

**STATE ENVIRONMENTAL POLICY
OF THE CZECH REPUBLIC**

2004 – 2010

State Environmental Policy of the Czech Republic
© Ministry of the Environment of the Czech Republic
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THE GOVERNMENT OF THE CZECH REPUBLIC



RESOLUTION OF THE GOVERNMENT OF THE CZECH REPUBLIC OF MARCH 17, 2004 NO. 235

ON THE STATE ENVIRONMENTAL POLICY OF THE CZECH REPUBLIC

The Government

- I. **approves** the updated State Environmental Policy of the Czech Republic, contained in Part IV of material ref. no. 257/04 and modified in accordance with the comments of the Government;
- II. **requires** that
 1. the Minister of the Environment
 - a) prepare the final wording of the updated State Environmental Policy of the Czech Republic, in accordance with point I of this Resolution,
 - b) submit to the Government
 - ba) preliminary evaluation of fulfilling of the State Environmental Policy of the Czech Republic for the period from 2004 to 2006, by June 30, 2007,
 - bb) further updating of the State Environmental Policy of the Czech Republic, together with a report on fulfilling thereof, by December 31, 2010,
 2. the members of the Government and heads of the other central bodies of the state administration implement the priorities, tasks and targets following from the updated State Environmental Policy of the Czech Republic as set forth in point I of this Resolution,
- III. **delegates** the Prime Minister to submit the updated State Environmental Policy of the Czech Republic in accordance with points I and II/1a of this Resolution to the Chairperson of the Chamber of Deputies of the Parliament of the Czech Republic and the President of the Senate of the Parliament of the Czech Republic for the information of the relevant committees of the Parliament of the Czech Republic.

To be implemented by:
Members of the Government and
the heads of the other central bodies of the state administration

1. Vice Prime Minister
Mgr. Stanislav Gross, in his own hand

I. Introduction

The turn of the millennium has brought many important changes in practically all areas, including the environment. Progressing globalisation has led to increased interconnection in trends in the environment, the economy and social conditions. On the one hand, these facts have led to the potential for more effective achieving of synergic effects in implementing environmental, economic and social policies, both on a global scale and at a regional, national and local level; however, on the other hand, it increasingly requires a cross-sectional, horizontal approach to remaining and newly emerging problems. The need for mutual integration of the currently sectorally oriented activities in the long-term, medium-term and short-term has thus been incorporated into a number of fundamental international program documents adopted in 2001 – 2003, and requires suitable integration into national policies, strategies, conceptions and programs.



The necessity of updating the State Environmental Policy of the Czech Republic (hereinafter SEP CR), approved in Government Resolution No. 38 of January 10, 2001, is thus not based only on the obligations following from this Resolution, but also from the necessity of reacting to developments over the past three years, and especially the necessity of a more emphatic qualitative shift from the position of documents that are primarily sectoral towards a document that, in its very fundamentals, respects the requirements of sustainable development. Consequently, the updated SEP CR is conceived so as to define a consensual framework for long-term and medium-term directing of the development of the environmental dimension of sustainable development in the Czech Republic, which will become a member of the European Communities from May 2004.

The updated SEP CR is a response to incentives following from the results of the evaluation of implementation of the previous SEP CR and the need to preserve and, where possible, further improve the environment in the name of a good life for future generations of the inhabitants of the Czech Republic. Simultaneously, it respects the responsibilities that result from the membership of the Czech Republic in the European Union, as well as the existence of obligations connected with the membership of CR in the United Nations (UN), in the Organisation for Economic Cooperation and Development (OECD), etc. This document is based on experience gained in implementing earlier national strategic documents in the area of the environment (the Rainbow Program of 1990, SEP of 1995 and 2001) and tasks formulated particularly in:

- 6th Environment Action Program of the European Communities (6th EAP), adopted in Brussels on July 22, 2002,

- OECD Environmental Strategy for the First Decade of the 21st Century, adopted in Paris on May 16, 2001
- European Union Strategy for Sustainable Development, adopted in Gothenburg on June 16, 2001
- Declaration and Implementation Plan, adopted at the UN World Summit on Sustainable Development in Johannesburg on September 4, 2002
- Declaration of the Ministers of Environment of the region of the UN Economic Commission for Europe from the 5th Pan-European Ministerial Conference: “Environment for Europe” in Kyiv of May 23, 2003.

The basic purpose of SEP CR continues to be provision of a framework and guideline for decision-making and activities at an international, national, regional and local level, leading to:

- Achieving a further improvement in the quality of the environment as a whole and in the state of its individual components and parts
- Implementing the principles of sustainable development and continue in integration of environmental aspects into sectoral policies
- Improving the economic effectiveness and social acceptability of environmental programs, projects and activities.

The priority areas of the updated SEP CR are compatible with the 6th EAP. The greatest attention is paid to resolving ongoing and newly emerging environmental aspects in the following areas:

- Protection of nature, landscape and biological diversity
- Sustainable use of natural resources, protection of waters and protection against floods, optimisation of material flows and waste management
- Reducing the damage to the environment from human activities, improving environmental standards for the quality of human life
- Protection of the climate system of the Earth and prevention of long-range transport of air pollution.

However, it is also intended that the updated SEP CR should be a document for strengthening and improving partner cooperation with other sectors – corresponding to the principles of sustainable development. Consequently, the part concerned with sectoral policies attempts to predict areas of further cooperation that would not only contribute to better understanding and more effective integration of environmental aspects into the activities of partner ministries, but also support implementation of those targets of other sectors that are in accordance with the principles of sustainable development and assist in separating trends of economic development from the continuation of negative impacts of their activities on the environment.

Similarly as the previous SEP, the updated document also offers a range of instruments for achieving the set targets. It is assumed that, for each of these targets, a combination of regulatory, economic, institutional, organisational, informational, voluntary and other instruments will be selected in cooperation with all stakeholders to enable achieving of the required results with the lowest requirements on financial, human, technical and other resources. A set of indicators is proposed for monitoring the effectiveness and efficiency of implementing the updated SEP CR, corresponding to the indicators monitored in the framework of the European Union and OECD.

SEP CR is a fundamental reference document for other sectoral and regional policies from the standpoint of the environment. Although SEP CR is a governmental document, its implementation requires an active participation of the general

public, partners in the business sector, NGOs, science and research and others. SEP CR should be an inspiration and instrument assisting in their strategic and every-day operative decision-making, so as to lead not only to creation of new economic, social and cultural values, but also to an improvement in the quality of life and quality of the environment. The process of updating SEP CR was based on this intention from the very beginning as an informal, interactive dialogue between the Ministry of the Environment and its partners, which thus in fact became co-authors.

II. Initial Conditions

While the previous environmental policies were based on the political and economic changes, that occurred in the 90's, and were concerned with remedying damages caused especially in the 70's and 80's, this update takes into account the fact that CR has become a member state of EU in 2004. In this respect, this document is concerned mainly with the future, although it retains a necessary degree of continuity with the previous SEP.

1. Continuity of SEP CR

The strong deterioration of state of the environment at the end of the 80's, which occurred in CR as a consequence of central planning, under-estimation of scientific knowledge, ignoring of the principles of sustainability, evading democratic decision-making processes and the complete absence of a legal and institutional framework for protection of the environment, was stopped to a major degree in the 90's and in some respects even remedied. However, new issues are emerging with progressing economic transformation and European integration.

The state of the environment is regularly monitored and evaluated (annual reports of MoE submitted by the Government to the Chamber of Deputies of the Parliament of CR and the public) and consequently SEP CR reacts (see the following analysis) to all the important changes (negative trends) in the state of the environment. The following are examples of important problems:

- increase in recycling of batteries and storage batteries – especially Ni-Cd (improved network of collection sites, increased returns),
- inadequate control of the movement of hazardous wastes – improved reporting and inspection,
- increase in recycling of used oils – recovery of only 17% (decreased to half during the 90's), currently burned in unsuitable installations,
- high VOC emissions from the use of solvents and emissions from storage/transport of fuels, extending of technical measures (withdrawal of vapours, recuperation, etc.),
- high emissions of dust microparticules (PM₁₀), toxic metals, benzene and PAH – the pollution limit values are exceeded at many control points, remedial measures in areas with worse air quality,
- high concentrations of tropospheric ozone – over 64% of the population is exposed to elevated concentrations, target limits are exceeded, damage is caused to forest ecosystems,

- protection of forests against illegal devastation by harvesting of forests – there is an increase in unforested and unsecured areas, criminal recourse must be tightened up,
- the limit values for day and night noise levels are exceeded at sites located on the main transport routes, i.e. in half of 42 monitored locations,
- discharge of polluted and inadequately treated waste waters from point pollution sources, improvement of the quality and ecological state of surface waters,
- protection of non-built-up areas (agricultural land fund, land designated to fulfil the function of a forest) and the open landscape; at the present time, sufficient preference is not given to development of formerly built-up or devastated areas (“brownfields”),
- large number of high-risk environmental damages,
- protection of agricultural land against contamination by sludge from WWTP – creation of control networks, monitoring, enlightenment of users, an estimated 50% of sludge is unsuitable for agricultural applications.

SEP CR takes into account tasks and their time schedules, following from the obligation of CR to implement the requirements of European law in practice. A list is given in the following table (according to the relevant implementation plans):

Task	Deadline
Natura 2000 network – establishing of a regime of use of the territory, management plans (including SEA), the necessary legislation is still lacking	2004
Ensure that regional, microregional and local policies in selected fields and land-use plans are subject to environmental impact assessment according to EU Directive 2001/42/EC and the Aarhus Convention	on-going
Pollution of water by nitrates from agricultural sources – it is necessary to implement an action program and monitoring	2006
Recycling of material, including end-of-life vehicles – collection sites require improved equipment, there is a lack of suitable disassembling and processing centres, enlightenment	2006
Reducing the input of hazardous substances into surface and ground waters – it is necessary to prepare and implement action programs	2009
Care for river ecosystems (Water Framework Directive 2000/60/EC) – monitoring and planning (draft measures), public discussion (SEA)	2009
Construction of WWTP for 2-10 thous. E.I., reconstruction of WWTP for over 10 thous. E.I. - elimination of emissions of nitrogen and phosphorus in sensitive areas (i.e. all of CR), costs 80 bil. CZK	2010
Polychlorinated biphenyls (PCB/PCT) – inventories and control of equipment, decontamination and disposal, implementation of a “Plan of decontamination and disposal of equipment in inventories and PCB contained therein”	2010

Task	Deadline
Biodegradable solid municipal waste (BMW) – creation of separate collection and composting, gradual decrease in amount of BMW deposited on landfills to 75, 50 and 35% of the reference level (1995)	2010
Care for river ecosystems (Water Framework Directive 2000/60/EC) – achieving the required state (according to the definitions in the plans of the water courses, see previous phase)	2015
Decrease pollution levels at sites of exceeding the limits for protection of ecosystems: a) complete and implement the integrated program for decreasing emissions of regional programs b) prepare local programs to improve air quality	
Achieving of an 8% fraction of production of electricity from renewable sources to the gross consumption of electricity of CR.	2010

2. Legal, Economic and Administrative Framework of SEP CR

During the preparation for membership in EU, substantial changes occurred in 1999 – 2003 in the national legislation in the area of environmental protection, through which the European legislation (Acquis Communautaire) was transposed into the national legislation. The existing EC legislation must be transposed and implemented into the national legislation by the date of accession, i.e. by May 2004, with the exception of the agreed transition periods. Since 2001, a new regional administrative system has been in effect, leading to a substantial shift in competence to the newly formed regions (Act No. 129/2000 Coll., on the regions).

Another important factor is the development of the EC environmental legislation, which CR will be able to directly participate in and influence with accession of CR to EU. The existing EC legislation has been found to be poorly effective in many areas in recent years and criticism has frequently occurred of its incomplete implementation and inadequate enforcement in some member states. In these cases, the European Commission can commence disciplinary action for failure to comply with EC law, i.e. the infringement procedure, which can lead to a financial fine for the relevant member state. These procedures can apply to CR from the date of accession to EU and thus it is necessary to prevent these cases. The national environmental policy must take into account the prepared changes in the EC legislation. It concerns, e.g., a development in the area of chemical substances, climate change, management of industrial risks, protection of the environment in cities or inclusion of new problem areas and their support or direct implementation in EU (e.g. the protection of the land). The priorities that CR will primarily emphasise in EU in the area of the environment are as follows: protection of climate system of the Earth and the air, protection of the landscape, water, soil and mineral wealth, comprehensive management of chemical substances and preparations and sustainable consumption and production. These priorities are in accordance with SEP CR.

In past years, the economy has recovered, which was reflected in an annual increase in GDP of 1.5 – 2.5%. Public budgets are burdened by substantial costs caused by the necessity of approximating the level of the infrastructure to EU standards and also costs connected with the necessity of approximating the legal and institutional framework. Together with the in-

creasing social transfers, this creates a budgetary deficit and increases the fraction of public expenditures in GDP. However, these expenditures are only partly allocated to areas that can have positive multiplication effects in the long term. Consequently, the conception of the reform of public finances was approved in Government Resolution No. 624 of June 23, 2003. The expenditure ceilings and new allocation rules lead to more appropriate establishment of priorities and thus to increased effectiveness of budgetary allocations. In the framework of the state budget, there will simultaneously be an increase in program financing.

