, phase 1 of North Great Plains region is to be implemented with a € 25,5 million support. The project affects 108.000 people and 41 settlements. In addition, six projects were admitted in **EIOP** that enables them to can realize drinking water quality improving developments with the value of HUF 3.3 billion.

In order to keep the measuring devices of the **air pollution** gauge network at the adequate level, **EIOP** subsidy with the value of more than HUF300 million helped obtain the devices necessary for the year 2005 further development.

As regards **measuring noise level,** two central projects will be implemented from **EIOP** sources with a total value of HUF 800 million. One of them is the creation of the noise map of Budapest and the zone of gravity settlements, the other will obtain computer technology instruments suitable for making noise grids of four environment protection inspectorates and the continuous evaluation of noise level.

In the case of **elimination of environmental damages**, a **Cohesion Fund** project, the Üröm-Csókavár remediation project has been submitted to the European Union with the value of € 23,9 million. In addition to this, four projects were admitted from **EIOP** with the total value of HUF3.6 million.

In order **to provide flood protection security,** the programme for strengthening the main protection lines continued and within the framework of expanding the Vásárhelyi-plan

(VRDP) the establishment of the Tisza valley flood level reduction system and the regulation of Mainstream Tisza basin began. From **EIOP,** HUF 9.9 billion subsidy was granted within VRDP for the implementation of the landscape management facilities of the Cigánd-Tiszakarádi flood reservoir.

In the framework of the EIOP central programme "Strengthening Nature Conservation" central programme the development of Natura 2000 areas will be implemented in the Tisza river basin, with the value of HUF 3.3 billion. The beneficiaries of the programme are three national park directorates, that of Hortobágy, Kiskunság, and the Körös-Maros National Park. The attainment of identified nature conservation objectives is served by the purchase of Natura 2000 areas (nearly 5000 hectares) habitats reconstruction and the establishment of forest schools..

In EIOP action „**Developing environment friendly energy utilization**"
there were 45 winning applications (21 out of these were renewable and 24 energy efficient) which results in the total saving of 2.06 PJ/year fossil fuel (Renewable 0.90 PJ/year Energy efficiency 1,16 PJ/year).

8.2 Normative reasons and legal obligations relating to EEOP procedures

8.2.1 Waste Management

In compliance with the Lisbon Agenda and the Goteborg action programmes, the objectives of the 6th Environment Protection Action Programme of the European Community and the contents of the National Waste Management Plan and the Territorial Waste Management Plan based on the above, it must be guaranteed that the consumption of renewable and the non-renewable resources does not exceed the supporting capacity of environment. Resource consumption and waste generation must be separate from economic growth with significantly improved resource efficiency and the prevention of waste generation waste and waste becoming hazardous. A fundamental objective is that the waste is reused and recovered in greater proportions thus reducing the proportion requiring disposal by landfilling.

Adjoining legal provisions:

Based on Parliamentary Resolution No 110/2002. (XII. 12.) on the National Waste Management Plan, it must be achieved that municipal solid waste management networks cover the entire country. In order to accomplish the objectives, the opportunities available from ISPA and the Cohesion Fund must be taken into consideration.
As regards reuse and recovery, in compliance with both EU and Hungarian regulations – European Parliament and Commission Directive 94/62/EC of 20 December 1994 on packaging and packaging waste as amended several times, Government Decree No. 94/2002 (V. 5.) on the detailed rules of packaging and the management of packaging waste, Government Decree No. 195/2002 (IX. 6.) amending Government Decree No. 94/2002 (V. 5.) on the detailed rules of packaging and the management of packaging waste – the reuse and recovery of 60% of packaging waste must be reached by 2012 which requires the involvement of nearly 60% of the population into the selective waste collection systems by 2008 as provided for in Parliamentary Resolution No. 110/2002. (XII. 12.) on the National Waste

Management Plan. The proportion of material recovery to be reached for each packaging material in 2012 is as follows: glass 60%, paper 60%, metal 50%, plastic 22,5%, wood 15%.
In compliance with Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, the organic contents of biodegradable municipal solid waste must be reduced by 50% by 2013 compared to the year 1995 quantity.
In the field of treatment it must be ensured that only wastes not suitable for reuse and recovery are deposited in a landfill and landfills not meeting the regulations must be closed no later than 2009 or upgraded according to the provisions defined in MoEW Decree No 20/2006 (IV. 5.) on certain rules and conditions applicable to waste depositing and landfills.
The re-cultivation/termination of closed and abandoned landfills must be conducted according to MoEW Decree No 20/2006 (IV. 5.) on certain rules and conditions applicable to waste depositing and landfills – in compliance with Government Decree 219/2004. (VII. 21.) on the protection of underground waters
In the case of waste streams requiring special treatment, generated by the population and affecting municipalities as well, the establishment of systems for separate waste collection, pre-treatment systems and the necessary conditions must be provided with attention to the general and specific rules applicable to such waste types. State actions are necessary for the establishment of collecting and pre-treatment systems, for the promotion of material or energy recovery and the reduction of hazardous components.
The isolated collection and further treatment of 4/kg/person/year (40 thousand Tons) household electric appliances by 2008 – by selective waste management – must be reached in compliance with the European Parliament and Commission Directive 2002/96/EC of 27 January 2003 on waste electrical and electronic equipment and Government Decree No. 264/2004 (IX. 23.) on the re-possession of waste electric and electronic equipment.
The selective collection and further treatment of waste streams generated by the population and requiring separate treatment or treatment must be provided in the frame of a public service.

8.2.2 Wastewater treatment

Pursuant to Directive 91/271/EEC as part of the "Acquis", Government Decree No. 25/2002 (II.27.) on the "National Implementation Programme for Municipal Wastewater Collection and Treatment", as amended by Government Decree No. 30/2006 (II.8.) was elaborated and in compliance with the above, in order to fulfil the obligations agreed to in the Accession Treaty, the implementation of nearly HUF 783 Billion worth developments must be carried out in 1746 settlements in case of agglomerations above 2000 PE, and part of these developments will be implemented until December 31st 2006. According to this, between 2007 and 2015 the remaining tasks include a nearly HUF 434.5 billion development expenditure for the collection systems and wastewater treatment sites of agglomerations above 2000 PE. The development costs do not include the expenses of unique equipment. In agglomerations above 2000 PE, public utility wastewater collection systems, biological wastewater treatment and harmless disposal of municipal wastewaters must be implemented no later than

- By 31 December 2008 on sensitive areas designated by special regulation with wastewater output exceeding 10 000 PE, with the simultaneous removal of nitrogen and phosphorus.
- By 31 December 2010 on agglomeration areas with wastewater output exceeding 15 000 PE

- By 31 December 2015 on agglomeration areas with wastewater output characterised by 2000 - 15 000 PE

Assigned deadline	Agglomeration group	Number of Agglomerations	Wastewater load	Investments
		Piece	Thousand PE	HUF billion
2008	In sensitive areas over 10 thousand PE	8	344	21
2010	In normal areas over 15 PE	139	11217	441
2015	In sensitive areas between 2-10 thousand PE	17	66	12
	In normal areas between 2-10 thousand PE	377	1715	241
	In normal areas between 10-15 thousand PE	50	619	68
Total		**591**	**13961**	**783**

Re-use and recovery of municipal liquid waste must be developed in the above 2000 PE range. Municipal liquid waste generated must be reduced as much as possible and the reception of the generated quantity by treatment facilities must be solved. We are attempting to create circumstances until 2008 where the uncontrolled illegal wastewater depositing is entirely eliminated.

Municipal liquid waste transport to non-wastewater treatment sites can be best eliminated by the employment of **semi-natural** treatment technologies following proper pre-treatment. Close-to-nature treatment procedures can be well combined with agricultural and forest management wastewater utilization.

8.2.3 Improving drinking water quality

The normative basis for the drinking water quality improvement programme is **Commission Directive 98/83/EC** of 3 November 1998 on the quality of water intended for human consumption. The Directive ruled for the Member States that within 2 years following its entry into force its provisions must be introduced into the members' own legal system. According to the provisions, drinking water with a quality in compliance with the limit values listed in the annex must be provided for the population.

Introduction was accomplished by entering into force the Government Decree 201/2001 (X. 25.) on the prerequisites and method of control of the drinking water quality. On occasion of extraordinary events and in case of geographically classified areas, the member states may request the two times three years extension of this deadline. Hungary seized this opportunity and in the related chapter of the **Accession Treaty, Act XXX of year 2004** on Environment protection we were given a modified deadline.

Primer objective of the intervention is the improvement of living standards of people via supplying adequate quality drinking water. The water quality improvement programme will affect 873 settlements and 2 538 505 inhabitants.

According to the timing of the programme drinking water quality improvement must take place at settlements where

- nitrate content exceeds 0,5 mg/l-t
- fluoride content exceeds 1,5 mg/l-t
- boron content exceeds 1,0 mg/l-t
- arsenic concentration content exceeds 10 µg/l-t
- ammonium-ion concentration exceeds 0,5 mg/l-t (special national obligation)

8.2.4 Establishing good flood protection practice

- Act 67 of 2004 on the Vásárhelyi Re-Development Plan and its implementation rules.
- Government Decree No. 1022/2003 (III. 27.) on the reviewed development duties of the flood protection facilities of the Danube and the Tisza Rivers as well as the concept on increasing flood protection safety of the Tisza valley (Vásárhelyi Re-Development Plan).
- Government Decree No. 21/2006 (I.31.) on the use and utilization of high water river beds, river banks, areas threatened by water overflow, rising water table as well as the procedure in connection with value reduction of areas protected by the summer dikes.
- Proposal for a Directive of the European Parliament and of the Council on the assessment and management of floods, 18.01.2006

8.2.5 Capacity and quality protection of our waters, prevention of further contamination of waters

- Water Framework Directive 2000/60/EC (WFD)

Prescribes a scheduled implementation (*together with reporting obligations*) for the Member States in order to realize the objective – achievement of good water conditions - by 2015. The remaining tasks and deadline are as follows:

The most important task is to establish a complex (ecological, hydro-morphological, chemical, quantity) monitoring system and the launching of monitoring programmes in order to study the condition of waters and protected areas according to Article 8 of the WFD (Government Decree 221/2004. § 21, sub-section 5) by **22 December 2006. (**Report deadline is March 2007.)

In order to complete the river basin management plan by **22 December 2009** containing programmes of actions and economic analysis concerning the entire Danube basin and the entire territory of Hungary, coordinated with the society and the neighbouring countries, (reporting deadline is 22 March 2010) (WFD Article 13, Government Decree 221/2004 § 21, sub-sections (2) and (7)), planning must commence in 2007 on the 17 appointed planning units in Hungary. The river basin management plan must be reviewed every 6 years and the programmes of actions must also be reviewed every 6 years.

In harmonizing WFD the following regulations assist implementation:

- Government Decree 221/2004.

Containing environmental objectives, standardized frameworks of actions necessary for achieving and maintaining good state of waters as well as the content of the river basin management plan, regulations for planning, deadlines for implementing various tasks necessary for planning, together with consultation with the public.

- Government Decree 220/2004.

In order to achieve and maintain good state of surface waters it contains rules regarding prevention and reduction of contamination. Its implementation regulations (MoEW (Ministry of Environment and Water) Decree 28/2004 (XII. 25.), MoEW Decree 27/2005 (XII. 6.)) contain maximum permitted discharge values and the detailed rules applicable to the measuring of discharge.

- MoEW Decree 31/2004.

Contains prerequisites for monitoring programmes and monitoring network to be established in order to describe the state of surface waters, the regulations of their evaluation, and to trace the effects of loads.

- Government Decree 219/2004.

In order to achieve and maintain good state of sub-surface waters, it contains tasks, rights and obligations regarding the prevention and reduction of contamination, sustainable water use and the restoration of geological media.

- MoEW Decree 30/2004.

Contains prerequisites for selecting underground water bodies, describing and evaluating their state as well as for monitoring network and programmes to be established.

- Balaton Act No 112 of 2000
- Government Resolution 1033/2004 (IV. 19.) on further actions regarding Lake Balaton and on the time proportionate revision of the contents of Government Resolution 1075/2003 (VII. 30.)
- Government Resolution 2317/2004 (XII. 11.) on evaluation of the 2nd phase of Kis-Balaton Water Protection System development and the modification of the investment programme.
- Government Resolution 2083/2003 (IV. 24.) on the implementation of integrated river management.

When setting the deadline for the actions in order to protect the water quality of Lakes **Balaton and Kis-Balaton,** the governing rule is the 2009 deadline for the drafting of WFD river basin management plan and the 2015 deadline for achieving good state of waters. When setting the deadline of actions for protecting the water quality of watercourses**,** the normative is the year 2009 deadline for the drafting of WFD river basin management plan and the year 2015 deadline for achieving good state of waters.

8.2.6 Water base protection

The normative reason for water base protection is the European Parliament and Commission Directive 2000/60/EC of 23 October 2000 establishing a framework for the Community

action in the field of water policy (WFD). According to the Article 7 section 3 of the WFD, the protection to the necessary degree of the drinking water supply of the Member States must be provided with the purpose of avoiding the decline in quality and thus reduce the degree of water treatment necessary for producing drinking water. Based on subsection 6 and 4. 1. (b) section of WFD and its annex IV, the state of the waters must be good within the water base protection areas by 2015, and no exemption can be extended. With regards to the generally applying deadlines set in the Water Framework Directive, the schedule of the Water Base Protection Programme is as follows: the diagnostic phase must be completed by 22 December 2009. Deadline for implementing security phase (inaugurating action programmes) is 22 December 2012. The "drinking water" directive of 80/778/ECC contains very strict limit values as regards the permitted concentration of contaminating substances generating from agricultural and industrial activities, therefore the state assessment of water reserves in this field and the establishment of monitoring can not be delayed any further.

8.2.7 State actions for implementing WFD

- Water Framework Directive (WFD) of 2000/60/EC according to 8.2.5
- MoEW Decree No. 30/2004 (XII. 30.) on certain rules of examining underground waters according 8.2.5
- MoEW Decree 31/2004 (XII. 30.) on certain rules for monitoring and state assessment of surface waters according to 8.2.5

8.2.8 Recultivation of municipal solid waste landfills

- Council Directive 1999/31/EC on the landfill waste
- Council Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances
- MoEW Decree No. 20/2006 (IV. 5.) on waste disposal, and regulations and conditions concerning landfills

8.2.9 Environmental remediation

The reduction of the contamination of underground waters located in contaminated areas or the elimination of contamination with the indemnification of the contaminated areas on the basis of the National Remediation Priority List (NRPL).

NRPL is a priority list, compiled on the basis of risk assessment based preliminary, simplified priority figures depending on the knowledge available on polluting sources threatening geological media, subsurface water quality and the contamination of polluted areas, and relying on data of different levels on the different phases of remediation. The priority number is a relative number whose degree is proportionate to the degree of human ecological and environmental risk of the contaminated, damaged area.
NRPL-I is the indicator of fact finding, whereas NRPL-II is that of the emergency of technical action. NRPL-III list indicates the significance of further technical actions relying on monitoring data.

Tasks based on Government Decree 219/2004 (VII. 21.) harmonizing with Water Framework Directive 2000/60/EC are:

- Completion of **remediation tasks involving particularly sensitive underground water quality protection areas** by 22 December 2015.
- Reducing the contamination risks of underground water bases located in highly **sensitive, sensitive and less sensitive areas**.

In order for the continuous implementation of NERP (National Environmental Remediation Programme), project generating, project preparation and project efficiency control must be provided.

8.2.10 Preserving, reconstructing and developing protected national assets and areas

In addition to designation there are other obligations as well towards the EU concerning Natura 2000 areas.. Every six years, a report must be made for the EU about the implementation of the Commission Directive 92/43/ECC (H***abitat Directive***) on protecting natural habitats, wildlife fauna and flora and about the results of monitoring. The report must contain the actions taken in order to achieve and sustain favourable nature conservation conditions as well as the state assessment. Date of the first report to be sent is 2007 (regarding the period between 2000 and 2006), the report on the period of 2007 and 2012 is to be sent in 2013. According to the provisions of the Directive, derogation report must be sent to the EU broken down into 2-year periods in 2007, 2009, 2011 and 2013-ban. In compliance with the Directive 79/409/ECC (**B*ird Protection Directive***) an annual derogation report and every three years a report on the related regulations must be sent.
WFD has aimed at achieving by 2015 the good ecological state and potentials of underground and surface waters. The Directive defines the achievable environmental state in the protected areas and the monitoring activity and the supplementing provisions.

Other applicable international regulations:

1. Convention on Biological Diversity
2. Bern Convention
3. Ramsar Convention
4. Bonn Convention.

National regulations:

- Act 53 of 1996 on the protection of nature;
- National Environment Protection Programme (NEPP) II;
- National Nature Conservation Basic Plan (NTA);
- Government Decree 275/2004 (X. 8.) on areas with nature conservation purpose and of community interest
- KTM Decree 13/1998 (V. 6.) on registering caves, conditions of visits to and research of caves as well as the construction of caves.
- KöM Decree 13/2001 (V. 9.) on "the protected and increasingly protected plant and animal species, the circle of increasingly protected caves as well as the publication in the European Community of plant and animal species significant for nature conservation considerations".

8.2.11 Investments attempting to reduce the nature and landscape damaging effects of lined establishments

- As provided in II.3.3.1 of Directive 92/43/EGK (Habitat Directive)
- As provided in II.3.3.1 of Directive 79/409/EGK (Bird Protection Directive)

Other relating international regulations:

- Bern Convention;
- European Landscape Convention
- Bonn Convention.

National regulations:

- Act 53 of 1996 on the protection of nature;
- National Environment Protection Programme (NEPP) II;
- National Nature Conservation Basic Plan (NTA);
- Government Decree 275/2004 (X. 8.) on areas with nature conservation purpose and of community interest
- KöM Decree 13/2001 (V. 9.) on "the protected and increasingly protected plant and animal species, the circle of increasingly protected caves as well as the publication in the European Community of plant and animal species significant for nature conservation considerations".
- Act 110 of 2001 on electricity

8.2.12 Creation of the infrastructure basis for habitat-conserving agriculture and forestry (investments)

- As provided for in II.3.3.1 of Directive 92/43/ECC (Habitat Directive)

Other relating international regulations:

- Convention on Biological Diversity
- Bern Convention;
- Bonn Convention;
- EU Forestry Stategy (Council Resolution on a forestry strategy for the EU 1999/C 56/01);
- Ministerial Conferences on Protection of Forests in Europe (MCPFE regulations);

National regulations:

- Act 53 of 1996 on the protection of nature ;
- National Environment Protection Programme (NEPP) II ;
- National Nature Conservation Basic Plan (NTA);
- Government Decree 275/2004 (X. 8.) on areas with nature conservation purpose and of community interest
- Act 54 of 1996 on forests and protection of forests
- FM Decree 29/1997 (IV. 30.) on the implementation rules of Act 54 of 1996 on forests and protection of forests
- MoARD Decree 88/2000 (XI. 10.) on Forest Regulation Rules

- KöM-MoARD Joint Decree 2/2002 (I. 23.) on rules applicable to sensitive natural areas.

8.2.13 Development of the forest school network

International requirements:

5.UN-ECE Sustainability Education.

National requirements:

- Act 33 of 1993 on Public Education

8.2.14 Increasing renewable energy consumption

The aim of the **Cardiff process** (1988) is to integrate environment protection into the various sectors. In addition to agriculture and transportation, the energy sector (production and consumption) is such a special sector.

The **Green Book on energy security**[33] states that Europe greatly depends on foreign energy sources - Russian gas, Middle East oil-, a situation that involves considerable economic, social, ecological and physical risks. According to the **Green Book entitled „European strategy for the security, sustainability and competitiveness of the energy-supply**[34], the crucial issues for the Community are: diversification of the energy structure, support of the production of electric energy coming from low-particle energy source, promotion of the role of renewable sources in cooling, boosting the competitiveness of renewable sources in heating and reducing their strict market-entering restrictions. On the basis of these considerations, in order to increase supply-safety and efficiency, the Commission has set the aim of diversifying energy sources - an aim which must be attained while paying attention to issues of environment protection, to rendering consumer prices acceptable and to the idea of sustainable development.