In 2001 – 2003, GDP (calculated according to parity purchasing power) will reach approximately 60% of the EU average. In order to ensure sufficiently rapid convergence of the Czech economy to the EU economic level, some currently existing barriers that are frequently the subject of criticism from international institutions and foreign investors must be removed. In addition to the lack of flexibility of the labour market, this also includes the corrupt environment, which deforms economic competition, the difficulty in enforcing the law and various administrative barriers. As the Czech economy will become part of the single European market, it is necessary to take these economic factors into account in formulating SEP CR.

The new EU policy concerned with more consistent protection of the consumers, the environment and human health is especially relevant for the private sector. Integrated product policy is becoming more important and economic instruments are being increasingly applied. It should be emphasized here that choice of these instruments remains entirely at the discretion of the member states, similar to allocation of competence and details of the administrative procedures.



The last area that requires fundamental changes is the collection and processing of information connected with protection of the environment and human health. Not only does Community law emphasise the access of citizens to information, but a number of Directives also contain requirements on specific monitoring and reporting, which must be carried out by the public administration and private sector. Obtaining of this information, its validation and especially utilization in the decision-making sphere places new demands on the state administration.

3. Time Framework

The State Environmental Policy of 2001 was prepared for only a two-year period because of the expected date of accession of the Czech Republic to the European Union. The updated State Environmental Policy has been prepared for the period to 2010, corresponding both to the 6th EU Environment Action

Plan of July 2002, and also to the OECD Environmental Strategy for the First Decade of the 21st Century of May 2001.

4. Basic Principles of Environmental Protection

At the present time, especially in developed countries, increased attention is being focused on the qualitative aspects of development and, in this connection, emphasis is placed on the necessity for sustainability. This is based on the classical, broadly conceived definitions as set forth in 1987 in the report "Our Common Future". Sustainable development has three dimensions – economic, social and environmental – and is a response to the new conditions in the contemporary world, where sustainable development is understood to mean development that meets the needs of the present generation without compromising the ability to meet the needs of future generations, and without detriment to other nations.

Increasing public consciousness of environmental issues

High public consciousness in the area of the environment is a basic precondition for successful implementation of the State Environmental Policy, and also of the National Strategy for Sustainable Development, which is currently being prepared. An increase in public consciousness of environmental matters leads the public, not only to greater understanding of the environmental connections of the economic and social life of society, but also to an increase in the quality of consumer decision-making, to an increase in the legal awareness of citizens and, as a consequence, also to improved quality of life.

In the framework of the concept of sustainable development, major groups of citizens were identified, that are primarily affected by the issue of sustainable development, i.e. also its environmental pillar. These groups are: NGOs, women, children and youth, minorities, local and regional governments, employees and their organisations, entrepreneurs, trade and industry, the academic community and farmers. These defined major groups must also be taken into account in improving the environmental awareness of the public.

Public participation

There are increasing attempts to apply direct democracy in the area of the environment; this entails **participation of individuals in decision-making processes** (participation in administrative procedures, holding of a referendum) SEA, EIA. Decision-making should be moved as close as possible to those who are directly affected by the intended activity (the principle of subsidiary). However, it is necessary to state that effective decision-making presumes a certain minimum qualification and must be rational. This is also connected with the development of human resources in the area of protection of the environment, which means not only preparation of professionals and administrators, but also broad environmental education and public awareness. This necessitates broad access of the public to information related to the environment and human health. This approach is frequently unacceptably limited with reference to business secrecy, etc.

Only educated and informed citizens and their representatives are capable of making the right decisions. Demagogy, manipulation of public opinion, inexact interpretation of facts, on the one hand, and negative points of view, suspicion and irrationality, on the other hand, are the greatest obstacles to ef-

fective environmental protection, which must create the framework for sustainable economic and social development. Consequently, SEP CR also introduces new targets in the areas of environmental education and free access of the public to information, and the use of new instruments, such as registers of pollution sources and hazardous waste production, integrated permits (IPPC), emergency plans, etc.

Public participation is an important principle, especially in relation to application of the principle of direct responsibility for protection against the detrimental effects of natural or industrial catastrophes. The public should participate increasingly in financing preventative measures, and this will simultaneously lead to greater public participation in decision-making on allocation of public funds.

Management of resources and sustainable consumption

Sustainable development is based on balanced utilisation of all resources, which are classified as natural, economic, social and human. Specifically, this means maximally prudent use of nonrenewable resources, such as industrial minerals and fossil fuels, and maximally careful management of slowly renewable resources, such as the soil and groundwater, with simultaneous preservation of biodiversity. Pressure for disproportionate exploitation of resources increases with global economic development as a negative consequence of globalisation. Natural resources are not exploited in relation to the potential rate of their renewal or to their limited supplies. Mobility of the labour force and an increase in working productivity are often achieved at the expense of social and human resources (erosion of traditional social structures, lowered birth rates, disintegration of the family, asocial behaviour, etc.) and of a cultural relation to the environment.

For renewable resources, their rate of regeneration must be respected; although biomass is a renewable resource, for example, the intensity of international fishing or wood harvesting (rainforests) is so high that it exceeds the rate of natural renewal of these resources. This alarming trend is multiplying with the increase in the populations of developing countries and the intensity of consumption in developed countries. Consequently, this SEP CR must emphasise **the principle of sustainable consumption and production** through a moral appeal for a change in consumer behaviour and through the use of economic instruments (prices, taxes, fees, etc.) to stimulate such changes.

Sustainable development must take into consideration the development of the human and social capital. This is connected with education, the state of health of the population and demographic development. Social capital includes institutions belonging both in the state sector and in the civic sphere, such as political parties, churches and civic associations and organisations.

The precautionary principle

Effective environmental policy must be based on scientific knowledge; however, where this knowledge is lacking or is accompanied by high uncertainty, the **precautionary principle** must be applied. Estimation of the carrying capacity of the environment must also be based on the precautionary principle. A decrease in the critical emission load, limiting concentrations, acceptable exposure, etc. must be achieved by decoupling the economic growth from damage to the environment and human health.

Where it is not possible to quantify the risk with sufficient accuracy or to enforce a controlled decrease in practice, it

is necessary to adopt stricter measures. For example, this means prohibition of high-risk technologies, complete exclusion of hazardous substances and their replacement, determination of the safe limits for utilisation of renewable resources (harvesting limits), etc. If the risks cannot be decreased, then they must be regulated, emissions must be prevented at the source, and the spreading of high-risk factors must be prevented (radioactivity, pathogens, GMO, etc.).

Preventative measures, or implementation of **the principle of prevention**, are more efficient and economically more effective than remedying damage in case of irreversible pollution of the components of the environment, exhausted resources, disturbed ecosystems and damaged health. Implementation of the principle of prevention is also of great importance in cases of natural catastrophes, which usually take the form of floods in CR. The principle of prevention must be constantly evolved and connected with enlightenment activities for the population.

However, in some situations, prevention is not possible. For example, after twenty years of effort, the Kyoto Protocol will not result in more than a 1% reduction in these emissions in the years 2008 – 2012 (compared to the reference year of 1990) and it is highly improbable that global warming can be completely prevented. Decreasing emissions at a national level will not solve this problem, because the emissions from CR correspond to 0.9% of emissions from industrially developed countries and approx. 0.5% of total global emissions of greenhouse gases. Here, according to the precautionary principle, SEP CR must also take into account the potential negative impacts on the environment, population and economy of CR. Consequently, SEP CR contains a number of individual targets and adaptive measures, which should assist in alleviating the probable negative impacts of climate change.

The polluter pays

Damage caused by an activity (mining, production, transport, consumption, etc.) and borne by a third party is designated as externalities. These third parties can be owners whose property is damaged by emissions from production, inhabitants, whose health is negatively affected by pollution of the environment, or society, whose common values (the air, water courses, nature, public areas, etc.) are damaged or destroyed by manufacturers or consumers. In a free (unregulated) market, these externalities are not included in the prices of products and the third parties are not fully compensated for their loss.

The “**polluter pays**” (i.e. **pays for the damage caused**) **principle** means inclusion of negative externalities (e.g. in the form of taxes and fees for environmental damage, determined by a regulator, or compensation set by the courts) in the costs of the polluter. The latter method is tedious and uncertain. It is important that this is a damage caused not only to private property, but also to public values. Implementation of this principle leads to new, cost-effective approaches, where the manufacturer limits the negative externalities by technical measures, so that his products (services) are competitive. Economic instruments force manufacturers to introduce technical innovations, to introduce the best available techniques (BAT), recycling and energy savings far more effectively than directive instruments and are the main means of enforcing the **principles of economic effectiveness**. Fees, taxes, etc. should, however, include all important externalities, taking into account the detriment that will occur at remote sites (in other countries) or for future generations. This is possible on the basis of jointly adopted in-

ternational measures (e.g. in the framework of the EU common market or on the basis of international agreements).

Consequently, compared with the previous SEP, this document places increased emphasis on **effective use of public means**, their allocation according to urgency (choice of priorities), economic effectiveness (“cost-benefit analysis”) and public control of their use. Another way in which increased effectiveness of the use of public means can be achieved is through **implementation of the principle of direct responsibility** of endangered entities for their own protection and for its financing and consistent strengthening of this principle. This principle can be employed especially in adopting preventative measures for protection against the detrimental effects of natural catastrophes.



The most important global problem is global warming, which is related to a range of anthropogenic processes (combustion of fossil fuels, industrial emissions, deforestation, intensification of agriculture, etc.). In application of the “polluter pays” principle in this and similar cases, the international community follows the **principle of common responsibility**, where the individual countries must accept commitments corresponding to the size of their economies and historical contribution to global emissions of greenhouse gases and possibly other externalities acting in a global context.

The principle of integration

It is apparent that protection of the environment is closely connected with most sectoral policies and, from this point of view, SEP CR is a cross-sectional policy, which must be both coordinated with the other sectoral policies and integrated into them. This requires cooperation at all levels of the public administration, where dozens of strategic and conceptual documents are prepared within central, sectoral and regional competence. SEP CR plays an important role from the standpoint of assessment of the environmental impact of these plans and conceptions according to the prepared amendment to Act No. 100/2001 Coll., on environmental impact assessment, extending the obligation of assessing conceptions and plans to further sectors. Simultaneously, it is necessary that the framework of regular reports to the Government of CR on carrying out of strategic tasks include evaluation in relation to the environment and the aspect of sustainable development. In this connection, it is necessary to emphasise the role of SEP CR as a reference document for the other sectoral and regional policies.

The National Policy of Safety and Protection of Health at Work, approved in Resolution of the Government of the Czech

Republic No. 475 of May 19, 2003 plays an important role in the creation and implementation of the updated State Environmental Policy of CR. The National Policy of safety and protection of health at work constitutes an important milestone in this area for all of CR. Changes in macroeconomic and social aspects of work are also reflected in this area. This is also connected with the transition from a directive nature of the legislation and supervision of safety and protection of health at work to introduction of a new approach to increasing the level of safety and protection of health at work. Creation of the National Policy of safety and protection of health at work utilised and took into account the documents of international organisations and also took into account approved national conceptions, including measures in the area of health and the environment. The above indicates the importance of interconnection of the individual national policies (NP of safety and protection of health at work and SEP) in the interest of the population, improvement of the working environment and, as a consequence, also an improved state of the environment.

5. Analysis of Current Issues

In accordance with the state of the environment, transposition and implementation of European law and the basic principles of protection of the environment and sustainable development, the updated SEP CR concentrates on the following four priority areas:

1. Nature conservation, protection of the landscape and biological diversity
2. Sustainable use of natural resources, material flows and waste management
3. Environment and the quality of life
4. Protection of the climate system of the Earth and prevention of long-range transport of air pollution.

This classification emphasises not only protection of the basic components of the environment (air, water, lithosphere), but primarily integrated protection of ecosystems and the landscape (conservation of biodiversity), sustainable development and an improvement in the quality of life. The fourth area reflects the responsibility of CR for the European and global environment (climate system, ozone layer) and the international cooperation entailed therein.

Analysis of strong and weak aspects, opportunities and risks (dangers) has been carried out for the first four priority areas of SEP CR and, on this basis, individual priority targets were proposed, which are further elaborated in sets of individual targets.

Nature conservation, protection of the landscape and biological diversity

The basic legal framework has been created for the area of nature conservation and protection of the landscape and biodiversity, with the exception of the Natura 2000 system. Especially nature protection is integrated into a European context and cooperation has been established between the countries of Europe. A great many individual policies and programs are related to this area, e.g. the National Forest Program, the State Program for Protection of Nature and the Landscape, the Program of Care for the Landscape, the Raw Material Policy and the Program for Certification of Sustainable Forest Management. The interest of the general public and intense cooperation between the state administration, NGOs, scientific institutions and foremost professionals is a very favourable aspect.