The European Commission, in the document entitled **White Book: Energy of the future - renewable energy sources**[35]**,** has formulated the intentions of reinforcing the security of supply, boosting the competitiveness of European companies, and the intention of concentrating on environment protection issues (especially as regards to the energy sectors impact on climate change). For the realization of these objectives the Commission considers crucial, the issues of research, mutual development, and the dissemination of technologies. Furthermore, it has set the aim of increasing the proportion of renewable energy sources in the total energy production to 12%. Within the frame of these objectives, Hungary has accepted to achieve the proportion of 3.6% by 2010 (Accession Law 2004. XXX Annex II). In theory, Hungary has exceeded this proportion already in 2005, yet the fulfilling of the (planned) strategy on energy source consumption requires the further increase of the ratio of green electric energy.

[33] European Commission, Green Book "Towards a European strategy for security of energy supply" COM (2000) 767

[34] European strategy for the sustainability, competitiveness and security of energy supply COM (2006) 105 final

[35] COM (97) 599

The directive on the promotion of green energy[36] has determined the proportion of the electric energy produced by renewable sources in the entire EU to be 22.1%, by 2010. Within this frame Hungary has agreed to achieve the proportion of 3.6%, by 2110 (Accession Law 2004 XXX, II stipulation).

The EU Action-plan on Biomass[37] has formulated the intention of doubling the role of biomass. The **Strategy of the EU concerning bio-fuel**[38] **and the directive on bio-fuels**[39] has a regulation that on EU scale, the proportion of bio fuel in the transport sector has to be increased to 5.75 %, by 2010. The Hungarian obligation regarding bio-fuels is the achievement of 5.75%, by 2010.[40]

The energy policy is part of the 2007 energy package, with sustainable development as a main principle. The principle of sustainability involves the development and application of competitive renewable energy sources, the improvement of the efficiency of energy use in Europe, and the reduction of the causes of the climate change.
Beside the improvement of the efficiency of energy use, one of the most important objectives of the EU is to increase the use of renewable energy sources. These objectives contribute to facilitating EU's competitiveness, increasing supply-safety, and fulfilling environmental objectives by the reduction of pollutant emissions.
An action plan is to be implemented to promote sustainable development, which aims both at 20% energy savings based on total present consumption and at realistic growth in energy efficiency until 2020. A cost effective strategy must be implemented for the EU to develop renewable energy sources (the ratio of renewable energy sources and bio-fuels must reach 20% and 10%, respectively, by 2020).

According to the "**Presidential Conclusion**" publication of the European Council on 8-9th March, 2007, the rate of reduction of greenhouse gases by developed countries must reach 15-30% by 2020 compared to figures of 1990 (opposed to 8% reduction in the period 2008-2012). Objectives (EU-25): the ratio of renewable energy sources should reach 20%, the ratio of bio-fuels should reach 10% by 2020. Hungary must make great efforts in order to promote sustainable energy management. The achievement of the 6% Kioto requirement seems attainable by 2008-2012, however, the goals set for 2020 can only be achieved by means of a fundamental restructuring in the energy sector and intensive energy efficiency measures.

In order to set the above objectives within a national framework, and to define the measures necessary to achieve them, the Hungarian government will approve a new Energy Policy and a related document entitled: **Strategy for the increasing of renewable energy source utilisation**. The governmental approval of these documents is expected to take place by the end of 2007. **The Strategy (**period: 2007-2020**) will primarily focus on** the following elements:

1. The relationship between the national and international aspects of the strategy (EU energy policy, climate policy, agricultural policy, national documents)

[36] 2001/77/EC Renewable energy: the promotion of electricity from renewable energy source
[37] Statement of the Committee: Action plan concerning bio-mass COM (2005) 628 final
[38] Union strategy concerning bio-fuel COM (2006) 34 final
[39] 2003/30EC
[40] 2058/2006(III.27) Government Resolution of the Government on the development of the production of bio-fuel and promotion of its traffic use

2. Situation Analysis (trends in the use of renewables (heat and electricity production, use of bio fuels) in the EU and in Hungary, expected target rates, current problems)
3. Current tools to encourage the use of renewables (International practice; currently applied national tools, the impacts and results of each tool: regulatory means, subsidized price, obligatory delivery; tools of support policy: EIOP, EEOP, NEP, R+D, Other; tax allowance; lack of knowledge/information, expert pool, awareness raising; institutional system)
Analysis of difficulties: problems with regulation, obligatory delivery price, no subsidy for heat, regulation problems with the integration of renewables into the electricity grid)
4. SWOT
5. Objectives (assumptions made for the factors influencing the objectives: energy use, technological trends, available biomass resources, estimates on potentials. Defining target figures: proportion of renewables by 2010, 2013, 2020; defining sub target figures within renewables for renewable electricity and heat production, and use of bio fuels; description of the required capacity increase of renewable technologies in order to achieve the objectives.
6. Elaborating the principles and methods of utilisation and production (defining renewable energy sources, taking into account the sustainability principle)
7. Tools and financial means of achieving the objectives until 2013:
   a) Harmonizing the tools of support policy
      – Investment support, (EEOP, nationally financed programmes)
      – regulation (liberalisation and its impacts) – new electricity Act
   b) Solutions to current and expected difficulties
      – Regulation of the system (integrating renewables exposed to weather changes, optimizing the tools),
      – Increasing knowledge, dissemination of information,
      – Establishing an expert pool, raising awareness
   Further measures required till 2020
8. Implementation and monitoring, institutional framework of implementation

The document entitled **National Reform for Growth and Employment (2005-2008)** emphasizes, that although on EU scale, Hungary fulfils extremely diminutive obligations, the country could be considerably more active in the area of the developing renewable technologies, which would also promote growth and employment[41]. According to the ETAP roadmap[42], in the area of thematic research-development of renewable sources, there is no subsidizing system that would support renewable energy sources and energy efficiency.

8.2.15 Efficient Energy Consumption

The Cardiff process and the Green Book on Energy safety both discuss the question of how energy could be used more efficiently. This subject is elaborated in chapter „II.3.4.1 Greater consumption of renewable energy-sources".

The main principle of the **Green Book (2005) about energy efficiency** is to achieve 20% energy savings in the EU by 2020. This would amount to – based on many assessments – approx. 60 billion euro savings annually. This objective requires massive investments, but they would boost the energy sector in the EU and would contribute to the creation of 1 million new jobs.

[41] National Reform for Growth and Employment (2005-2008)
[42] National Roadmap for the Implementation of ETAP in Hungary, 1/25/2006

The Green Book mentions three main areas, where more efficient energy savings measures are required:

- transport
- buildings, households
- industry.

The Green Book, released on 8th March, 2006, by the European Commission, with the title "**A Safe, Competitive, Sustainable European Energy Policy**" brings up a lot of new ideas. Besides emphasizing again the need for increasing efficiency and increased application of renewable energy, an even greater emphasis is placed on the establishment of a competitive internal energy market, and on the demand of connecting and developing electrical- and gas networks. Six key topics of the Green Book are: (1) competitiveness and internal energy market; (2) diversification of the energy structure; (3) solidarity among member states; (4) sustainable development; (5) innovation and technology; (6) effective foreign policy.

The **2006/32/EC** Directive of the European Parliament and Council obliges the member states to create their national energy policy by 30th July, 2007. The objective of the Directive is that the member states achieve 1% savings during 9 subsequent years, so that they reach 9% savings by the end of the 9th year. Actions required for implementation are classified in three groups, which are the integration of energy efficiency into other sectors, strengthening and expanding present regulation, and issuing new rules and regulations.

The official publication of EU's energy objectives is the "**energy package**" released in January, 2007. According to this, the three pillars of the common energy policy is security of supply, competitiveness, and sustainability. It focuses on acting against climate change, reduction of EU's vulnerability to hydrogen-carbonate import, and promotion of employment and growth. The EU must be transformed into a high efficiency, low hydrogen-carbonate emitting energy-economy, in this way launching a new industrial revolution, accelerating the switch to a growth with low carbon use, and increasing significantly local, low emission energy production and use.

In order to facilitate sustainable development an action plan is to be approved, which aims at achieving 20% energy savings and a realistic increase of energy efficiency by 2020 compared to the current total energy consumption.

In order to set the above objectives within a national framework, and to define the measures necessary to achieve them, the Hungarian government will approve a new Energy Policy and a related document entitled: **National Energy Efficiency Action Plan**. The governmental approval of these documents is expected to take place **by the end of 2007**. **The Action Plan (**period: 2007-2020**) will primarily focus on** the following elements:

1. The relationship between the national and international aspects of the action plan (EU energy policy, climate policy, agricultural policy, national documents)
2. Situation Analysis (trends in the use of energy in the EU and Hungary, expected sectoral target rates; current and expected problems)
3. Current tools of state subsidies (International practice; currently applied national tools, the impacts and results of each tool: regulatory means: subsidized price, obligatory delivery; tools of support policy: EIOP, EEOP, NEP, R+D, Other; tax allowance;

Analysis of difficulties: lack of knowledge/information, expert pool, awareness raising, institutional system, problems with regulation, activities non- or partly eligible for EU funds (e.g.: apartment blocks)
4. SWOT
5. Objectives (assumptions made for factors influencing the objectives: energy use, technological trends, defining target figures: sectoral break down; definition of sub targets;
6. Tools and financial means of achieving the objectives (in line with 2006/32/EC)

The analysis shall primarily focus on the following aspects:

1. Raising awareness related to energy savings, continuous dissemination of information
2. Facilitating R + D activities related to energy savings and increase of renewable energy sources.
3. Encouraging regular energy audits to explore energy losses in the production sector.
4. Improving the energy management of municipalities (including public lighting)
5. Planning based on the lowest possible cost, launching programmes to influence consumption needs
6. Energy savings in transport and forwarding
7. Decreasing industrial energy consumption
8. Modernizing transport
9. Energy-technological modernization of agricultural production
10. Supporting energy savings in public consumption
11. Increasing the application of alternative firing systems
12. Increasing the utilisation of renewable energy sources
13. Reconstruction of district heating systems, increasing the competitiveness of district heating
14. Placing energy efficiency labels on electric appliances

7. Implementation and monitoring, institutional framework of implementation

To promote the aims adopted by the Lisbon Strategy, the European Commission has created the **Competitiveness and Innovation Framework Programme (2007-2013)**[43]. The programme, within the frame of its foundational programme „Intelligent Energy - Europe", considers the achievement of the objectives set for consumption of renewable energy to be of cardinal importance. For this reason, it supports energy efficiency, as well as actions taken to increase the consumption of renewable energy and actions taken to decrease overall energy consumption.