This area, however, also has weak points and inadequacies, which include not only long-term damage to and decreased stability of ecosystems, but also unclear ownership relations (forest and agricultural land), an inadequate material and professional base for execution of the public administration, especially at lower levels, and inadequate monitoring and inspection. In addition, there is insufficient coordination of conceptual and planning activities, including limited functioning of the existing system of land-use planning. This leads, for example, to inappropriate utilization of the built-up areas of municipalities and the new use of un-built-up areas (greenfields).

One of the quantified targets of the Implementation Plan, adopted at the World Summit on Sustainable Development in Johannesburg, consists in halting the loss of biodiversity by 2010. Seven critical factors (burdens) were defined, enabling quantification of the degree of anthropogenic impact on biodiversity (UNEP, 1997): climate change, density of human settlement, consumption and production, fragmentation of natural areas, acidification, eutrophication and tropospheric ozone. The permanent decrease in biodiversity in Europe, manifested in a decrease in the number of species of birds, amphibians, butterflies and selected plants and monitored in the long-term by international organizations such as the European Environmental Agency (EEA), points towards the effect of other anthropogenic factors, such as hunting, drainage of wetlands, regulation of water courses, introduction of geographically non-indigenous and spreading of invasive species, and the use of biocides and agrochemicals. Adoption of broader conclusions and the consequent measures for protection of biodiversity is currently limited by the lack of systematic monitoring.

Future membership in EU and increasing public pressure for improved nature conservation and protection of the landscape and biodiversity will create new opportunities. This will include an improvement in planning and conceptual processes according to the requirements of the European legislation (Natura 2000, plans for river basin areas, land-use plans, regional conceptions, etc.) and an improvement in coordination at all levels of the state administration. There must also be an increase in inspection work and decision-making processes at the level of local governments, requiring methodical management on the part of the central bodies. There must be better use of the EIA and SEA processes and of innovated economic and information instruments. International cooperation and the potential for use of financial sources from the European Communities (especially the LIFE program and structural funds) are important.

In addition to these new opportunities, there are also dangers and risks that follow not only from the inadequate execution of the state administration and lack of financial resources. There will be a significant increase in detrimental economically motivated pressures for changes in the land fund, unsuitable utilization of flood plains and excessive intensification of agriculture. There will also be an increase in the pressure from the providers of tourism services on nature and the landscape. The detrimental impact of automobile transportation is also important (fragmentation of the landscape by new roads, noise, emissions and the disappearance of biotopes). On the other hand, the increased level of protection places limits and new economic demands on consumers and especially on the private sector (e.g. introduction of best available techniques – BAT), which could limit the potential for new investments.

It follows from this analysis that the combination of certain weak aspects (negative internal factors) with dangers (ex-

ternal risks) under increasing economic pressure could lead to a breakdown in the current level of nature conservation. In this area, it is necessary to eliminate inadequacies in execution of the state administration that have arisen during the reform of the state administration. It is necessary to improve methodical management and coordination activities, to increase the effectiveness of the planning process (including land-use planning) and to obtain further public support. Further, it is necessary to maximally utilize the potential for foreign cooperation and to obtain additional financial resources from EC. The on-going legislative process and innovation of instruments must strengthen integration of SEP CR into sectoral policies, which requires good cooperation with the other sectors (especially at the regional and local levels, industry and trade, transport, agriculture, water policy and forest management).

Sustainable use of natural resources, material flows and waste management

A number of favourable changes have occurred in recent years in the area of sustainable utilization of natural resources, material flows and waste management. The legal framework was supplemented and improved, there are more effective instruments, including the SEA, EIA and IPPC processes, the relevant administrative bodies have been established and control, implementation and enforcement of laws has been increased. Simultaneously, there has been a decrease in the material and energy intensity of creation of the GDP which, however, remains higher than the EU average, and there is an increasing fraction of products and services with higher added value. Domestic supplies of industrial minerals, surface and ground waters, fossil fuels and renewable material and energy resources have been adequately studied and quantified. In the waste management sector, there is a basic capacity for collection and processing and sufficient landfill capacity is available.

A number of problems persist in other areas, such as the utilization of surface and ground waters, waste water treatment (including use of treatment plant sludges), material and energy use of wastes or mineral extraction and treatment. A number of entities active in the private sector have low legal consciousness or even intentionally break the laws, while some regulations for extraction (the Mining Act) or production of energy (the Atomic Act) do not yet permit effective participation of municipalities and the public in administrative procedures. Further, improvements must be made particularly in records of wastes and waste flows, in order that the data obtained be more useful for inspections and decision-making activities. Provision must be made for permanent monitoring of the condition of surface and ground waters in accordance with the requirements of Water Framework Directive 2000/60/EC.

Coordination between the regions, methodical direction of the state administration and local governments and increased inspection work provide important opportunities for eliminating these inadequacies. Consequently, planning at the central and regional levels is very important, e.g. the Raw Material Policy, State Energy Policy, Waste Management Plans, Regional Energy Conceptions, etc. It is also important to complete work on the legislative framework, which should lead to better interconnection of environmental and sectoral laws. Implementation of integrated prevention and introduction of the best available techniques (BAT), enabling a further decrease in the energy and material intensity of production, will lead to increasing economic pressure on the operators of installations that do not comply with current requirements on environmental

protection. Consequently, priority targets can be achieved only under the assumption of good cooperation between the private sector and the public administration and also with strong support from the public, which must also be achieved through implementing a degree of direct responsibility for enforcing some interests (area of prevention of the negative effects of natural and industrial catastrophes).

Potential risks and dangers also lie in the inadequate material and professional base for execution of the public administration, especially at its lower levels, which must confront intentional violation of the laws, organized criminal activities and corruption. Lack of trust on the part of an uninformed public and lack of investments in the private sector can prevent provision for new recycling and processing capacities. This is also true of introduction of best available techniques (BAT). Risks also lie in the undesirable tendency to invest in material- and energy-intense production processes or production generating a high portion of waste.

Combination of several weak aspects with dangers (external risks) can lead to deterioration of conditions in waste management or to unsustainable exploitation of natural resources. This must be prevented by an improvement in the state administration and increased cooperation with the private sector. It is necessary to improve and extend statistical studies in the area of wastes. The lack of financial resources for construction of technical installations, including WWTP, could become a critical factor; maximum use must be made of EC funds (municipal sphere).

Environment and the quality of life

More effective legislation, including EIA, SEA and IPPC and continuing supplementing and refining of the legal framework is enhanced in this area by conceptual planning and the developing professional and scientific base. Cooperation between the environmental and health sectors leads to conceptual documents at the international and national level. Institutional and informational provision for intersectoral cooperation is enhanced (chemical substances, prevention of accidents, food safety, reduction of health risks from a polluted environment, etc.). Work is continuing on elimination of environmental damages from the past, although this is a slow process because of the demanding nature of remediation work. Replacement of obsolete technology is also continuing.

In general, an inadequate material and professional base persists at a lower level of the public administration. Cooperation with the private sector is inadequate and ineffective (absence of a "public-private partnership"). There is a lack of financial resources (old environmental burdens, monitoring, noise maps, measures to prevent floods, etc.) and the introduction of BAT is also expensive. Inadequate care for public areas (including maintenance and protection of green areas) also has a negative effect here.

Continuation of transfer of experience and knowledge from the OECD countries and further implementation of European legislation, together with cooperation in international programs and projects, are very important. The latter include, e.g. "Healthy Cities", "European Day without Cars", etc. Training and methodical directing of the lower levels of the state administration and self-government must lead to an improvement in execution of the state administration. It is necessary to strengthen the role of SEA, IPPC and land-use planning. The utilization of new financial resources from EC is very promising in these areas.

There are significant risks and dangers here, especially uncontrolled suburbanization, development of built-up areas on "greenfields", the creation of areas devastated by industry and abandoned ("brownfields") and not utilizing existing brownfields. A further increase in the intensity of individual and freight automobile transport may also have negative consequences (emissions, accidents, noise, utilization of space). In urban areas, there is a danger of a decrease and destruction of green areas, vandalism and annexation of public areas for commercial purposes, commercialisation of the centres and historical parts of cities and the creation of ghettos with socially less well-off inhabitants. Economic development can also lead to further contamination of the soil, air and water by transport and industry (including problems related to use and disposal of waste). These potential risks are enhanced by the lack of financial resources for prevention and remediation, lack of interest on the part of the public, which is not sufficiently involved through participation in providing for preventative measures, and an insufficient material and professional base for execution of the public administration, especially at lower levels.

Combination of some weak aspects and external risks could, in the future, lead to an unacceptable worsening of current conditions, especially in large cities and their immediate vicinity. This potential worsening must be eliminated both by strengthening the execution of the state administration and elimination of weak points at the level of the regions and municipalities and also through greater public participation in decision-making processes (administrative procedures, land-use planning, community planning, IPPC and EIA/SEA). Then, the potential of newly adopted and prepared legislation can be fully utilized; however, this will require qualified state administration, adequate inspection and enforcement capacity and strong public support.

Protection of the climate system of the Earth and prevention of long-range transport of air pollution

While the previous subject areas of SEP CR were concerned with resolving environmental issues primarily at a national level, the acceptance of new targets in the area of protection of the climate system of the Earth and reduction of long-range transfer of air pollution require co-responsibility of CR for environmental issues of European and global dimensions. Consequently, continuous and active participation of CR in international meetings is important (conventions, protocols, working groups, programs, etc.). As a result, CR holds a significant position in the group of countries with economies in transition and amongst the new EU members. In recent years, the Government of CR has adopted basic documents, which are periodically updated, e.g. the Strategy of Protection of the Climate System of the Earth.

However, there are also on-going problems and weak aspects, e.g. the limited ability to regulate small pollution sources and increasing emissions of carbon dioxide from transportation. The lack of economic instruments to decrease greenhouse gases and limited experience in their application have noticeable effects. This subject area is professionally complex and, thus there is a lack of human resources in the state administration and inadequate participation of the regions in dealing with these aspects. Lack of public interest is also based on drawn-out negotiations (e.g. the Kyoto Protocol) and the complexity of internationally accepted rules.

Protection of the climate system of the Earth and reduction of long-range transport of air pollution must be integrated

into the sectoral policies and simultaneously taken into account in preparation of sectoral action plans and strategies. The potential use of EC funds for preparation of practical projects and to increase professional and administrative capacities constitutes a great opportunity. Evaluation of transboundary environmental impacts (EIA/SEA, IPPC) must be fully utilized in the area of long-range transport of air pollution. Prevention of detrimental impacts on the climate system of the Earth and prevention of long-range transport of air pollution is expensive and requires cooperation with the private sector, use of new economic instruments (e.g. emission trading and jointly implemented projects) and the concluding of voluntary agreements with industry.

The achieving of priority targets and the related international commitments of CR are endangered by the high cost of preventative measures (especially decreasing emissions) and lack of support from the general public, which will feel their economic impact. Catastrophic economic or political developments on an international scale, caused by the detrimental impacts of climate change and the consequent emergence of international pressure for stricter obligations and preventative measures cannot be excluded.

Because of their global character, CR cannot eliminate external risks (dangers) simply by decreasing its emissions. This means that it must increase its activities at international meetings, e.g. pressure for faster ratification of the Kyoto Protocol by developed countries and by important emitters of



greenhouse gases amongst the developing countries, so that they accept the relevant reduction obligations. Preparation of a strategy to alleviate the impact of climate change in CR (adaptation strategy) is of high priority. However, this is also true for all the previous subject areas of SEP CR and should be prepared on a broad national and regional basis (cooperation with neighbouring countries). So far, no technology has been introduced that would use the energy from coal more efficiently.

Combination of external risks and weak aspects could lead to substantial economic pressure on the signatories of these conventions. Consequently, it is necessary to increase cooperation in the framework of EC, including use of EC funds, for preparation of professional and administrative capacities for implementation of the Kyoto Protocol. There are considerable uncertainties in this area related to the negative effects of climate change and, consequently, there should be a regularly updated scenario for dealing with emergencies (including preparation for global warming, droughts, desertification, spreading of epidemics and humanitarian/environmental catastrophes caused in connection with these phenomena).

III. Targets of the Updated SEP CR in Priority Areas

Priority areas and individual priority targets within them, which are further elaborated into sets of individual targets and measures, were specified on the basis of the Report on the Environment in CR in 2002, the 6th Environment Action Program of the European Communities, the OECD Environmental Strategy for the First Decade of the 21st Century, the European Union Strategy for Sustainable Development and other strategic documents at a national and international level. Provision has been made for continuity with the previous SEP (continuity of medium-term and long-term targets), with sectoral operational programs (financing from EC sources, priority and medium-term targets) and with the Implementation Plan for the Area of the Environment (selected medium-term targets for implementation of *Acquis Communautaire*).

The chapters have the following structure:

- X Priority area (e.g. 1. Nature Conservation, Protection of Landscape and Biological Diversity)
- X.X Priority target (e.g. 1.1 Halting the Loss of Biodiversity)
 - Brief description of the subject area
 - Individual targets and measures

1. Nature Conservation, Protection of the Landscape and Biological Diversity

1.1 Halting the Loss of Biodiversity

Brief description of the subject area

Biological diversity (biodiversity) is defined as the diversity of life in all its forms, levels and combinations. It includes diversity of ecosystems, species and genetic diversity.