In order to achieve the objectives set by the Green Book and the Kyoto Protocol, the **directive on the energy efficiency of buildings**[44], treats the efficiency of buildings in an integrated manner. Accordingly, it states that the member states must elaborate methods for measuring the energy-efficacy of buildings, must set minimum requirements for each building type, must validate the requirements and must oversee on a regular basis that they are fulfilled.

The promotion of the means of diminishing atmospheric emission caused by energy utilization activities, is among the specific and operational aims of the **"Action Programme on Weather Change",** a programme of the National Environmental Protection Programme (2003-2008). The NEPP II defines the environmental-policy target-system. The National Development Policy Concept and the National Regional Development Concept, which have

[43] COM (2005) 121
[44] Directive 2002/91/EC on the energy performance of buildings

been adopted in 2005, give the directives for development-policy, and elaborate the territorial implications of these directives.

8.2.16 Sustainable Lifestyle and Consumption

The NEPP II **„Action-programme for raising environmental consciousness"** has formulated as its specific and operational aim, the improvement of the environment-values of the public. This includes the support and promotion of the sustainable life-styles, private and family, and the support and promotion of sustainable habits of household management.

The European Council Communication COM(2003) 302 on the Integrated Product Policy (IPP) formulates the principles and instruments, which promotes sustainability in consumption and production. The Council presently prepares the Sustainable Consumption and Production Action Plan, which proposes definite recommendations for the member states.

8.2.17 Developments targeting to e-environment protection

According to the directives for environmental information and publicity, and the regulation adopted by the Århus Convention, the most important task is the creation of open information-providing networks, with user-friendly access. The setting up of such networks should be carried out with the use of the most advanced, available technological solutions. According to Act 90 of 2005 on electronic information freedom, institutions of the public domain will be obliged to make available on their homepage the most important facts of public interest. As regards the environmental authorities, their most basic tasks in this area will be to lead active information policy, to collect and process punctual, up to date environmental information, and to secure that this information becomes automatically, without request, available to the public.

As environment protection concerns almost all sectors, information technology must be supported in such a way as to ensure harmony between the various databases. In the interest of the realization of the constitutional right of information, well coordinated, co-operating information technology networks must be developed, which are capable of communicating with each other. This objective implies that multifunctional, multipurpose networks must be developed and the already existing networks must be developed in this direction as well.

The most important international and national regulations and concepts forming the background are the following:

1 National Environment- and Nature- Policy Concept adapted by the Government in 1994. This Concept, containing stipulations on measuring-, surveying and information-networks, serves as the foundation of environmental policy.
2 National Environment-Protection Programme
3 Act 53 of 1995 – on the general rules of environment protection (has been amended)
4. The relevant suggestions of the EU, the OECD and the UN
5. Convention on the issues of information access, public participation in decision-making, and rights to jurisdiction in the area of environment. Århusi 25 June 1988.

6. Act 81 of 2001 on the promulgation of the Convention adopted on 25 June 1988 in Århus on information access, public participation in decision-making and rights to jurisdiction concerning environmental issues
7. Act 47 of 2001 on the promulgation of the Agreement on the participation of the Hungarian Government in the European Environment Protection Agency and the European Environment Information and Observation Network
8. Directive 2003/4/EC (1/28/2003) of the European Parliament and Committee on the environmental information access, and the repeal of directive 90/313/EEC
9. Act 90 of 2005 on electronic information freedom, effective from 1/1/ 2006
10. Government Decree 311/2005 (XII.25) on the process of public access to environmental information
11. During EEOP programme period 2007-2013, the creation of further laws is necessary which makes possible the transposition of the EU INSPIRE directive (spacial e-data infrastructure) into the Hungarian law. For the explicit realization of the directive (complete implementation of a European level geographic information system) will take place in the third (implementation) phase between 2009-213 in accordance with the legislative schedule.

8.3 Result indicators and target figures

Types of indicators describing the performance of the priorities

- **Evaluation indicators (E)**: are generated from outside data sources, thus they indicate the impacts of all national investments in the specific development field
- **Monitoring indicators (M):** are generated from EEOP's databases, thus they only indicate the impacts of EEOP related investments without any other national investments in the period 2007-2013.

Calculation of the target figures

For waste management, wastewater treatment and drinking water quality improvement we used the obligations taken by the Accession Treaty (evaluation indicators, that is target values of total development in the country), and this figure was decreased with development results achieved by non-EEOP supported activities (tracking indicators).

For Wise management of our waters priority axis we used WFD requirements and deadlines. For flood protection and remediation the 7 years length of the period is a problem.

For energy efficiency and renewable energy we used EU directives and Hungarian strategic objectives based on the directives.

For Wise management of our natural assets priority axis we considered developments that are expectable from the possible beneficiaries in order to fulfil EU and national legislation.

For Sustainable lifestyle and consumption priority axis we based the target figures on the harmonization of the market needs and available funds.

8.3.1. Improving quality of life by pollution reduction - indicators

WST-I.	MUNICIPAL SOLID WASTE QUANTITY BY METHOD OF TREATMENT **Measure:** kg/person/year						
Def.:	The indicator measures those results of EEOP procedures that show to what degree it was possible to increase the proportion of recycling and incineration in relation to depositing in landfill. The tracking indicator figure (column M) shows the proportions of waste management by 2015 including only EEOP investments in the country. The evaluation indicator figure (column E) shows the proportions of waste management by 2015 including investments in the country outside the scope of EEOP as well.						
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**	**Predicted target figure considering all national investments (E)**
Source:	**Municipal Solid Waste (MSW) strategy**					**SMIS**	**HCSO**
		2004	**2005**	**2006**	**2007**	**2015**	**2015**
HUN	Reused and recovered (also composted)	45	59	74	160**	159	250
	Energy recovery	n.a.	n.a.	n.a.	0	22	22
	Incinerated	42	42	42	42	42	42
	Landfill	384	n.a.	n.a.	310	289	270

* Calculating 9,8 million people as the population of Hungary in 2015 (Europe in figure, Eurostat yearbook 2006-2007)

** The significant increase is due to the new capacities launching as a result of implemented ISPA projects.

WST-II.	NUMBER OF WASTE MANAGEMENT PROJECTS (EU CORE INDICATOR (27)) **Measurement:** piece					
Def.:	The indicator measures the number of EEOP waste management projects.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	60

WW-I.	PROPORTION OF HOUSEHOLDS SUPPLIED WITH PUBLIC SEWERAGE **Measurement:** %						
Def.:	The indicator measures those results of EEOP operations that show to what degree it was possible to provide modern wastewater-collection systems for the population in agglomerations of sewage collection of above 2000 PE contaminating material emission. The tracking indicator figure (column M) shows the proportion of waste water treatment by 2015 including only EEOP investments in the country. The evaluation indicator figure (E) shows the proportion of waste water treatment by 2015 including investments in the country outside the scope of EEOP as well.						
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**	**Predicted target figure considering all national investments (E)**
Source:	**HCSO**					**SMIS**	**HCSO**
	1994	**1998**	**2002**	**2004**	**2005**	**2015**	**2015**
HUN	43	48	56	62	65	80	89
EU-25			83				
V-4			58,3				

WW-II.	PROPORTION OF WASTEWATER CONNECTED TO THE PUBLIC SEWERAGE TREATED BIOLOGICALLY **Measurement: %**						
Def.:	The indicator measures those results of EEOP operations that show to what degree it was possible to treat the wastewater collected via sewerage with 2nd level treatment						
						Predicted target figure as result of EEOP operations (M)	**Predicted target figure considering all national investments (E)**
Source:						**SMIS**	**HCSO**
	1994	**1998**	**2002**	**2004**	**2005**	**2015**	**2015**
HUN	38	48	58	67	66	100	100

WW-III.	NUMBER OF INHABITANTS INCLUDED IN WASTEWATER PROJECTS **(EU CORE INDICATOR (26))** **Measurement:** million (person)					
Def.:	The indicator measures those results of EEOP operations that show to what degree it was possible to provide the population with modern waste water collection systems.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	1,30

DW -I	NUMBER OF INHABITANTS SUPPLIED WITH SATISFACTORY QUALITY DRINKING WATER **Measurement:** million (person)						
Def.:	The tracking indicator figure (M) shows the proportion of population provided with adequate quality drinking water by 2015 including only EEOP investments in the country. The evaluation indicator figure (E) shows the proportion of population provided with adequate quality drinking water by 2015 including investments in the country outside the scope of EEOP as well.						
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**	**Predicted target figure considering all national investments (E)**
Source:	**Based on Annex 6 of 47/2005. (III.11) Gov. regulation**					**SMIS**	**MoEW**
	1994	**1998**	**2002**	**2004**	**2006**	**2015**	**2015**
HUN			7,46			9,38	9,80

* Calculating 9,8 million people as the population of Hungary in 2015 (Europe in figure, Eurostat yearbook 2006-2007)

8.3.2. Protection and conservation of natural values - indicators

WMW	PROPORTION OF ECOLOGICALLY ADEQUATE SURFACE WATER AND GOOD QUALITY SUBSURFACE WATER **Measurement:** %				
Def.:	The indicator measures the proportion of surface waters achieving good ecological condition and that of underground waters.				
	Starting value (E)			**Predicted target figure considering all national investments (E)**	
Source:	**Year 2005 WFD report**			**WFD report**	
			2004	**2009**	**2015**
HUN	**Surface waters**	**Based on hydro-morphological risk**	55	55	65
		Based on chemical risk	38	46	62
	Underground waters*	**Based on chemical risk**	57	-	59
		Based on quantity risk	97	-	98

*The target condition evaluation of underground waters is measured through the monitoring system facilities appointed by WFD, based on the positive change in the quality and quantity regarding the given parameters.