The decrease of biodiversity is a global problem, caused by the rapidly increasing rate of extinction of species of fauna and flora, disappearance of natural and almost natural biotopes and the decrease in the genetic variability of organisms. The use of genetically modified organisms constitutes a global risk. Although they may have certain advantages compared with natural species, their open and uncontrolled spreading can lead to a further decrease in species and genetic diversity (as well as endangering human health).

In the Czech Republic, biodiversity is endangered by intensification of agricultural production and, on the other hand, by the failure to cultivate and abandoning of agricultural areas, excessive or unsuitable urbanization, fragmentation of the landscape by transport infrastructure and the use of means of transport itself. Transition (ecotonic) zones, which have a stabilizing function and are characterized by high biological diversity (lake reed beds, hedgerows, hedges, damp floodplain meadows, etc.), are disappearing and the interconnection of the landscape is decreasing substantially (especially as a consequence of linear structures and unification of agricultural properties). Autochthonous species of plants and animals are detrimentally affected by invasive species, which are either intentionally planted/released (e.g. some species of fish) or spread spontaneously. In order to halt the decrease in biodiversity it is necessary to protect not only the species of wild flora and fauna themselves, but also their habitats and

genetic pool and the zones of natural and almost natural ecosystems.

Forest ecosystems are also important in the Czech Republic, where forests cover one third of the total area of the country. Their diversity was decreased in the past in an attempt to satisfy demand for rapidly growing or the most sought-after tree species. As a consequence of these activities, there is currently a disproportionately large, almost three-fold ratio of narrow-leaved tree species to broad-leaved species, even though there has been a significant increase in the fraction of broad-leaved species and firs in afforestation and natural forest renewal since 1995. The lower diversity of forests is also reflected in the decrease in their ecological stability, leading to a high portion of salvage harvesting.

Individual targets and measures

1.1.1 Protection of biological diversity at the level of habitats

- Designate sites in the Natura 2000 network.
- Complete the state administration and management system for localities in the Natura 2000 network.
- Provide for an improvement in protection and management for important habitats (regional and national), which are neither part of specially protected areas nor the proposed Natura 2000 network.
- Provide for effective management for the system of specially protected territories.
- Connect the Natura 2000 network functionally with the existing system of specially protected territories.
- Establish a system and permanently provide for financing of management and compensation for property owners for protection of habitats and species utilizing all national and international resources.

1.1.2 Protection of specially protected species of flora and fauna

- Provide for biotope management for specially protected species of flora and fauna.
- Provide for measures against the disappearance of the most endangered species of flora and fauna (e.g. rescue programs, management programs for particular endangered species).
- Create conditions for the formation of substitute biotopes for specially protected species of flora.
- Provide for the use of measures minimizing the risk of injuring and killing of birds by electrocution.

1.1.3 Increasing the ecological stability of the landscape

- Improve territorial systems of ecological stability.
- Implement lacking elements of territorial systems of ecological stability.
- Establish limits for development of the territory and territorial reserves in relation to protection of the natural and landscape environment and incorporate them into the instruments of land-use planning.
- Provide for a varied species, age and spatial composition of forests, e.g. through legislative, administrative and economical instruments.
- Prepare a set of measures to reduce spreading of alien invasive species of flora and fauna.

- Prevent the introduction of geographically nonindigenous species into the open landscape of natural ecosystems.
- Prefer populations of indigenous species of fish in fishing management on water courses.
- Provide for measures to ensure free passage along (existing and newly created) roadways on the migration routes of fauna.
- Implement recovery measures on the basis of already existing (or new) recovery programs.
- Create substitute wetland habitats at sites where they have been disturbed or destroyed through anthropogenic activities.

1.2 Care for Aquatic and Wetland Ecosystems, Renewal of Aquatic Biotopes

Brief description of the subject area

Aquatic ecosystems and wetlands deserve special protection as unique natural ecosystems with high biodiversity, which simultaneously act as natural water reservoirs, but which are very vulnerable towards changes in the hydrological regime and insensitive anthropogenic interventions, such as deepening of the channels of rivers, regulation of river courses, unsuitable forest management, drainage, construction of canals and new water routes, construction of water reservoirs, excessive withdrawals of ground waters and pollution as a consequence of intensive agricultural activities and intensive fish breeding.

On the basis of the Ramsar Convention, which defines wetlands as areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six metres, the following are defined as wetlands in the text of SEP: peat bogs, fens, floodplain forests, river floodplains, dead arms of rivers, pools, flooded meadows or wet meadows, reed beds, spring areas and other aquatic and marshy biotopes, mountain lakes and salt marshes.

The targets in these priority areas concentrate on prevention of damage to aquatic ecosystems, increasing the natural retention ability of the landscape and preventing eutrophication. The gradual fulfilling and implementation of program targets leading to renewal, stabilization, maintenance and subsequent care for the natural aquatic regime of the landscape is dependent on a substantial increase in the portion of ecologically functional water sources (or water recipients) in the landscape.

Individual targets and measures

1.2.1 Consistent protection of all types of wetlands

- Adopt and implement a National Policy of Protection of Wetlands, e.g. through plans for river basin areas.
- Ensure sustainable use of wetlands and water sources in the context of economic pressures and global changes.
- Adopt the principles of sustainable management in the landscape in connection with the principles of good agricultural practice.
- In the framework of construction procedures, reject activities and construction plans that would lead to destruction of wetlands.

1.2.2 Provision for renewal and recovery of aquatic biotopes and wetlands

- Prepare a methodology for selection of aquatic biotopes suitable for renewal or recovery and, on this basis, prepare a database of localities designated for renewal or recovery.

1.2.3 Compensation of the water balance

- On the basis of the Act on Protection of Nature and the Landscape, the Water and Forest Acts and the EC Water Framework Directive, prepare instruments for the area of water policy and incorporate them into sectoral policies.

2. Sustainable Use of Natural Resources, Material Flows and Waste Management

2.1 Protection of Surface and Groundwaters (quality and amount, drinking water sources)

Brief description of the subject area

Water sources are an important natural resource that is endangered by both local and diffuse pollution. The main task for the future lies in providing for the requirements following from Water Framework Directive 2000/60/EC, including individual targets. This Directive was adopted so as to create coordinated mechanisms for elimination of obstacles preventing procedures in improving the condition of waters. Transposition of this Framework Directive was ensured in January 2004 through amendment of Water Act No. 254/2001 Coll. The main target in the immediate future consists particularly in delimiting and monitoring water bodies, drawing up a register of protected areas connected to water and their protection, implementation of coordinated mechanisms to improve the state of waters through plans for river basin areas, which will gradually incorporate all the measures required to improve protection of surface and ground waters. It is necessary to continue work on remediation of environmental burdens from the past in decontamination of ground waters and soils contaminated by pollutants above acceptable levels. In practice, other related EC Directives will also be employed – especially Council Directive 91/271/EEC concerning urban waste water treatment, Council Directive 91/676/EEC concerning protection of water against pollution caused by nitrates from agricultural sources and Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community. The greatest problem will lie in construction of the lacking water management infrastructure for WWTP and sewer systems, reconstruction and improvement of the technology of waste water treatment to comply with the requirements of Directive 91/271/EEC in agglomerations over 2000 E.I. in the framework of the transition period, i.e. to the end of 2010. In the framework of preliminary evaluation of fulfilling of the State Environmental Policy of CR for the 2004 – 2006 period, an analysis will be carried out of the ability of the Czech Republic to comply with the requirements of the transition period following from the relevant EC Directives. Programs to decrease pollution of surface waters by hazardous pollutants and very hazardous pollutants will be of benefit in improving the quality of surface waters. The process of implementation of the Programs, which is planned to 2010, includes an entire comprehensive set of limiting measures and steps in all the areas of

environmental protection, leading to gradual elimination of the input of very hazardous pollutants and a substantial reduction in the input of hazardous pollutants into surface waters and the related ecosystems.

Individual targets and measures

2.1.1 Improving the purity of surface and, consequently, also ground waters

- Construct and reconstruct waste water treatment plants and sewer systems in accordance with the implementation plan for Council Directive 91/271/EEC.
- Implement construction work for protection of water purity according to the “List of agglomerations in CR intended for various temporary categories of transition periods (according to Council Directive 91/271/EEC)”.

2.1.2 Delimitation of surface and groundwater bodies and of hydrogeological regions

- Define water bodies, analyse their characteristics and evaluate the impact of human activities on the state of surface and ground waters.

2.1.3 Improvement of monitoring the occurrence and movement of hazardous substances contaminating ground and surface waters

- Provide for search monitoring of hazardous substances in the hydrosphere, including inventories of point and diffuse sources of hazardous substances and persistent organic substances.
- Employ and implement programs to decrease pollution of surface waters by hazardous pollutants and especially hazardous pollutants.
- Commence and carry out revision of permits for discharge of waste waters containing hazardous substances and issuing of new permits.

2.1.4 Improvement of monitoring of ground waters

- Complete the groundwater monitoring network, especially for deep groundwater bodies.

2.1.5 Integrated and coordinated approach to water protection and water management in the territory of CR

- Prepare Plans for the main river basins.
- Prepare Plans for the river basin areas.

2.1.6 Protection of groundwater sources

- Provide for territorial protection of spring areas and collection sites for spring outflows.
- Provide for protection of the infiltration zones of springs, spring areas and areas of natural accumulation of ground waters.

- Enforce consistent respect for protection of groundwater sources in land-use planning work and land-use decisions.

2.1.7 Protection of protected areas

- Provide for establishment of a register of all territories located in each river basin area, that were defined as territories requiring special protection of their surface and ground waters or conservation of habitats and water-dependent species of fauna and flora.
- Achieve the standards and targets laid down by Water Framework Directive 2000/60/EC by 2015.

2.2 Protection of Nonrenewable Natural Resources

Brief description of the subject area

In addition to fossil fuels and industrial minerals, nonrenewable resources also include groundwater sources (see 2.1), biodiversity (see 1.1) and the soil. The rate of renewal of these resources is negligible compared to their consumption. Consequently, prudent management of fossil fuels, industrial minerals and the soil is important from the standpoint of the principle of sustainable use of natural resources. The geological environment, of which fossil fuels and industrial minerals are a part, has been affected in the territory of CR over centuries by human activities other than only mining. Especially contamination of its components – the soil and ground water – has had detrimental consequences.

Excessively intensive or imprudent use of mineral resources is contrary to the principles of sustainable development. Although all the known mineral resource deposits have not yet been mined out, it is necessary to preserve the potential for their use in future years and also for future generations. The protection of deposits, which is guaranteed by the valid laws, should be implemented at all levels of land-use planning and in raw material conceptions. Mining leads to a decrease in the potential for future use unless provision is made for complex utilisation of all the extracted rock through separate depositing of the individual types of rock (e.g. sand-gravels and clay from the cover). In relation to the industrial history of the Czech Republic, it is increasingly important to obtain geochemical information on anthropogenic contamination of the soil, sediments and ground waters for their future optimal utilization and to use the information and maps obtained at all levels of management.

The soil, which is a basic component of the biosphere, is also a nonrenewable resource for agriculture and forest management. A decrease in the content of organic carbon, especially in the water regime, compacting, salinisation and contamination by pollutants from point and diffuse sources, together with wind and water erosion, lead to degradation of the soil. This is also reflected in a decrease in the number and variety of soil organisms. The depositing of solid and liquid wastes, application of contaminated sludges from WWTP and atmospheric deposition of toxic metals and persistent organic pollutants have led to



contamination of ground waters and the soil. The loss of the soil through construction, building of roads and parking lots, etc. is irreversible. It is necessary to create a more effective legislative framework for land-use planning (a new Construction Code) and monitoring and establishing priorities for remedial and preventative programs. It is important to integrate soil protection into agricultural, forest, transport and raw material policy and land-use planning (reduction of construction on greenfields, use of brownfields). Remediation of environmental burdens from the past decreases the degree of contamination of the soil and ground waters by industrial pollutants. Because of the technical complexity, it is useful to employ the CLARINET (Contaminated Land Rehabilitation Network for Environmental Technologies) European network of professionals in decontamination of soil and ground water. European structural funds (e.g. EAGGF) support protection of the soil against erosion and floods and its sustainable use. CR participates in EUSIS (European Soil Information System) and joint projects in soil protection coordinated by the European Soil Bureau. It is necessary to support sustainable means of management of agricultural and forest land (good agricultural and forestry practice), including proper use of fertilizers and biocides and/or support for environmentally sound agriculture, as appropriate.

Individual targets and measures

2.2.1 Territorial protection of mineral deposits

- Establish protected deposit territories (PDT).
- Implement respect to the protection of natural mineral resources in land-use planning.

2.2.2 Increasing respect for sustainable development in providing for management of industrial minerals

- Implement the principles of sustainable development by the Commission for Review of Predictions of Industrial Mineral Resources in CR.
- Incorporate environmental aspects into regional raw material policies for the individual regions.
- Update the raw material policy of CR and the regions in relation to the new conditions following the accession of CR to EU with emphasis on the highest possible efficiency of utilization of raw materials, including secondary and raw materials and their material and energy potential and reducing the volume of final waste deposited back into the natural environment.