NPROT -I.	AGGREGATE CHANGE OF NATURE CONSERVATION SITUATION OF HABITATS AND SPECIES IN THE ANNEXES OF THE HABITAT DIRECTIVE **Measurement:** %					
Def.:	According to Article 17, Member States have the obligation to report every six years (2006, 2012, 2018) on the nature conservation condition of habitats listed in annex I and that of the species listed in annex II, IV and V. The first report is due in the 1st half of 2007 about the period of 1994-2006. The 1994 situation is regarded as starting point (100%). The changes between 1994 and 2006 are listed in the 2007 report, which will be presentable in the column of 2006. The report will characterize the situation of various species and habitats with a totalled parameter that can be three ranks (favourable, unfavourable, neutral). With the totalling of these parameter values, only one indicator is obtained that will show how the nature conservation situation of the total of observed species and habitats changed in the given time period.					
	Starting value(E)					**Predicted target figure considering all national investments (E)**
Source:	**MoEW**					**MoEW**
	1994	**1998**	**2002**	**2004**	**2007**	**2013**
HUN	100				100	110

NPROT - II.	EXTENSION OF AREAS AFFECTED BY HABITAT RESTORATION AND DEVELOPMENT **Measurement:** ha					
Def.:	The indicator measures, as result of EEOP operations, to what degree the size of areas involved in reconstruction and development of habitats increased.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	30 200

NPROT - III.	EXTENSION OF AREAS (WITH INFRASTRUCTURAL DEVELOPMENT) SATISFYING THE CONDITIONS OF NATURAL FOREST AND AGRICULTURAL MANAGEMENT **Measurement:** ha					
Def.:	The indicator measures, as result of EEOP operations, to what degree the size of areas satisfying the conditions of semi- nature forest and agricultural management increased.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	180 000

FLD-I.	PROPORTION AND NUMBER OF POPULATION WITH ADEQUATE FLOOD DAMAGE PROTECTION (IN LINE WITH LEGISLATION) COMPARED TO THE NUMBER OF THOSE AFFECTED (EU CORE INDICATOR (32)) **Measurement:** million (person), %						
Def.:	The indicator measures those results of EEOP operations that show to what degree the proportion of the population with adequate flood damage protection (in line with legislation) increased compared to the number of population potentially affected by flood damage (~2.3 million). The tracking indicator figure (M) shows the proportion of the population with adequate flood damage protection by 2015 including only EEOP investments in the country. The evaluation indicator figure (E) shows the proportion of the population with adequate flood damage protection by 2015 including investments in the country outside the scope of EEOP as well.						
	Starting value(E)					**Predicted target figure as result of EEOP operations (M)**	**Predicted target figure considering all national investments (E)**
Source:	**MoEW**					**SMIS**	**MoEW**
	1994	**1998**	**2002**	**2004**	**2006**	**2015**	**2015**
HUN					0,94 (41%)	1,63 (71%)	1,63 (71%)

FLD-II.	NUMBER OF FLOOD PREVENTION PROJECTS (EU CORE INDICATOR (31)) **Measurement: piece**					
Def.:	The indicator measures the number of EEOP flood protection projects					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	40

ECOWTR	CHANGES IN THE ECOLOGICAL STATE OF WATER BODIES REQUIRING PRIORITY TREATMENT **Measurement:** %						
Def.:	As the results of EEOP operations, the indicator measures the change in the ecological condition regarding the waters involved (parameters in total)*.						
						Predicted target figure as result of EEOP operations (M)	
Source:						**SMIS**	
					2007	**2009**	**2015**
HUN					0	12,5	50

*The positive effects of the 8 high priority developments to the ecological condition based on the 5-grade ecological assessment. E.g., if by 2009 two out of 8 steps up a grade, then the improvement is 25%.

REC	NUMBER OF RE-CULTIVATED LANDFILLS **Measurement:** piece					
Def.:	The indicator measures the results of EEOP operations that show to what degree it was possible to re-cultivate the old, technically not adequate landfills continuously endangering population and environment. (In addition to the ISPA developments, 2232 landfills need to be re-cultivated in the country.)					
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**
Source:						**SMIS**
					2007	**2015**
HUN					0	1500

REM	VOLUME OF CONTAMINATED GEOLOGICAL MEDIUM THAT HAS BEEN RECULTIVATED (INCLUDING UNDERGROUND WATER **Measurement:** thousand m^3					
Def.:	The indicator measures, as result of EEOP operations, the volume of remediated contaminated geological environment (involving underground waters). (The exact definition of the indicator needs to be detailed: based on contaminating materials, contaminated environment, and location – the exact definition is included in the Action Plan. The chart shows cumulated data, the direct results of EEOP could be achieved by subtracting the 2006 data.					
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**
Source:	**MoEW ***					**SMIS**
	1994	**1998**	**2002**	**2004**	**2006**	**2015**
HUN	228	760	1710	2660	2755	3305

***** The listed data are estimates since the ministerial regulation making possible the data collection (in m3 and m2 values) is to be effective in 2007.

8.3.3. Prevention economy, efficiency - indicators

RENE-I.	PROPORTION OF RENEWABLE ENERGY WITHIN TOTAL ELECTRICITY CONSUMPTION **Measurement:** %								
Def.:	The indicator measures, as result of EEOP operations, to what degree renewable energy based electricity production increased within the total electricity consumption. The tracking indicator figure (M) shows the proportion of renewable energy by 2015 including only EEOP investments in the country. The evaluation indicator figure (E) shows the proportion of renewable energy by 2015 including investments in the country outside the scope of EEOP as well.								
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**		**Predicted target figure considering all national investments (E)**	
Source:	**Electricity Statistical Yearbook (ESY)**					**SMIS**		**(ESY)**	
	1994	**1998**	**2003**	**2004**	**2005**	**2010**	**2015**	**2010**	**2015**
HUN	0.6	0.7	0.9	2.3	4.6	5.4	6.5	6.3	8.7
EU-25	~13	~13	14.8					22.1	

RENE-II.	RENEWABLE ENERGY SOURCE BASED ELECTRICITY PRODUCTION (EU CORE INDICATOR (24)) **Measurement**: GWh/y RENEWABLE ENERGY CONSUMPTION **Measurement:** PJ/year (total energy)						
Def.:	The indicator measures the production of electric energy produced from renewable energy sources, and total renewable energy (electric + heat energy) as a result of capacities established by EEOP operations.						
						Predicted target figure as result of EEOP operations (M)	
Source:						**SMIS**	
					2007	**2010**	**2015**
HUN	Electric energy				0	566	1169
	Total energy				0	27	41

RENE-III	NUMBER OF RENEWABLE ENERGY PROJECTS (EU CORE INDICATOR (23)) **Measurement:** piece					
Def.:	The indicator measures the number of EEOP renewable energy projects					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	600

RENE-EI	REDUCTION IN GREENHOUSE GAS EMISSIONS (EU CORE INDICATOR (30)) **Measurement:** KT/year					
Def.:	The indicator measures, as a result of EEOP operations, within the operations aiming at improving energy efficiency and the spread of renewable energy resources regarding the total of developments implemented between 2007 and 2013 to what degree the emission of greenhouse effect gases is reduced by 2015.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	3134

EI -I.	ENERGY INTENSITY **Measurement:** kgoe/€1000					
Def.:	The indicator measures, as a result of EEOP operations, to what degree the energy consumption changed per GDP.					
	Starting value (E)					**Predicted target figure as result of EEOP operations (M)**
Source:	**EUROSTAT**					**EUROSTAT**
	1996	**1998**	**2000**	**2002**	**2004**	**2015**
HUN	747	662	601	580	534	~350
EU 25	235	224	209	207	205	
EU 15	209	201	191	188	187	

EI-II.	ENERGY RESOURCES SAVED THROUGH ENERGY EFFICIENCY **Measurement:** PJ/year					
Def.:	The indicator measures, as a result of EEOP operations, within the operations aiming at improving energy efficiency regarding the total of developments implemented between 2007 and 2013, what degree energy saving accumulates by 2015.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	11.0

SLC -I.	PERCENTAGE OF „COMMITTED" ENVIRONMENTALISTS ACCORDING TO EUROBAROMETER **Measurement:** %						
Def.:	The indicator measures the proportion of "dedicated" environment protectionists. According to the survey of "Environmental attitude of European citizens" "*dedicated environmentalists*" are the people who as they declare sometimes/often make efforts for their environment and are also convinced of the effectiveness of their efforts.						
	Starting value (E)					**Predicted target figure considering all national investments (E)**	
Source:	**EUROBAROMETER**					**EUROBAROMETER**	
	1992	**1995**	**1998**	**2001**	**2004**	**2010**	**2015**
HUN					12	20	22
EU 25					17		

SLC-II.	NUMBER OF PEOPLE REACHED BY CAMPAIGNS AND MODEL PROJECTS ACCORDING TO THE TYPES OF ACTIVITY **Measurement:** thousand people					
Def.:	The indicator measures the results of EEOP operations that show how many people were reached by the campaigns and model projects promoting more sustainable consumption possibilities. (The table contains cumulative target figures: a person is taken into account in the statistics as many times as they encountered any communication activities of the "sustainable lifestyle and consumption" priority axis) .					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN	Short term / Passive participation				0	70 000
	Long term / Passive participation				0	20 000
	Short term / Active participation				0	120
	Long term / Active participation				0	10

8.3.4. Implementation of EEOP - indicators

EMP	EU EMPLOYMENT CORE INDICATOR **Measurement:** thousand people						
Def.:	Number of established new employment: male employee/female employee.						
						Predicted target figure as result of EEOP operations (M)	
Source:						**SMIS**	
						2013 (FEMALE)	**2013 (MALE)**
HUN							

PPP	NUMBER OF PREPARED PROJECTS **Measurement:** piece					
Def.:	The indicator measures the number projects prepared under the project preparation priority axis					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	350

TA	RATE OF IMPLEMENTATION OF SUPPOPRTED PROJECTS **Measurement:** %					
Def.:	The indicator shows the rate of supported (positive decision on support) and the implemented (closed projects) investments.					
						Predicted target figure as result of EEOP operations (M)
Source:						**SMIS**
					2007	**2015**
HUN					0	90

HORIZ	HORIZONTAL INDICATORS
Def.:	The favourable or unfavourable changes of territorial and social cohesion at the Operational Programme level are studied in the territorial division of relevant indicators.
Indicators studied in territorial division	**HST-I.**
	WW-I.
	DW-I.
	FLD-I.
	REC
	REM
	RENE-I.
	EI-II.

8.4 Consultations-in-partnership

During the creating of the Operational Programme, in the co-ordination of the Ministry of Environment and Water an intense consultation took place with the social partners, the regional agencies as well as with the European Commission. The consultations were conducted, on one hand, at the FKTB (Inter-ministerial Committee for Development Policy Co-ordination) and its work organizations' meetings, on the other hand during separate on site discussions.