2.2.3 Preservation of the lifetimes of stocks of mineral resources through more complex utilization

- Analyse mining law and the related legislation of the EU countries.
- Prepare and modify mining law in order to achieve the level of legislation and administrative procedures employed in the individual EU countries.

2.2.4 Protection of the soil

- Protect the soil against contamination by hazardous substances.
- Protect the soil against annexation and irresponsible spreading of cities and municipalities outside of the currently built-up areas.

- For decision-making at all levels, define anomalies in high-risk substances occurring in connection with human activities, in soils, rocks, bottom sediments and ground waters and include this information in the limits for development and planning of large territorial units and municipalities.
- Develop procedures for decontamination and remedy anthropogenic anomalies of high-risk substances in soils, bottom sediments and the lithosphere.
- Prepare and implement a national program for protection of the soil.
- Modify legislative regulations in the area of soil protection in connection with the policy of the European Communities.
- Increase the effectiveness of payments for annexation of land in relation to the biological diversity on it as an economic instrument for general protection of the land, e.g. through increasing the values in the tariff list of payments for withdrawal of land from the agricultural land fund.

2.3 Utilization of Renewable Resources

Brief description of the subject area

This target is related to the maximum possible replacement of nonrenewable resources (material and energy) by renewable resources. In the material area, this consists in the utilisation of biotechnology and biomass (especially technical crops and wood). Under the conditions in the Czech Republic, the most important renewable energy sources are primarily: biomass energy (wood, straw, various biological waste, shaped and treated biofuels – briquettes, pellets, etc.), the energy of direct solar radiation – thermosolar systems and photovoltaic panels, the energy of water (where the only environmentally sound means of utilizing this energy consists in hydroelectric plants with an installed output to 10 MW, which are considered to be renewable resources that can be supported from public sources according to EU legislation), the energy of the environment (thermal energy of rocks, ground and surface waters and the air, utilised through heat pumps), geothermal energy, wind energy and fuel from renewable resources in transportation. Together with energy savings, renewable energy sources are currently the only available inexhaustible energy source. These sources provide a realistic potential to provide for the energy requirements of human beings in the coming centuries, are not a source of greenhouse gases, mostly produce a significantly lower amount of other emissions and practically do not produce waste. They contribute to the energy independence of the country and region and permit decentralization of energy sources. The use of renewable energy sources (RES) creates new working opportunities (especially in rural areas) and thus contributes to decreasing unemployment.

Individual targets and measures

2.3.1 Achieving a 6% fraction of RES in total consumption of PES by 2010

2.3.2 Achieving at least an 8% fraction of electricity from RES in gross electricity consumption by 2010

- Promote investments into the use of thermal energy produced from renewable sources.
- Achieve a level of financial support from public budgets of at least 0.1% GDP.

- Ensure approval and subsequent implementation of the Act on Promotion of Production of Electricity and Thermal Energy from Renewable Energy Sources.
- Approve and implement a conception of environmental tax reform.
- Implement the Directive on taxation of energy, 96/2003/EC.
- Simplify the permit-issuing procedure in construction of installations for the use of renewable energy sources.
- Create clear rules for relationships between the use of renewable energy sources and nature conservation and protection the landscape, so that none of these areas is discriminated.

2.3.3 Utilization of biomass and especially wood as an extensively used raw material rather than nonrenewable materials

- Eliminate legislative obstacles to broader use of biomass for construction.
- Create programs to support material use of other types of biomass and other materials from renewable resources, especially wood.

2.4 Reduction of the Energy and Material Intensity of Production and Increased Material and Energy Use of Wastes

Brief description of the subject area

The reduction in the energy and material intensity of production is progressing according to the implementation of scientific and technical knowledge in the framework of innovation cycles and the inflow of suitable investments. In spite of the significant improvement over the past decade, the Czech Republic has considerable reserves for further improvement of production in this respect. In relation to reducing energy intensity in all segments of final energy consumption, consideration will be taken of Draft Directive EC final COM (2003) 739 "Directive of the European Parliament and of the Council on Energy End-Use Efficiency and Energy Services". A decrease in the material intensity of production will lead to a reduction in waste generation. Production and consumer waste constitutes a serious environmental burden. Wastes are not only a phenomenon accompanying ineffective management of nonrenewable natural resources (2.3), but are simultaneously an increasingly important source of materials and energy. Inadequate landfilling and combustion of wastes constitutes a source of contamination of the soil, waters and air by hazardous substances, such as toxic metals and persistent organic pollutants.

The waste policy of the European Communities has not achieved many of its set targets in the last two decades and is currently being reviewed. Prevention of waste generation and an increase in the fraction of recycling encounters economic limits and requires, not only new economic stimuli, but especially a change in the behaviour of producers and consumers, who must participate in separate collection of wastes. Separation is most effective directly at the source – manufacturers, business persons, operators of services and households.

The introduction of the best available techniques (BAT) is an important instrument in decreasing material and technical intensity and prevention of waste generation, not only in pro-

duction, but also in the area of waste management. There is an increasing acceptance of responsibility of manufacturers for the entire cycle of production and consumption, including recovery and recycling of selected wastes (waste oils, batteries and storage batteries, end-of-life vehicles, refrigerators, fluorescent lamps, electronics, etc.), packaging and packaging wastes.

The desirable hierarchy of waste management (prevention, minimization, reuse, recovery and safe disposal) is not fully respected in CR and waste disposal, especially landfilling, predominates over recovery of waste. In the environment of a market economy, no provision is made for products produced from wastes, so that it is very difficult to increase the material recovery of wastes.

Similarly, the collection of wastes separated according to the individual kinds is inadequate; enforcement of this obligation has great reserves in both the business and civic spheres. This leads to a lower rate of returning of wastes to production cycles as a substitute for input raw materials. In relation to municipal wastes, these aspects are related, in particular, to hazardous wastes, biologically degradable wastes, products subject to re-acceptance, plastic wastes, etc..

One of the common problems of the European Communities and thus also CR lies in the introduction of a uniform system of statistical records of wastes, so that it is possible to better balance material and waste flows. This is also related to categorization of wastes, not only according to their hazardousness, but also according to their utilisability and free movement of selected wastes as a commodity in the framework of the common European market.

Targets for the area of separated collection and material recovery of selected consumer wastes are laid down in Government Regulation No. 197/2003 Coll., on the Waste Management Plan of CR, where a task consists, e.g., in reducing the maximum amount of biologically degradable municipal wastes (hereinafter BDMW) deposited in landfills, so that the fraction of this component equals a maximum of 75% wt. in 2010, a maximum of 50% wt. in 2013 and a maximum of 35% wt. in 2020 of the total amount of BDMW generated in 1995.

Individual targets and measures

2.4.1 Reducing the weight fraction of wastes deposited in landfills

- Utilize the recommendations of the Implementation Program of CR to support the use of recycled materials.

2.4.2 Reduction of the maximum amount of BDMW deposited on landfills

- Set aside financial subsidies from SEF for creation of capacity for processing BDMW.
- Utilize the recommendation of the Implementation Program of CR for biologically degradable wastes.

2.4.3 Reducing the material and energy intensity of production

- Accelerate the introduction of BAT technologies.
- Negotiate other favourable measures on the part of operators.
- Create a system of financing support for enterprises that are not included in the integrated permit process in introducing BAT.

2.4.4 Improvement in management of products, packaging and wastes from them

- Utilize recommendations from the following programs (programs prepared for the 2003 – 2004 period):
 - Implementation Program of CR for packaging and packaging wastes
 - Implementation Program of CR for electrical and electronic equipment
 - Implementation Program of CR for PVC and waste containing PVC
 - Implementation Program of CR for end-of-life vehicles
 - Implementation Program of CR for sludges from waste water treatment plants
 - Proposal of instruments to support increased material recovery of wastes.
- Prepare implementation programs for CR for specific groups of wastes (e.g. biologically degradable wastes) in the 2004 – 2006 period and subsequent use of its recommendations.

2.5 Responsible Management of Hazardous Wastes

Brief description of the subject area

The area of responsible waste management is concerned particularly with prevention of the generation and reducing of the hazardous properties of wastes, replacement of hazardous substances and materials, creation of technical capacities for management of hazardous wastes, elimination of PCBs and active participation of CR in the Basel Convention. CR exceeds the average for the EU countries in production of hazardous and consumer wastes per inhabitant and GDP. In addition, technical capacities for management of some kinds of hazardous wastes are inadequate. The overall production of hazardous waste has varied from 2.4 to 3.9 mil. tons of waste over the past 5 years, of which 50% is produced in industry. The material balance and statistical monitoring of these wastes must be improved and inspection work of the state administration must be increased. This area is also based on Government Resolution No. 197/2003 Coll., on the Waste Management Plan of the Czech Republic, which lists a number of principles and quantified targets in the annex.

The precautionary principle must be strictly applied in this area and protection of human health, living organisms, ground waters and soil against toxic and hazardous substances must be enforced. Prevention of waste generation is not yet adequately encouraged; there are no economic incentives and there is insufficient information on the benefits and advantages of measures and investments in the area of prevention of waste generation and reduction of the hazardous properties of wastes. Hazardous wastes from health and veterinary care contribute only 0.66 % to the overall production of hazardous waste; nevertheless, they represent a substantial danger from the viewpoint of the impact on human health and the environment. These wastes are perceived as a growing issue given their infectious and toxic nature. The amount of hazardous waste separated from municipal waste equals less than 1 % of the overall production and thus indicates low effectiveness of the system of separate collection of hazardous components separated from municipal waste.

Polychlorinated biphenyls and terphenyls (hereinafter PCB/PCT) constitute a group of technical substances derived from biphenyls (transformer oils, insulating substances, hydraulic and heat-bearing liquids). It is estimated that approx.

21 500 tons of PCB/PCT were produced in Chemko Strážské (now in SR) from 1959 to 1984. Almost half of the amount produced was exported. As production of substances based on PCB/PCT was terminated in 1984, the amount of PCB/PCT in the environment is gradually decreasing; nonetheless, losses into the environment are estimated at 1/3 to 1/2. Progress is being made in connection with keeping records (inventories) of PCBs, especially in connection with removal from installations (transformers, condensers, oil switches) with a target year of 2010.

Individual targets and measures

2.5.1 Prevention of generation and reducing specific production of hazardous wastes

- Utilize the recommendations of the Implementation Program of CR for hazardous wastes, including procedures and measures leading to a reduction in the environmental and health risks in management of hazardous wastes.
- Prepare the following programs for the 2004 – 2006 period and subsequently utilize their recommendations:
 - Implementation Program of the Czech Republic for oils
 - Implementation Program of the Czech Republic for batteries and storage batteries
 - Implementation Program of the Czech Republic for other specific groups of wastes.

2.5.2 Improved management of health care wastes

- Utilize the recommendations of the Implementation Program of CR for health care wastes (program prepared in the 2003 – 2004 period).

2.5.3 Disposal of PCB wastes and installations containing PCBs by 2010.

- Prepare inventories of installations containing PCBs.
- Utilize the recommendations of the Implementation Program of the Czech Republic for decontamination and disposal of installations containing PCBs.

2.5.4 Creation of a national network of installations for hazardous waste management

- Create a system of financial support for construction and modernization of installations for management of hazardous wastes, outside of landfills and municipal waste incinerators.

3. Environment and the Quality of Life

3.1 Reduction of the Burden on the Environment and the Population from Toxic Metals and Organic Pollutants

Brief description of the subject area

In protection of the population and the environment, minimization of the burden from toxic metals and organic pollutants is a basic approach for improving the quality of life of the population and preventing the creation of permanently damaged zones. In relation to protection of human health, it is necessary to monitor drinking water quality and to reduce the bur-

den on the human population resulting from the pollution of the air and foodstuffs (e.g. by organochlorinated substances, agricultural chemicals, phthalates, benzene, toxic metals, PAH, asbestos, PM₁₀ dust particles, etc.). These pollutants also have a negative impact on biodiversity and ecosystems (see 1.1). Comparison with Western European countries leads to the fact that considerable attention must be devoted to the issue of pollution by persistent organic pollutants and especially dust in the Czech Republic. Transport, extraction of materials, production of energy, local heating using coal, industrial production, the chemical industry, old environmental burdens and agriculture cause emissions of primary pollutants and their precursors and secondary dust formation and are a cause of transboundary transport of pollution (see 4.2). These diffuse and point sources emit large amounts of a wide range of hazardous and toxic substances into the environment, which further enter the food chain, the human organism, plants and animals. The negative impact of local heating units has recently increased, as they enable illegal combustion of municipal waste with formation of a number of pollutants (e.g. dioxins). All these substances migrate through the atmosphere, hydrosphere, lithosphere and biosphere and enter our organisms through respiration, food and water. Because of their trace concentrations, they are frequently undetectable by the human senses, which, from a lay and psychological standpoint, decrease the individually perceived importance of this problem and complicate its solution.

In addition, the commercial use of dozens of chemical substances and preparations entails serious risks for human health and the environment. Consequently, it is necessary to enforce the precautionary principle and producer responsibility. At the present time, European legislation is being reviewed to eliminate the difference in assessing hazardous substances produced and used formerly (prior to 1981) and substances newly placed on the market. A change must be introduced in enforcing the responsibility of industry for damage to the environment and health, caused by chemical substances and preparations, the transparency of information required for qualified decision-making by consumers must be improved and highly dangerous substances (carcinogens, mutagens, persistent pollutants, etc.) must be removed from use. Endocrinal disruptors, which react to disturb the hormonal systems of humans and animals, constitute a newly identified group of hazardous substances.

In order to reduce the burdening of the population by toxic metals and organic pollutants, it is necessary to continue to consistently carry out risk analysis of selected hazardous substances, manufactured or imported into CR, whether individually or in the form of preparations. On the basis of the results of the evaluation, measures must be proposed to decrease the risk from these substances for human health and the environment. Measures may include various limitations (e.g. concentration limits, limited use) up to complete prohibition of production or use.

Following a period of extreme emissions of acidifying substances, this type of pollution is persisting, affecting the living and nonliving environment in certain areas, especially with sensitive ecosystems. An increase in acidification in connection with recovery of the economy cannot be excluded. The situation is complicated by increasing pollution by ozone precursors derived from transport.

Consequently, the REACH (Registration, Evaluation and Authorization of Chemicals) system is being prepared at the European Commission, and will include all substances without regard to the time when they were introduced onto the market.

On the basis of the results of the evaluation, measures will be proposed to decrease the risk from these substances for human health and the environment.

The draft for the new chemical legislation is currently being discussed in the EU bodies. It is expected that the new legislation will be adopted and will become binding for the member states from 2006.

The Czech Republic is participating in the negotiations on the new chemical legislation in the EU bodies and intends to continue to work actively in this area. Simultaneously, the Czech Republic is a Party to the Protocols on Heavy Metal and Persistent Organic Pollutants to CLRTAP and the Stockholm Convention on Persistent Organic Pollutants, in the framework of which it participates in international attempts to reduce the burden on the environment and human health from these pollutants.

Individual targets and measures

3.1.1 Reduction of the burden on the environment and the population from toxic metals and organic pollutants

- Continue to improve the effectiveness of monitoring of the contents of organic pollutants and toxic metals in drinking water and expand this monitoring in water, the soil and the air as potential sources of these substances in foodstuffs.
- Update the legislation of CR in the framework of the prepared new EU chemical policy.
- Transfer responsibility for assessment of the hazardous chemical substances for human health and the environment to the producer and importer and establish the corresponding responsibility of industrial users.
- Introduce the system of assessment of the hazardousness of chemical substances employed in EU (OECD).
- Reduce the production and use of very hazardous substances and replace them by less hazardous substances.
- Introduce a system of time-limited permits for the use of very hazardous chemical substances in an attempt to reduce their use to the lowest possible level.
- Regulate placing of the most hazardous chemical substances on the market and their use on the basis of the results of evaluation of their hazardousness.
- Reduce the number of local heating units burning coal, where the unregulated burning of municipal wastes leads to the formation emissions of toxic substances.
- Extend the list of substances monitored in the integrated pollution register.

3.1.2 Reduction of the burden on the population from toxic metals and organic pollutants in the food chain

- Implement measures set forth in the Food Safety Strategy.
- Support international cooperation in the area of monitoring of organic substances and toxic metals in the environment as potential sources of these substances in foodstuffs.

3.2 Reduction of the Number (total area) of Territories where the Critical Loads are Exceeded (acidification of the environment)

Brief description of the subject area

In the Czech Republic still exist large areas where the critical loads are exceeded for SO₂, NO_x, and NH₃. Although the

extreme emissions of acidifying substances (SO_x , NO_x) from large combustion sources were reduced in the 90's, this type of pollution persists and detrimentally affects the biodiversity and forest ecosystems in certain areas (see Chapter 1.1). The situation is complicated by pollution by tropospheric ozone precursors derived from transport and industry. These consist in volatile organic compounds (VOCs), which enter into complex photochemical reactions together with nitrogen oxides (NO_x), occurring in the ground-level layers of the atmosphere. These atmospheric pollutants remain in the air for a relatively long time, enabling their transport to great distances. Consequently, the individual locations are affected by a large number of relatively distant emission sources. This complicated relationship between the sources of emissions and their negative impact on a specific location is leading to the formulation of a new European strategy in combating acidification, eutrophication and tropospheric ozone (CAFE – Clean Air for Europe, see 4.2), which takes into account the economic effectiveness of adopted measures (the ratio between costs and environmental benefits).

Individual targets and measures

3.2.1 Reducing the areas of territories where the critical loads from the air are exceeded

- Implement an Integrated National Program to Reduce Emissions.
- Implement Regional Programs to Reduce Emissions and Improve Air Quality
- Monitor and assess critical loads, predictions and emission forecasts.
- Incorporate the results of these activities into the instruments of land-use planning and into decision-making on location of construction of air pollution sources.

3.2.2 Meeting national and regional emission ceilings and improving air quality

- Implement an Integrated National Program to Reduce Emissions.
- Improve measurement of emissions at the sources together with systematic control by CEI.
- Improve emission inventories.
- Make public the method of evaluating air quality and improve interpretation.
- Support reduction of all sources of hazardous substances and look for substitute approaches.
- Provide financial support for improvement measures from SEF.
- Control compliance with pollution limit levels using the CHMI measuring network.
- Continue to implement the system of monitoring the state of health of the population in relation to the environment.

3.3 Protection of the Environment and Humans against Noise

Brief description of the subject area

Noise is continuing to decrease the quality of the environment for humans and animals. Together with vibrations, it is becoming a cause of reduction of human productivity and causes fatigue, stress and insomnia and can affect the progress of

other diseases. It is generally greatly underestimated. Increasing transportation, especially by automobiles, is the main cause of increasing noise (60%), where about a quarter of the inhabitants of Europe are exposed to excessive noise. Consequently, all technical equipment must be designed, assessed and operated also from the standpoint of minimization of noise in accordance with Government Regulation No. 9/2002 Coll., as amended. Similarly, in the framework of state health-care inspection, it is necessary to consistently imple-



ment the requirements following from Act No. 258/2000 Coll., on protection of the public health and amending some related laws, as amended, and the related Government Regulation No. 502/2000 Coll., on protection of health against the detrimental effects of noise and vibrations, as amended, in regulating noise levels in protected outdoor areas. The implementation of strategic Directive 2002/249/EC of the European Parliament and Council (in the draft Act on Assessment and Reduction of Noise in the Environment, with expected legal force from July 1, 2004) will create conditions for meeting the long-term EU targets, including delimitation and protection of quiet territories in the open landscape (recreation, nature protection). Suitable indicators have been defined – L_{day} (day-evening-night) and L_{night} – and methods have been developed for their calculation, together with estimation of the fraction of inhabitants (in %) burdened by excessive noise. The effectiveness of measures (assessment of costs and benefits) is connected with adequate monitoring, mapping and evaluation, which enable obtaining of information on the relationships between noise levels, and noise sources and health and environmental consequences. At a national level, the effects of sources with unacceptably high noise levels should primarily be eliminated and quiet areas in the landscape should be protected (amongst other things as a part of protection of biodiversity, see 1.1). In urban and industrial agglomerations, the noise levels from sources will be decreased by stricter requirements on new production (means of transport including track vehicles construction machinery, sports and hobbies). The Action Plans, which will be compulsorily prepared on the basis of this law, with also include land-use planning (transport by-passes and corridors), transport restrictions, pedestrian zones, noise barriers, noise insulation of residential and office buildings, etc.

Individual targets and measures

3.3.1 Protection of quiet areas in the landscape

- Prepare identification of quiet areas in the landscape, propose and introduce measures to protect quiet areas in the landscape on the basis of the prepared Act on Evaluation and Reduction of Noise in the Environment.

3.3.2 Reducing the burdening of the population in settlements from exposure to transport noise and noise from industrial activities

- Create and implement a legislative framework for evaluation and reduction of noise in the environment.
- Gradually reduce the hygiene limit for old noise burdens from transport.

3.4. Sustainable Landuse

Brief description of the subject area

The goal of landuse is to minimize the impact of human activities on valuable agricultural and natural land, to bring back into productive use the unused, derelict land (“brownfield sites”), to eliminate contaminations, to prevent the fragmentation of the landscape by developing and maintaining effective green structure and natural reserves of biodiversity. It is necessary to support – by legislative, financial and educational tools – those economic activities connected with landuse (for example agriculture, forestry, mining, construction, transport, tourism) that are most friendly towards the landscape preservation.

Individual targets and measures

3.4.1 Renewal of the function of the disturbed landscape

- Eliminate environmental damage, contamination and disturbance.
- Reduce the area of the landscape impacted by mining.

3.4.2 Reuse of the derelict (“brownfield”) land

- Reduce annexation of the green land for new developments.
- Increase the effectiveness of landuse in built-up areas.

3.4.3 Minimize the negative interventions into landscape systems

- Improve the documentary basis for land-use planning through landscape plans.
- Prepare a methodology for landscape plans.
- Minimize the negative impacts of mining.

3.4.4 Sustainable landscape management

- Adopt the principles of sustainable landscape management and implement them into the process of developing of strategic documents.
- Continue in the sustainable forest management as a form of environmentally sound management.
- Implement environmental aspects of agricultural management through Good Agricultural Practice.
- Incorporate environmental aspects of forest management into Forest Management Plans.
- Support environmentally sound forms and intensities of tourism burdening of areas.
- Make land accessible through the construction of field roads, bicycle routes, hiking routes, educational trails and thematic trails and support small ecotourism and ecoagritourism business enterprises.
- Support the “green code” for operators of hotels and accommodation facilities.

- Support the introduction of eco-management and audit schemes in tourism sector (destination certification).
- Support the renewal and maintenance of local railway lines and railway stations as potential centres for services in environmentally sound hiking and cyclo-tourism.

3.4.5 Sustainable urban development

- Protect green structure and natural reserves of biodiversity in urban areas.
- Support the creation and extension of green belts around cities.
- Improve protection and care for public greenery and other natural components of urban areas.

3.5 Reduction of Anthropogenic/Industrial Impacts and Risks

Brief description of the subject area

In protection of the population and the environment, minimization of the burden from industrial effects and risks is a basic approach for improving the quality of life of the population and preventing the formation of permanently damaged zones. These effects include long-term emissions, pollution levels and pollution deposition, industrial accidents and accidental escapes of hazardous substances, emissions of toxic chemical substances from production and transport, contamination of ground waters and soils by old environmental burdens, industrial wastes and waste waters, ionising radiation, escapes and risks connected with genetically modified organisms, etc.

An important instrument in reducing industrial impacts and risks is integrated prevention (IPPC – Integrated Pollution Prevention and Control). The chief goal of IPPC is to achieve a higher level of protection of the environment as a whole against industrial pollution. The purpose of an integrated approach to control pollution is to prevent emissions into the air, water and soil where this is practically feasible and to prevent transport of pollution between individual pollution flows. The introduction of the best available techniques (BAT) is an effective means of achieving this goal. Council Directive 96/61/EC on IPPC, which came into force for all of EU on October 31, 1999, is an effective instrument for implementation of the principle of integrated prevention within the European Union. This Directive was implemented into the Czech legislation through Act No. 76/2002 Coll., on integrated pollution prevention and control, the integrated pollution register and amending some laws (Act on Integrated Prevention) and its regulations for implementation. Voluntary instruments, which are described in more detail in Part 4 on p. 63, are based on similar principles.

This approach should be beneficial not only in a further reduction of the burden on the environment, especially through the use of the best available techniques and thus also more effective utilization of production procedures, but especially a change in the relationship between the operator of the installation, the state authorities and the general public. The achieved level of production and state of the environment will require a change in the behaviour of both entrepreneurs and the relevant state authorities. This should lead to a joint search for the most effective route to sustainable development in society. Integrated prevention can be of fundamental benefit in transition to the pathway of sustainable development.

In accordance with the EU policy, it is necessary to provide a high level of protection of the population in a suitable

and effective manner, i.e. prevention of the danger of major accidents involving hazardous substances and reduction of the consequences of such accidents for humans and the environment, especially through:

- a) Controlled location of new buildings, modification of existing buildings and newly planned transport routes, busy places and residential areas in the vicinity of existing buildings.
- b) Implementation of the principles of land-use planning, which must ensure that suitable distances are maintained between dangerous sites and residential areas.

In addition, the use of GMOs should be assessed in accordance with the precautionary principle pursuant to the existing legislation and especially risk analysis should be carried out. On the basis of risk analysis, only those activities with GMOs should be permitted that constitute a comparable or lower risk than activities with the corresponding unmodified organisms.

Because of the industrial tradition in the Czech Republic, old environmental burdens are a considerable problem; these have created dangerous anthropogenic geochemical anomalies in the soil, lithosphere and hydrosphere and must be remedied. Negative anthropogenic effects and risks are also connected with contaminated premises of production factories, unsuitable storage areas for industrial wastes, contamination of military areas by automotive fuels or old ammunition, etc.

Basic preventative instruments in reducing negative anthropogenic and industrial effects and risks include integrated pollution prevention and control (IPPC) and environmental impact assessment (SEA, EIA).