The purpose of the public debate of the Operational Programme was to make the documents of the Programme accessible and available for consultation for the widest public, which documents therefore were available on the website of the Ministry of Environment and Water. The first round of the consultation-in-partnership took place from the 17th until the 27th of March 2006. During the meeting, 30 social, professional organizations were especially invited to participate in the debate of the document. 17 organizations had sent back their evaluation of the document.

Beyond the entirely open and time limited consultations-in-partnership, from the commencement of EEOP planning, there is opportunity to express opinions and regard them on various forums and conferences. Among these the most important ones are:

- Workshop debate making the foundation for the environmental objectives of the national strategic reference framework (NSRF), MoEW, 25 October 2005.
- Co-ordination Forum for the Strategic Environmental Assessment of the Environmental Operational Programme that took place with the involvement of a wider partnership circle than defined in the MoEW Decree, March 6th 2006.
- Conference on "National Plans and their environmental aspects for 2007-2013" March 30th 2006.
- Sectoral co-ordination forum organized by the National Development Agency, November 6th 2006.

The second round of consultations-in-partnership was announced to take place between 8-12 June 2006 but considering the summer time, social remarks were accepted all throughout July. Within this, lots of opinions came in about the EOP 0.07 version. The strategic environmental assessment was prepared for this version and the ex-ante evaluation also took off along the lines of it.

A thematic questionnaire was put together for the conduct of the second round or consultations-in-partnership, whose evaluation in many cases made possible the evaluation of opinions. The 10-page questionnaire contained 23 thematic questions and complying with the division of all chapters and sub chapters even more. In addition to the closed questions, we requested an independent, freely conveyed text remark in the case of all main chapters and priorities.

The filled in questionnaires contained approximately 600 independent substantial remarks, out of which about 140 were related the situation assessment, 100 about the target system and approximately 250 concerning the individual priority axes. Most of them, that is 90, were

related to “Healthy, clean settlements” priority axis, the rest of the remarks were related to implementation, financial charts and indicators.

Nearly one quarter of the received remarks were accepted and built into the next version of the OP (e.g. the situation assessment was restructured and recomposed, the drinking water quality improvement actions were returned to EEOP, the planning of well thought over implementation of waste management actions is being done on a nation wide strategic level in the new version). Naturally, smaller, and larger proposals on the wording were also considered based on the received remarks. We agreed with the other, nearly one-quarter of the remarks as well, but we thought that the given issue was already present in OP to an adequate degree, therefore further detailing and inclusion of them are not justified. Finally, in case of almost half of the comments, we had to conclude that finding a solution to the problem raised is either not EEOP’s competence (e.g. national level problems of planning, expectations regarding the details of implementation, issues of law making/enforcement) or following consultation with the experts we did not agree with the proposed change, therefore the remark was not built into EEOP.

The third round of consultation-in-partnership was arranged by the National Development Agency between 18 October and 8 November 2006. The government announced for social debate the operational programmes in connection with the New Hungary Development Plan, among these the government approved version of EEOP (Environment and Energy Operational Programme). Contributions were made possible using an attached questionnaire.

About 400 remarks, proposals were delivered from professional, interest representation and social organizations and from delegates of the economy, municipal, science and non-governmental domain.

Due to the previous ongoing discussions, only few such new opinions arrived whose inclusion into EEOP were considered necessary. 10% of remarks were in connection to the financial charts, out of which most of them aimed at increasing the degree of energy efficiency. Many issues did not belong to the competence of the Operational Programme and many remarks had to do with the phrasing of the action plan, these were considered during the composition of the Action Plans.

The processing of opinions heard at the consultations-in-partnership, forums and conferences helped improving the Environment and Energy Operational Programme. The remarks and propositions of partners and evaluators in compliance with the consensus during the discussions were considered and built into the formulation of the Operational Programme.

Partnership of the major projects is implemented on two levels. First, the list of major projects appearing in the action plans will be open to public discussion during the SEA of the action plans. Second, major projects having significant impact on the environment potentially need impact assessment, which means that partnership is also implemented in the environmental impact assessment.

8.5 Results of the ex-ante evaluation

The National Development Agency of the Prime Minister’s Office gave the assignment for the ex-ante evaluation of the Environmental Operational Programme to the organization winning at the public procurement application at the beginning of June 2006. The thematics of

the ex-ante evaluation were completed in June thus the ex-ante evaluation of EEOP (EOP) could commence.

During the ex-ante evaluation, the declarations of evaluators were proved correct and therefore were included in the EEOP at the end of August. The situation assessment of EEOP was entirely restructured according to the proposals in the preliminary ex-ante report and was rewritten based on the remarks of the ex-ante evaluators and other contributors (Brussels Committee, SEA (Strategic Environmental Evaluation) evaluators, social partners). The consistent cause-effect (original causes, state, consequence) correlation chains were included into the document with this modification.

The final draft of EEOP ex-ante evaluation was completed by the middle of September, resulting in the modifications of the OP in the following most significant areas:

- Standardization of chapters presenting priority axes, actions (in the fields of nature conservation, energy efficiency, renewable energy, and encouraging sustainable protection).
- Presenting connection to strategies and planning documents.
- Establishing indicator structure describing target system and priority axes, finalizing indicators.
- Illustrating horizontal criteria.
- Clarification of numerical data and establishing consistency with the text.
- Demonstrating lessons learned from the European Union sources utilization.

Based on Article 37 section b) of the General Regulations, the declarations of the ex-ante evaluation on the reasoning of EEOP priorities must be demonstrated in the OP, therefore the chart in the "2.2.5 Reasoning of EEOP priorities based on the most important planning and strategic documents" chapter lists them in a separate line.

According to the summary of the ex-ante evaluation:

In its entirety it can be concluded that EEOP, shaped as the result of the planning process taking into consideration the partnership results and the recommendations of the ex-ante evaluation, complies with the main prerequisites included in Article 37 of General Regulations. The priority axes comply with the Community and national priorities composed by EU regulations, guidelines, action plans and the national documents.

The three distinguished areas (waste management, wastewater treatment, drinking water quality improvement) of EEOP's largest financial part, the priority axis of Healthy, Clean Settlements serve the accomplishing of related EU Directives that appear in the national environmental policy documents as well. Regarding the consideration of the environment but mostly sustainability, instead of prevention (priority axes of increasing energy source utilization, efficient energy utilization and the sustainable lifestyle and consumption habits) these infrastructure developments within the OP get larger emphasis, but the Lisbon objectives of the EU support exactly this, since these are considered of favourable effect regarding the objectives of the present economic policy. EEOP in its entirety is going to have neutral or a smaller degree effect to the macro-economical balance thus to the implementation of the New Balance Programme and the achievements of the Lisbon objectives.

EU guidelines put an emphasis on the risk prevention actions, along whose lines EEOP assigned flood protection, remediation and water bases protection developments (priority axis of good management of our waters). The accentuated priority of EU and national environmental policy is the implementation of the Water Framework Directive within which EEOP is realizing complex water management projects and monitoring and communicational developments. Both EU and national objectives justify the implementation of all the actions of the priority. Certain actions relating to the Water Framework Directive e.g. hydro-morphological actions, were included in ROPs, as the consequence of which, in order to achieve EU objectives, increased co-ordination of this special field must be realized.

Most important remaining problems and proposals:

1. From the aspect of sustainable development, currently the major danger is the fact that the funds, due to the sudden abundance of sources, are used for the servicing of such structures that are not sustainable. Therefore, the causes of the real problems remain, which also means that end-of-pipe solutions preserve the structures representing the causes of the environmental problems and assist in reproducing them on a larger scale.

   Answer:
   Strategic justification of EEOP developments concerning sustainability and end-of-pipe solutions is in section 2.2.5:
   "Incorporation of environmental aspects to serve economic growth in the long-term means development of prevention type, but these developments will only produce the desired effects if "end of pipe" solutions for environmental damage prevention are sufficiently disseminated in the operation of society and economy. In preventive environment protection, the fulfilment of our obligations undertaken in the Accession Treaty is the basis for starting to ensure the sustainable use of the environment by strengthening the environmentally efficient production and consumption structures."

2. "Solutions" squeezed between limitations by the regulations frequently cannot manage national ecological and social differences and force uniformity on environmental systems representing different conditions and opportunities.

   Answer:
   Evaluation and assessment for projects funded by EEOP are based on the results of feasibility study that relies on well established information, and done by detailed guide. The feasibility study contains the analysis of the zero-alternative and two technically realistic alternatives, which have to consider the local ecological and social characteristics. Each priority axis and operation of the EEOP ensures that during project preparation the alternative best fitting local conditions can be supported.

3. Since EEOP is a programme for improving the quality of society, therefore it is necessary to weigh the effects on the society of the environmental actions implemented so far. We cannot find such evaluation in the situation analysis, the document takes for granted that the environmental actions have a beneficial effect on the sustainability of society.

   Answer:
   Strategy and development of the EEOP were determined by national and international development policy documents, according to section "2.2 EEOP Development Strategy" (see also the table following section 2.2.5). These development policy

documents guarantee the proper direction of the strategy on macro level both from environmental and social aspect, whereas on micro (project) level the compulsory parts of the project preparation (feasibility study) ensure the principle of sustainability.

4. The more significant deadlines and source requirement of their implementation deriving from EU derogations and Directives would be necessary to present. The implementation deadline of numerous EU environmental objectives (e.g. Wastewater Programme) is up in this financing period. These developments should be highlighted more especially if the failure to implement them could involve sanctions.

   Answer:
   The most important deadlines for EU derogations and directives can be found in Annex 8.2. The accomplishments of EEOP are shown by the target figures in Annex 8.3, the financial source needs are described in Chapter 4 “Financial table”.

5. The chapter regarding the implementation of EEOP has changed many times during planning. The current version, as opposed to the previous ones, is having the same contents as regards the OPs that were prepared by NDA providing the MAs. As opposed to subsidiarity, even though MoEW is not the Managing Authority, its competencies and tasks must be included in EEOP.

   Answer:
   The final version of the implementation chapter of EEOP does not contain the scope of authority and role of MoEW specifically. The text of the OP defines these as for the ministry concerned with the implementation of the OP:
   - According to section 6.1.3 cooperates with the IB in the preparation of call for proposal and support contract
   - According to section 6.2.1 takes part in the Monitoring Committee

8.6 Results of the Strategic Environmental Assessment

In order of sustainability and enforcement of evaluation of environmental aspects, furthermore for enforcement of adherence of legal regulations (2001/42/EC Parliament and Council guideline, and its adaptation by the member state: 2/2005 (I.11) Government Decree on environmental assessment of certain plans and programs) the National Development Office (predecessor in title of the National Development Agency) prepared the Strategic Environmental Assessments on the Operative Programs. The aim of the Environmental Assessment is to enforce strategic environmental assessment of the EEOP

8.6.1 Official Statement

This section sums up the conclusions of the Strategic Environmental Assessment of the OP, with regard to how environmental considerations have been integrated into the Environment and Energy OP, how the environmental report was prepared, the opinions expressed and how the results of evaluating potential transboundary effects were taken into account, and the reasons for choosing the programme as adopted, in the light of the other reasonable alternatives dealt with. Moreover, this section summarises the measures decided upon for monitoring significant environmental impact.

This section is the official statement of the Hungarian Government related to the operational programme adopted, based on article 11 of Hungarian Government Decree 2/2005 (I.11.) "The environmental assessment of certain plans and programs" and based on Article 9 of the Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment.

6.6.2 The process of the strategic environmental assessment for the OP

In order to facilitate the application of the sustainability and environmental aspects, as well as to comply with legal regulations (Directive 2001/42/EC – hereafter Directive – and its national adaptation, Hungarian Government Decree 2/2005 (I.11.) – hereafter Government Decree), strategic environmental assessments (SEA) for the operational programmes have been commissioned by the National Development Office (predecessor organisation of the National Development Agency, hereafter NDA). The objective of the environmental assessment was to encourage in cooperation with the ex-ante evaluators and the social partners, the integration and application of environmental and complex sustainability aspects during the preparation process for the NHDP's operational programmes.

During the SEA process, special emphasis was put on consultation, communication with partners and presenting partners' ideas to planners.

The NDA, being responsible for drawing up Operational Programmes, selected a consortium through open public procurement to carry out the SEA procedure;[45] this consortium was led by Respect Kft.

The methodology of the SEA report, based on Annex 4 of the Government Decree, and Annex 1 of the Directive was available to be viewed by official and social partners (according to Article 7 of the Government Decree), and was discussed at a partnership forum on 19 June 2006. Official bodies (stipulated by Annex 3 of the Government Decree), representatives invited from NGOs and scientific organizations, as well as government bodies participated at the forum, some of whom also submitted their opinion in writing.

In line with approved methodology, the preparation of the SEA has been supported by documented reconciliation with the planners.

The preparation of the Environment and Energy Operational Programme yielded several opportunities for official, state and social partners to put forward their opinion, especially on environmental and sustainability issues, as follows[46]:

During the first partnership of the EEOP (between 18 October 2006 and 8 November 2006, social partners were notified by post about the implementation of, among others, their environmental comments between 14 February 2007 and 31 May 2007).

In the process of the ex-ante evaluation (the official participating bodies of the process)

In the process of the SEA evaluation (civil organizations and bodies taking part in the interviews and forums of the SEA).

The consultation of the SEA Report and the OP (between 15 November 2006 and 14 December) was open to any social stakeholder, and specific invitations was sent to the main environmental authorities and NGOs.

The above processes were based on the same draft of the OP (16 October version). The text of the OP was completed while incorporating the findings of all of the consultations.

[45] Other members of the consortium were: Corvinus University of Budapest (Department of Environmental Management and Technology, as well as the Department of Landscape Planning and Regional Development), Environment Awareness Corporate Management Association and BFH Európa Kft.

[46] The process also provided the opportunity to mediate discussions between the SEA evaluators and the planners.

During SEA consultations (15 November – 14 December 2006), open for all, where relevant environmental NGO's and state organizations were directly addressed). In accordance with Article 8 of the Government Decree and Article 6 of the Directive, the SEA report was subject to consultation from 15 November 2006 for a 30-day period. The consultation was made available to the general public on the NDA website and in a national newspaper.
During SEA consultation, the NDA provided a multi-channel option for receiving partners' comments: partly on the website of the NDA and partly through a web interface. In case of the EEOP, a forum was held on 28 November 2006, with the participation of the organisations defined by the Government Decree.
The comments on the SEA of the EEOP reconfirmed most of the findings of the SEA, and suggested some further issues. After amending the SEA report in accordance with the consultation, the SEA team discussed the new version with the planners. Following these negotiations, final versions of Operational Programmes were handed over to the Commission. Following the submission of the programme, the NDA published the final SEA report and a summary, which are available at the *www.nfu.gov.hu* website. The final SEA report clearly shows how the comments and responses have influenced the OP.

6.6.3 Summary of how environmental considerations have been integrated into the programme[47]

A detailed and comprehensive evaluation on the development of the EEOP as a result of the SEA can be found in the following report: "A Környezet és Energia Operatív Program környezeti vizsgálata". This document can be downloaded from the website of the NDA.

[47] According to Article 11(b) of the Government Decree, and Article 9.1.b. of the Directive

The main conclusions of the SEA and the position of the planners

Proposition	Responses Reasons for choosing the programme as adopted, in the light of the other reasonable alternatives dealt with[48]
In the KEOP (Environment and Energy Operative Programme) situation assessment, presentation of consistent cause-effect (original causes; status; consequence) chains is missing.	Planners of the OP have completely reworked the KEOP (Environment and Energy Operative Programme) situation assessment, based on ex-ante evaluators and the opinions of other parties (European Commission, SEA evaluators, social partners). By this amendment, presentation of consistent cause-effect (original causes; status; consequence) chains have been included in the material.
Some interventions may increase utilization and demand of natural resources and give rise to an increase of environmental burden, as well as start or reinforce unsustainable societal and/or economic processes.	According to this, the planners have presented in the KEOP implementation section the evaluation of horizontal policies – including sustainability – and the necessity of applying minimum sustainability criteria and created at several locations the foundations for action plan-level assessment and traceability.
Upon the implementation of various priorities, the issuance of calls for tenders must be performed according to a coordinated set of requirements, as well (e. g. apart from water management, the optimum operation of flood water reservoirs is extremely important from a nature protection aspect, as well).	This is aimed at by the selection and assessment considerations of action plans, their acceptance by the Monitoring Committee, and the project-level requirements regarding horizontal considerations (see Chapter 6).
In the field of information management, uniform handling of environmental information must be aimed at.	This is the objective of the 3rd measure of the 6. Sustainable lifestyle and consumption patterns priority axis, in accordance with the Aarchus Convention.
In order to increase the efficiency of current and future KEOP (Environment and Energy Operative Programme) measures, the opportunities for assessment and "feedback" of professional results, experiences must be created.	Measurement and assessment of indicators (Section 8.3), mid-term and ex-post evaluation of the OP as well as the annual review and rolling planning of the Action Plans every 2 years (see Chapter 6) serve for this purpose.
The most important among general proposals affecting the KEOP (Environment and Energy Operative Programme) approach is that the approach of sustainability and the principle of regional equality must be observed everywhere in other plans and development concepts influenced by the	This is aimed at by the project-level requirement for the implementation of horizontal considerations in the action plans (see in each OP, the chapter regarding implementation-related regulations).

[48] According to Article 11(b) of the Government Decree, and Article 9.1.b. of the Directive.

KEOP (Environment and Energy Operative Programme).	
In the implementation stage of interventions, for specific investment projects, specific attention must be paid for the preparation of action plan-level environmental assessment and facility-level environmental impact assessments (KVH). Preliminary evaluation of the expected effects of the interventions to Natura 2000 areas and the relationships between the areas must be conducted in each permit procedure and the public must be properly informed.	We have accepted the proposal, the following is stipulated by relevant legislation: preparation of environmental impact assessment, obtaining permits constitute and integral part of the tender application. No subsidy contract may be awarded in the absence of the latter.
Interventions in individual priorities provide remedies for real demands (waste management), however, according to the explanations given in the course of assessment, it is not satisfactorily justified whether the selected solutions are appropriate with respect to their short- and long-term effects and what justifies the significant shift in their financing proportions.	According to EU requirements, the condition of specific project subsidies is sustainability (environmental and financial) and economy (the best solution from the minimum amount of materials).
With regard to waste management or wastewater treatment, the assessment has identified the lack of an integrated presentation of prevention and reduction of the created waste or wastewater. The overall economic, environmental and societal efficiency of the planned large scale investment projects is not satisfactory and it has numerous negative effects on the environment. The emphasis should be placed on creating solutions adapting to local and regional characteristics.	Developments implemented in the area of waste management will be implemented on the basis of the new Municipal Solid Waste Strategy prepared at the beginning of 2007. In accordance with the SEA this strategy contains version analyses including societal, economic and efficiency considerations and takes into account all realistic technical solutions necessary for satisfying EU requirements. In the field of wastewater treatment, inspection of wastewater agglomerations serves for the efficiency of developments and the improvement of sustainability, as well: agglomerations will only remain intact if it is justified on the basis of technical and economic considerations, taking into account the opportunities in unique wastewater treatment solutions, as well.
The OP is deficient with regard to integration of the interventions, as well, because it continuously underfinances the shaping of awareness, reinforcement and development of frugal, energy-efficient approaches and practices and handles them separately from the issues of pollution and waste management. Thereby, it reinforces the effect	The OP includes individual preventive activities on a separate priority axis, in a separate financial line from “pipe-end” solutions, but the reason for this is merely technical, it does not signify the mutual separation of the two approaches. The task of awareness-shaping is achieved horizontally, under Item 2.2.2 (implementation of

that the treatment and processing capacity makes possible further pollution and production, thereby rendering the development of environmentally approaches and practices unsuccessful.	horizontal policies) on one hand and under the "6. Sustainable lifestyle and consumption" priority axis on the other hand, where project owners perform activities in relation to all environmental problems (water use, waste production, material savings, etc.), thereby complementing infrastructure developments.
As regards nature protection priority, it must be separately emphasized that the planned interventions only include a very narrow segment of problems and demands arising at a national level. Considering the high level of biological diversity and responsibility of the country, which is prominent even at a European level, we do not consider that the proportions between priorities and the extent of available resources have been properly determined, similarly with regard to sustainable consumption and production.	The principles fundamentally determining the OP planning (see above) impose limitations on the amounts that can be invested to nature protection and preventive environmental protection. Amounts to be invested for nature protection – although they represent only a fraction of the whole OP – have been distributed by prioritization of the country's environmental objectives, thus, it can be stated that they represent satisfactory support for the adherence to EU directives.
The SEA recommends the introduction and application of integrated regional evaluations, which are based on the assessment of regional ecological systems with the help of geographic information systems, as well as the analysis of spatial and temporal patterns (e.g. based on the MÉTA5 Programme). For each operational programme, detailed assessment criteria and a monitoring plan should be developed parallel to the development of action plans, containing the programme of measures to follow the SEA.	This will be incorporated into the monitoring system and the monitoring measures.