Individual targets and measures

3.5.1 Mitigation of the consequences of major accidents

- Introduce measures to reduce the probability of major accidents (organizational and technical measures)
- Prepare and implement a system of controlled location and maintenance of a suitable distance between new dangerous sites and installations and residential areas in the framework of land-use planning and decision-making on location of structures.
- Modify existing buildings and installations, busy sites and residential areas in the vicinity of existing buildings and installations so as to maintain a suitable distance between dangerous sites and residential areas.

3.5.2 Prevention of major accidents

- Create a functional system for prevention of major accidents.
- Introduce measures to eliminate potential sources of risks (e.g. changes in technology, replacement of hazardous chemicals, reduction of the capacity for explosive materials)

3.5.3 Provision for safe management of GMOs

- Prepare and implement a system of responsibility for damage caused by management of GMOs and their release into the environment on the basis of general principles of responsibility for damage in the area of the environment.
- Prepare and implement an early warning system on release of GMOs into the environment.
- Implement a system of participation in decision-making on management of GMOs.

- Introduce a system of exchange of information between the affected sectors (the environment, health care and agriculture), so as to ensure interconnection between permit-issuing and control of GMOs – products produced from GMOs (foodstuffs, medicinal substances, feedingstuffs, etc.).
- Implement the new legislation of the European Communities and participate actively in the processes of preparation of legislation, international standards and methodologies and exchange of information at the level of EU.
- Complete the system of control of management of GMOs.

3.5.4. Remediation of environmental burdens from the past

- Eliminate the most high-risk environmental burdens from the past utilizing the existing mechanism of the National Property Fund and decontamination of sites occupied by the Soviet army and on the basis of the Water Act.
- Accelerate the process of elimination of environmental burdens from the past arising prior to privatisation.
- Utilize EU funds to verify risk levels at selected sites and to provide for the actual remediation work at the sites, where environmental burdens from the past directly endanger the components of the environment and human health.
- Update Regional lists of priorities for remediation of environmental burdens from the past, in an attempt to obtain up-to-date well-based information on sites whose decontamination is carried out by other sectors or from private sources.
- Improve the system of public control of decision-making on decontamination of environmental burdens from the past.
- Evaluate the health risks related to the decontaminated environmental burdens.
- Monitor exposure and the effects of pollutants from the remedied environmental burdens on human health.
- Biological monitoring related to the decontaminated environmental burdens.

3.6. Protection of the Environment against the Detrimental Effects of Natural Disasters and the Consequences of Emergencies

Brief description of the subject area

An emergency is understood to mean an extraordinary event in which a state of danger, state of emergency or state of endangerment is declared, in cases where the natural catastrophe, emergency, accident or other kind of danger has dimensions that constitute an extensive danger to the lives and health of humans, the environment, property, the internal order of the country and the safety of citizens. Serious terrorist acts, extensive floods and other events, major industrial accidents and other states of emergency and the current international situation are reasons for adopting ever stricter measures of a legislative and organizational nature to prevent their detrimental effects on human health and lives, the environment and property and to maintain the basic functioning of the state.

On the basis of the valid crisis legislation, it is necessary to create a system of crisis management in the framework of the sector, with a conception on a countrywide, regional and national level in coordination with the EC legislation and NATO.

Crisis management consists, amongst other things, in utilizing the function of working processes under considerably worsened conditions and in demanding situations. Dealing with crisis situations is based on the safety policy of the state and the



legislative framework, following from the system of legal regulations on crisis management. The relevant measures are adopted in the form of decisions and programs, intended to support cooperation in interventions to protect lives, human health and the environment. The crisis management system in CR is based on the generally valid legislation, which is the starting point for crisis planning and management.

The crisis plan will be one of the basic documents for creation of a countrywide conception of protection of nature and the landscape and creation of a countrywide conception of technical protection of the environment.

The main target of crisis management in the framework of the sector consists in protection of the environment against serious damage caused by crisis situations.

Individual targets and measures

3.6.1. Creation and codification of crisis management procedures in the environment

- Prepare a conception of crisis management in the sector and incorporate its outputs into the relevant legislative and conceptual documents at all levels (national, regional and local) for the purpose of creation of measures to mitigate the consequences of danger to the environment.

3.6.2 Prevention of the occurrence of crisis situations and reduction of their detrimental effect on the environment

- In the framework of the crisis plan, prepare a system of crisis management in the sector to deal with major floods, prolonged inversion conditions (type plans), pollution of the air and waters, excessive accumulation of wastes, especially hazardous wastes, environmental burdens from the past, old mine works, landslides and rock falls, hazardous chemical substances and genetic modifications, which will become part of the national conception of environmental protection.
- Prepare an information system of crisis management in the area of the environment.
- Prepare documents on sources of crisis risks, identify them, reduce their effects and strengthen protective mechanisms.
- Modernize the forecasting, warning and notification services.
- Reduce the amount of stored and produced hazardous chemical substances in flood zones.
- Delimit areas with a tendency towards disturbed slope stability and the risk of rock falls.
- Support protection of the critical infrastructure system in branch policies and the crisis plan of MoE.

4. Protection of the Climate System of the Earth and Prevention of Long-range Transport of Air Pollution.

4.1 Reducing Greenhouse Gas Emissions (GHGs)

Brief description of the subject area

Global climate change, caused by emissions of greenhouse gases (carbon dioxide, methane, nitrous oxide, fluorinated hydrocarbons), leads not only to a gradual increase in the temperature of the surface of the Earth, but also to a change in the distribution of precipitation and increased occurrence of extreme atmospheric events (torrential rain, gales, droughts, heat waves, etc.). Consequently, climate change causes increasing pressure on ecosystems and global civilization.

At the present time, the issue of climate change and reduction of emissions of greenhouse gas (especially carbon dioxide) is one of the key subjects of environmental policy throughout the world. Although the specific impacts of global climate change will have different effects and different intensities in various parts of the world, climate change constitutes a truly global problem that must be resolved through cooperation at an international level. The Czech Republic became a Party to both the UN Framework Convention on Climate Change (the Convention) and also the Kyoto Protocol (Protocol), which it ratified on November 15, 2001. In the Protocol, it pledged to reduce aggregate emissions of greenhouse gases in the 2008 – 2012 control period by 8% compared with the reference year of 1990. Trends in emissions of greenhouse gases in recent years (a marked decrease) indicate that CR will not encounter serious difficulties in meeting this target. Conditions in CR appear worse when relative indicators (emissions per inhabitant and per unit GDP) are taken into account. The following important reasons exist for the policy of CR in the area of climate change:

- Construction of the reduction commitment. Problem-free setting of international obligations for the group of countries of Central and Eastern Europe (including CR) is greatly affected by the transformation process, leading to a decrease in production in some important sectors, although a number of measures implemented in the nineties must also be taken into account. The energy and carbon intensities of the economy remain high and places this group of countries above the average for contemporary developed Europe.
- Accession to EU. At the EU level, considerable attention is paid to the issue of climate change and the related energy intensity of the economy, and climate change will be a key subject in environmental policy in the coming years or decades. In the future, it can certainly be expected that there will be pressure or at least discussion of setting further reduction targets in a relative manner, i.e. in terms of emissions per unit GDP or per inhabitant, where CR would encounter difficulties.
- EU will unilaterally meet its commitments, even if the Kyoto Protocol does not come into effect.
- There is limited experience in regulating emissions of greenhouse gases. This is especially true of application of the Kyoto flexible mechanisms.
- There is a lack of the necessary institutional structures. These structures are not available and it will be necessary to prepare the administration and experts in this area in time.

Active utilisation of the Kyoto flexible mechanisms will be proposed in the area of climate change as such (joint imple-

mentation (JI) projects and international emission trading), and these will be adjusted in order to support national targets in the area of reducing emissions of greenhouse gases.

The prepared greenhouse gas emission allowance trading at a company level will be a key instrument (i.e. for selected large emission sources); this is regulated by Directive 2003/87/EC. This system will come into effect on January 1, 2005 and, in the future, will be a key instrument for reduction of greenhouse gases in the industrial sphere. Its adjustment will develop from the currently valid national emission reduction target.

More detailed elaboration of the strategic approach to the issue of climate change, including detailed specification of targets, measures and mutual relations is contained in the document National Program to Mitigate the Impacts of Climate Change in CR (National Program), which was discussed at the level of the Government of CR at the beginning of 2004.

Individual targets and measures

4.1.1 Reduction of aggregate greenhouse gas emissions and support for adaptation measures

- Implement the National Program, especially in the following manner:
 - Support and implement measures leading to a reduction in production of greenhouse gas emissions.
 - Support and implement adaptation measures.
 - Create a system of financial support for research in the area of potential impacts of climate change in CR, including adaptation measures (vulnerability study).
- Support for trading in emissions
 - Implement Directive 2003/87/EC establishing a scheme for greenhouse gas emissions allowance trading within the Community.
 - Support the use of flexible mechanisms of the Kyoto Protocol

4.2 Reduction of Transboundary Transport of Air Pollution

Brief description of the subject area

The Gothenburg Protocol to the UN ECE Convention on Long-range Transboundary Air Pollution (CLRTAP) and the EC Directive 2001/81/EC on national emission ceilings require fulfilling of the international commitments of CR related to emissions of four priority pollutants – SO_x, NO_x, volatile organic compounds (VOCs) and ammonia causing eutrophication, acidification and the formation of tropospheric ozone. The EC program “Clean Air for Europe” (CAFE) extends the above list of pollutants to include particulate matter (PM10) and devotes greater attention to tropospheric ozone. CAFE introduces a new mechanism for evaluation of pollution levels and regulation mechanisms improving air quality.

Individual targets and measures

4.2.1 Achieve national emission ceilings

- Implement and elaborate the National Program to reduce emissions.
- Create an implementation committee for the CAFE program in CR.

4.2.2 Reduction of emissions from combustion processes

- Enforce and implement the Government Regulation on the National Program to reduce emissions for existing extra-large combustion plants.
- Support replacement of local solid-fuel combustion sources (e.g. by renewable sources, energy savings).

4.3 Protection of the Ozone Layer of the Earth

Brief description of the subject area

In contrast to tropospheric ozone, which causes health problems and extensive damage to vegetation, the stratospheric ozone layer, on the other hand, protects living organisms against the harmful component of UV radiation (UV-B), which causes skin cancer and damages sight. In the last few decades, the concentration of protective stratospheric ozone has decreased considerably as a result of emissions of anthropogenic compounds, which enter the ozonosphere and decompose ozone molecules. These are particularly chlorofluorocarbons (CFC and HCFC), which were formerly frequently used in refrigeration equipment, sprays and as components of some drugs.

The Montreal Protocol and EC Parliament and Council Regulation (EC) 2037/2000 and its intended amendments substantially reduce the amounts of further emissions of substances depleting the ozone layer of the Earth. They describe technical measures required to protect the ozone layer of the Earth. On the basis of these requirements, CR must ensure that they are met in accordance with the EU procedure, from removal of substances depleting the ozone layer from use, including temporary essential use, through prevention of their emission into the atmosphere, to final disposal.

Individual targets and measures

4.3.1 Preventing and reducing emissions of substances depleting the ozone layer

- Provide technically for European Parliament and Council Regulation (EC) 2037/2000.
- Improve inspection work.
- Implement the Strategy for eliminating CFC and HCFC.
- Implement the Strategy for collection and storage of halons.
- Implement the Strategy of transition to medicinal preparations not containing CFC (freon-free medicinal preparation – MDI and PDI).
- Provide for disposal of regulated CFC substances and materials containing them.

4.3.2 Recovery of regulated substances from the area of service and disposal of old refrigeration equipment. Replacement of CFC substances in industrial refrigeration

- Introduce a system and consistently implement re-acceptance of refrigeration equipment.
- Implement the Strategy for eliminating CFC and HCFC.

4.3.4 Provision for collection of halons

- Implement the Strategy for collection and storage of halons.
- Provide financial assistance in the framework of the Program of support for protection of the ozone layer.

IV. Sectoral Policies

1. The Energy Industry

The goal of SEP in the area of the energy industry is to minimize the impact of obtaining energy, rational energy consumption and supply of energy in the regime of sustainable development. This entails emphasis on savings and elimination of wastage on the part of consumption, sound utilization of non-renewable energy sources and substantially greater use of renewable energy sources and potential savings on the part of production and energy distribution. Conditions will be created for use of renewable energy sources with meeting of national targets in electricity production from renewable energy sources in gross energy production (8% in 2010). It is expected that the environmental impact of the energy industry will continue to decrease as a consequence of the expected developments in the structure of primary energy sources, gradual elimination of price deformations and inclusion of external costs, meeting of legal requirements in the area of air protection and natural renewal of technology.