The social partners' and national authorities' main comments:

Proposition	Responses Reasons for choosing the programme as adopted, in the light of the other reasonable alternatives dealt with[49]
The developments affect of may affect nearly all municipalities and their institutions, most of the small and medium enterprises and numerous civic organizations. Therefore, upon establishing the target hierarchy of the KOP, by referring to the EU Environmental Action Program, it is important to emphasize the continuation of financial subsidy for environmental NGOs, thereby facilitating	Several sites may be beneficiary NGOs, however, their operating expenses cannot be financed from a EU source. Their participation is guaranteed in various levels of dialogues, see Chapter 6 (provisions pertaining to implementation).

[49] According to Article 11(b) of the Government Decree, and Article 9.1.b. of the Directive.

their participation in the dialog process.	
The requirements of establishing and conditions of scheduling industrial ecosystems should be included.	Industrial ecosystems have been included in the subpriority named "sustainable production methods" which has been transferred to the GOP (Economic Development Operational Program). The action plans will establish its time schedule.
Both authorities and NGO's emphasised the importance of monitoring, the role of civil control in implementation, and the minimum sustainability criteria in the project selection.	See section on Monitoring Measures

6.6.4 The SEA evaluation of big projects

According to the SEA, "the planned projects are likely to improve the present quality of local, regional environment, but they fail to target the real reasons behind, or drivers of, problems they handle. That is, neither waste management, nor waste water management projects contribute to the decrease of waste and waste water levels (they do not contain such elements). In the long run, in the changing social and economic environment, the operation of targeted waste management and waste water management systems are hard to optimise, go together with low-level but continuous negative environmental impacts, and do not facilitate steps towards sustainability."
Incorporating the suggestions of the SEA evaluation, the waste management projects contain elements preventing waste formation, too, e.g. improving conditions of home composting. The sustainable lifestyle and consumption priority axis also includes a programme for waste formation prevention. In the water utility sector the costs of environmentally appropriate operation will debit consumers that will directly lead to more efficient use of water as a natural resource.

8.6.5. Transboundary effects[50]

With regard to the strategic character of the OP and its detailed information content, it has been analysed in the course of the SEA process whether transboundary effects could be detected. It has been found that – according to the text of the OP – the territorial character of the planned strategic measures, and their implementation's influence on environment could not be identified by lack of specification, thus information on specific territorial effects – including transboundary effects – is not available.
The SEA pointed out that according to Article 4, Section 3 of the Directive, within the hierarchy of strategic documents primarily those sectoral strategic programmes, concepts should be analysed from this point of view, which had been prepared before the OP. However, lower than OP level documents (action plans, tenders) should also be investigated regarding transboundary effects, when relevant data become available. With the above considered, the Hungarian Government presented the NHDP-level plans – as a strategic frame above the OPs – at bilateral meetings with neighbouring countries' governments. Beyond this, a consultation document has been prepared on transboundary effects in the course of the SEA process of the OP's 2007–2008 Action Plans, which document has been sent to the

[50] According to 9. § of the Government Decree, and Article 7 of the Directive.

environmental authorities of all neighbouring countries. We commit ourselves to investigate cross-border effects on the Action Plan level in the whole 2007–2013 planning period.

6.6.6 Monitoring measures[51]

EEOP planners agree with the SEA that an unavoidable problem is posed at OP planning level, by the fact that certain objectives may act in contrary to each other. Therefore, the individual environmental effect of the application cannot be assessed based on the general text in agreement with SEA recommendations in EEOP action plans and during the implementation. This means that at further Operational Programme planning levels (action plans, calls for applications), sustainability aspects of possible alternative support solutions shall have to be considered on an individual basis. Therefore, relevant guarantees were introduced in the implementation section of the EEOP, with special regard to:

- sustainability criteria (minimum criteria for the acceptance of applications),
- the Sustainability Guide assisting the principle of sustainability,
- environmental organisation membership delegated to Monitoring Committees,
- evaluations targeted at sustainability and strategic environmental examinations for actions plans, as set forth by law.

Horizontal indicators, including environmental ones, will be regularly assessed as part of the OP monitoring and evaluation process.
These monitoring elements were built into the existing monitoring and management system of the EEOP to avoid duplication of monitoring.

8.7 List of Abbreviations

CBC	Cross Border Cooperation within the PHARE Programme
CF	Cohesion Fund
CSG	Community Strategic Guidelines
dB(A)	decibel
DPSC (FIT)	Development Policy Steering Committee
EAFRD (EMVA)	European Agriculture Fund for Rural Development
EEC (EGK)	European Economic Community
EC (EK)	European Community
EDB (EIB)	European Development Bank
EDOP (GOP)	Economy Development Operational Programme
EECF (EHA)	Energy Efficiency Credit Fund
EEOP	Environment and Energy Operational Programme (2007- 2013)
EFF (EHA)	European Fisheries Fund
EIOP (KIOP)	Environment Protection and Infrastructure Operational Programme (2004- 2006)
EOP (KOP)	Environmental Operational Programme
EPAOP (EKOP)	Electronic Public Administration Operational Programme
ERDF (ERFA)	European Regional Development Fund

[51] According to 12.§ of the Government Decree and Article 10. of the Directive.

ESDP	European Spatial Development Perspective
ESF (ESZA)	European Social Fund
EU	European Union
EUROSTAT	Statistical Office of the European Communities
EWC	European Waste Catalogue
FAVI-KÁRINFO	Damage elimination Information System, part of the environmental register of underground waters and geological layers.
FKTB	Committee for Interdepartmental Co-ordination of Operational Programmes
GEF	Global Environment protection Fund
GJ	gigajoule
GWh	gigawatt hour
ha	hectare
HAS (MTA)	Hungarian Academy of Science
HAWIS	Hazardous Waste Nation-wide Information System
HCSO	Central Statistic Office
HEFOP	Human Resources Development Operational Programme
IB (KSz)	Intermediate Bodies
ICT (IKT)	Information and communication technology
IOP (VOP)	Implementation Operational Programme
ISPA	Instrument for Structural Policies for Pre-Accession
kg	kilogram
LIFE	Instrument financier pour l'environnement
LSIF	Large Scale Infrastructure Facility
M	meter
MA (IH)	Managing Authority
MBH	mechanical-biological pre-handling
MEH	Prime Minister's Office
MoARD (FVM)	Ministry of Agricultural and Rural Development
MoET (GKM)	Ministry of Economy and Transport
MoEW (KvVM)	Ministry of Environment and Water
MoTTWM (KHVM)	Ministry of Transport, Telecommunication and Water Management
MSW (TSZH)	Municipal Solid Waste
Natura 2000	Ecological Network of European Union areas under special protection
NDC	National Development Council
NDA	National Development Agency
NDP 1	First National Development Plan (2004-2006)
NDP 2	Second National Development Plan (2007-2013)
NEPP	National Environment Protection Programme
NERP (OKKP)	National Environment Remediation Programme
NESP (NEP)	National Energy Saving Programme
NDPC	National Development Policy Concept
NHRDP (ÚMVP)	New Hungary Rural Development Programme
NHRDSP (ÚMVST)	New Hungary Rural Development Strategic Plan
NRPL	National Remediation Priority List
NSDCP (OSAP)	National Statistical Data Collecting Programme
NSRF	National Strategic Reference Framework
NUTS	Nomenclature of Territorial Units for Statistics
NWMP (OHT)	National Waste Management Plan

OECD	Organization for Business Cooperation and Development
OGY	Parliament
OP	Operational Programme
OPPCC	Operational Programme Programming Coordination Committee
p	person
PC	Public Companies
PE (LE)	population equivalent
PEEN	Pan-European Ecological Network
PHARE	Poland and Hungary: Assistance for Restructuring their Economies (PHARE) Programme of EU Funds for Central and Eastern Europe Countries (pre-accession fund)
PJ	petajoule
PM10	particulate matter: PM10 are particles with diameter smaller than 10 mm.
PPB (KDB)	Public Procurement Board
ppm	parts per million (concentration unit)
R&D	research and development
ROP	Regional Operational Programme
SEA	Strategic Environmental Evaluation
SF	Structural Funds
SFC	Structural Funds Common system
SIOP (TIOP)	Social Infrastructure Operational Programme
SME	Small and medium size enterprises
SMIS (EMIR)	Standard Monitoring Information System
SoROP (TAMOP)	Social Renewal Operational Programme
SROP (ÁROP)	State Reform Operational Programme
t	Tons
TA	Technical Assistance
TEN	Trans-European Railways
TJ	terrajoule
TOP (KÖZOP)	Transport Operational Programme
TWh	terrawatt hour
UN (ENSZ)	United Nations Organization
UN-EEC (EGB)	United Nations - European Economic Council
UNDP	UN Development Programme
UPPC	Unit for Public Procurement and Control
VRDP (VTT)	Vásárhelyi Re-Development Plan
WFD (VKI)	Water Framework Directive

8.8 Contribution of categorized sources from Union funds to the Operational Programme

OP CCI number: 2007HU161PO002

Name of Operational Programme: **Environment & Energy Operational Programme (EEOP)**

Data in Euros, at current price

Dimension 1: Priority topic

Code	€
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Code	€
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39	25 000 000
40	25 000 000
41	110 000 000
42	30 113 165
43	156 200 000
44	366 500 000
45	601 500 000
46	1 246 900 000
47	
48	26 900 000
49	
50	403 520 295
51	115 800 000
52	
53	795 779 705
54	208 503 964
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Code	€
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85	60 416 291
86	6 712 921
Total:	**4 178 846 341**

Dimension 2: Form of financing

Code	€
1	4 178 846 341
2	
3	
4	
Total:	**4 178 846 341**

Dimension 3: Territorial distribution

Code	€
1	2 183 800 000
2	
3	
4	
5	1 760 345 391
6	
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00	234 700 950
Total:	**4 178 846 341**