A precondition for sustainable energy supply consists in harmonizing of the tradition of developed economic and social aspects with the modern environmentally-based viewpoint, which is currently underestimated. It is necessary to create a suitable legislative, economic and information environment to support activities leading to sustainable energy supplies. From the standpoint of protection of the environment, it is important to prevent negative environmental impacts in operation of businesses in the energy industry, support for greater utilization of renewable energy sources, development of new technologies and combined production of heat and electricity. The Act on Energy Management defines institutions for protection of the environment, such as preparation of the State Energy Conception, preparation of territorial energy conceptions, preparation of energy audits, "labelling" of energy-consuming appliances, increasing of the efficiency of energy cycles, the obligation of combined production of heat and electricity, etc. The state will continue to support activities for effective use of energy (State Program to support savings and use of renewable energy sources). According to scientific estimates, it is necessary to systematically attempt to achieve the general target of stopping climate changes through a long-term decrease in national and global emissions of greenhouse gases by about 70% compared to the volumes in 1990.

Environmental requirements on energy policy:

- Support greater utilization of renewable and secondary energy sources and potential savings through the Act on Support for Production of Energy from Renewable Energy Sources and in the framework the State Program to support savings and use of renewable energy sources, create conditions for greater use of renewable energy sources in gross electricity consumption (8% in 2010) (minimally 15% in 2030), create conditions for a gradual improvement in the fraction of renewable energy sources in domestic consumption of primary energy sources at a level of at least 15% in 2030.
- Provide for an inter-annual decrease in energy intensity (energy consumption per unit GDP) in an amount of at least 2.6% by 2005, and further in the sense of meeting the targets of the State Energy Conception.
- Support implementation of key measures in the framework of the National Program to mitigate the consequences of climate change in CR;.



- Comply with emission ceilings and the National Program to reduce emissions for very large combustion sources and reduce the contribution to pollution levels.
- Support scientific and technical developments towards sustainable energy production.
- Support the introduction of modern energy-production technologies with high efficiency and the lowest possible external costs (e.g. fuel cells, heat pumps, photothermal systems, photovoltaic systems, hydrogen management, heat exchangers, central heating using biomass, cogeneration using biomass and biogas, wind turbines, small hydro-electric plants, technology using waste heat, fluid combustion, gas and steam-gas cycles) and combined production of heat and electricity.
- Support the use of low-carbon fuels rather than the use of solid fuels; in case of use of solid fuels, prefer the use of technologies with high energy use.
- Regulate the construction of installations for the use of alternative energy sources according to the prepared Methodology for planning, location and approval of wind turbines (WT) and small hydro-electric plants (SHEP), delimit areas in the territory of CR suitable for the construction of WT, delimit water courses where the construction of SHEP does not constitute a serious intervention into the ecosystem.
- Ensure compliance with manipulation rules and compliance with set minimum flow rates in relation to hydro-electric production and, in the construction of small hydro-electric plants, ensure that sufficient water remains in water courses.
- Support a good resolution of the end of the fuel cycle for nuclear facilities and in removing nuclear facilities from operation and deposition of nuclear waste, employ conceptions such that they can be utilized in the future and maximally deactivated.
- Reduce the energy intensity of the national economy through preparation of territorial energy conceptions, energy audits and activities directed towards reducing energy losses during transmission.
- Ensure access to distribution networks for decentralized production of electricity and heat; increase the ability for territorial autonomy for smaller supply circuits in cases of accidents and break-downs of superior sources and distribution systems.
- Construct and modernize the above-ground electrical network and electrical line pylons so that birds are not wounded and killed.
- Place greater emphasis on evaluation of construction cycles from the standpoint of energy and the use of energy-saving technologies.

- Support energy savings in heating and cooling buildings, development of energy audits and certification of heating systems, improved insulation of buildings, and lighting systems, including support for the construction of low-energy buildings.
- Support the construction of the necessary capacities for treatment of wastes suitable for processing into fuel, unless their material use is more advantageous, and support the construction and use of suitable technologies for utilization of fuels produced from wastes.
- Support professional consulting and enlightenment in the area of effective energy use and initiate a change in patterns of behaviour amongst end consumers of energy towards effective energy use and increase public awareness of energy-effective end appliances;
- Increase internalisation of external costs in energy production (incl. the relevant external transport costs).
- In this connection, implement price and tax policy in accordance with trends in EU and strengthen the motivating system for support for energy savings, utilization of renewable energy sources and combined production of heat and electricity.
- Reinvest financial means obtained from collection of external costs in energy production into the development and application of modern energy technologies with low external costs and into programs for protection of the environment (e.g. through SEF).
- Affect the internal market in electricity and gas through taking into account environmental priorities and enable choice of suppliers of environmentally sound production of electricity and biogas.
- Establish a regulation framework taking into account environmental requirements for the energy branch.
- Take the needs of environmental protection into account in extraction of domestic energy materials.
- Emphasize reclaiming following mining activities.
- Utilize the recommendations of the Implementation Program of CR for wastes from the energy industry and for hazardous wastes, including procedures and measures leading to a reduction in the environmental and health risks in management of hazardous wastes in the energy industry.
- Prepare an emergency plan for the energy industry and, in the framework of the IPPC permit-issuing procedure, provide for the required environmental targets in the energy industry.

2. Mineral Extraction

The geological environment has long been affected by human activity. In addition to the extraction of ore and non-ore minerals, this also includes various kinds of construction work, including deposition of wastes both on the surface and underground and activities connected with contamination of the geological environment, soil and ground water.

A continuation of the cut-back in mining of fossil fuels can be expected in connection with the reduction of the energy intensity of the economy and restructuring of energy sources. On the other hand, it remains necessary to expect that mineral sources will be utilised, especially for traditional branches of light industry (kaolin, clays, feldspar, glass-making sands, limestone), where emphasis should be placed on optimal use of industrial minerals. The extraction of construction materials will also continue (decorative and crushed stone, gravel-sands, etc.), affecting the state of the landscape. Sulphur removal at

energy sources leads to increased consumption of limestone. In accordance with the principles of sustainable development and the employment policy, it is necessary to provide for maximum added value of extracted minerals in the individual regions of CR. It will be necessary to continue to increase the fraction of recycled construction materials in total consumption, to provide for meeting of any increased demands of the construction industry in modernizing the infrastructure and reducing requirements on space for storage of construction waste. In relation to the industrial history of the Czech Republic, it is increasingly important to obtain geochemical information on anthropogenic contamination of the soil, sediments and ground waters for their future optimal utilization and to use the information and maps obtained at all levels of management.

Environmental requirements in mineral resources policy:

- Reduce the negative impacts of extraction of minerals on the environment and landscape, secure or liquidate old mine works endangering the legally protected general interest, including safety of persons, reclaim and ensure recovery of areas affected by mining.
- Create conditions to provide for the needs of the national economy in relation to mineral materials while respecting the principles of sustainable development and environmental limits on mining.
- Support the meeting of the environmental targets of the Mineral Resources Policy.
- Elaborate a uniform mineral resources policy of the state to encompass specific conditions for regions and localities for the purposes of decision-making in territories respecting the principles of sustainable development.
- Increase the level of recycling, especially of construction materials, and the use of wastes as secondary raw material.
- Create a stimulating environment for comprehensive utilization of mineral resources and for minimizing wastes in utilizing mineral resources; in this way, reduce the overall environmental impact of extraction of minerals and thus prolong the lifetimes of stocks of mineral resources.
- Achieve the level of the EU countries in lower extraction of nonrenewable resources of minerals through technical developments, their comprehensive utilization and greater utilization of secondary raw materials, and recycling.
- Apply the principles of sustainable development and environmental limits on mining in utilizing nonrenewable natural resources and in implementing greater utilization of secondary raw materials in land-use planning.
- Limit dredging of river beds in an attempt to obtain raw materials.
- Carry out an analysis of mining law from the standpoint of the related legislation of the EU countries; on the basis of this analysis, prepare desirable modifications in an attempt to attain the level of legislation and administrative procedures employed in the EU countries and greater participation of municipalities and the public in decision-making on extraction of raw materials in their territories.
- Re-evaluate the system and amount of payments of fees for mining space in an attempt at differentiation according to the value of the affected territory, degree of impact and character of work carried out; modify the legislation in this respect.
- Maximally limit the impact of utilization of mineral resources on PLA using the completed analyses.
- Consistently promote and implement territorial protection of mineral deposits (nonrenewable natural resources) through

establishing of protected deposit areas and taking into account natural mineral resources in land-use planning

- Reduce methane emissions in mining and extraction of coal.

3. Industry

Sustainable development in society cannot be conceived without the development of industry. Consequently, the greatest emphasis will be placed on the prevention of the detrimental impacts of industry on the environment and the lives of humans. Accession of the Czech Republic to the European Union will require a substantial general transition on the part of manufacturing enterprises towards development of preventative measures directly in the production process. The legal framework for fulfilling this task is created, e.g., by Act No. 76/2002 Coll., on integrated pollution prevention and control. Implementation of Act No. 406/2001 Coll., on energy management.(energy savings) is not less important.

The introduction of quality systems and systems of environmental management of companies according to standards of the ISO 9000 and ISO 14000 series has become firmly established. State assistance from SEF and the MoIT TRH (MARKET) program is oriented towards small and medium-sized companies.

However, other voluntary activities and agreements also play an irreplaceable role, especially

- National Cleaner Production Program
- National Program of introducing environmental management systems (EMAS)
- Ecolabelling Program, and others.

The results achieved and the considerable amount of funds expended by business entities constitute a good starting point for the future, in which no sudden changes are expected in reducing the amount of emissions, as happened in the last decade of the past century, and potential pathways for future developments must be sought in this area.

The integrated approach to issuing permits for installations leads to a joint search for a further potential increase in environmental protection on the part of entrepreneurs and the affected state administrative bodies. Consequently, the System of exchange of information on the best available techniques will play a key role in the forthcoming years.

In the future, it will be necessary for, not only industry, but all of society to orient itself towards an integrated production policy, i.e. concerned not only with reducing the environmental impact of production technology, but also with reducing the environmental impact of products throughout their life cycles. Modern concepts of sustainable production and consumption can be employed only with broad public participation.

Environmental measures in industrial policy:

- Consistently implement the environmental viewpoint in industrial sectoral policies.
- Emphasise environmental aspects in all strategic plans for development of industrial and commercial activities, in an attempt to achieve a further reduction in the burden on the environment produced by the secondary sphere, respecting of the principles of sustainable development and further “greening” of industry, which will, amongst other things, lead to an increase in competitiveness and exclude the danger of accusations of ecodumping.
- MoE, in cooperation with sectoral associations of companies, is to ensure accordance of industrial policy and the re-

lated conceptions with SEP and the principles of sustainable development.

- Develop structural plans in industrial production towards products with a higher degree of completion and greater added value, with a more favourable impact on the environment.
- Support voluntary introduction of BAT, including financial support.
- Prepare a program of support for extensive use of low-emission, low-waste and energy-saving technologies not entailing excessive costs and closed production cycles.
- Support programs concerned with the development of environmentally sound machine industry and to support environmental investments for protection of air purity, for waste water treatment, for processing and disposing of wastes and for introduction of “cleaner” technologies.
- Ensure compliance with emission ceilings and fulfilling of the National Program to reduce emissions for extra large combustion plants, reduce the contribution to pollution levels and reduce VOC emissions.
- Reduce emission of pollutants into the air and water, and pollution of watercourses by industrial waters and waste and chemical substances, and improve treatment of waste and mine waters.
- Reduce the production, import and use of hazardous chemical substances and replace them by alternative products.
- Support testing methods for testing chemical substances and their introduction into practice and support the development of testing laboratories and their technical and professional facilities.

4. Business

Influence the market towards orientation towards the environment

A healthy, beautiful environment that is rich in incentives and natural resources is undoubtedly one of the significant preconditions and indicators for the level of the economy and living standard of the population. As such, it is undoubtedly an important value on the side of “demand” both in decision-making on locating investments and in decision-making of the population on places for residence and recreation. The operation of businesses, especially in the area of tourism is greatly dependent on its quality; tourism can be an important part of the economic profile of the country, regions, cities and municipalities. This is an important economic attribute of a territory in relation to service-based businesses.

Up to the present, attitudes towards the economic sphere were oriented towards establishing standards and targets and the subsequent ensuring that society complies with these standards. This approach was supplemented by instruments based on the action of market mechanisms, such as utilization of consumer taxes for protection of the environment in relation to certain products. The purpose of this instrument was to change price signals in the market in favour of products, processes and services that are friendlier to the environment. In addition, environmental tax reform can have a favourable impact on trade, combining new or increased taxes with lower taxation on work in an attempt to increase employment. Under favourable circumstances, taxes can be highly effective in protecting the environment, both from the standpoint of costs and from the standpoint of environmental requirements. These taxes also constitute a stimulus for research and investments of companies in technologies that are

friendlier to the environment or have lower demands on consumption of resources.

Markets and consumer demand can be turned towards products and services that are friendlier to the environment than competing products, through the provision of information and enlightenment and the guarantee that these products reflect true environmental costs to the greatest possible degree. Thus, the consumer will also be able to adopt a life style that is friendlier towards the environment and can make decisions on the basis of the relevant information. State subsidies are another area of market processes that must be taken into consideration when they lead to unintended but detrimental environmental impacts.

International trade has significant positive and negative impacts on environmental protection. On the one hand, it enables the dissemination of modern environmentally friendly technologies; simultaneously, when it is not consistently regulated, it contributes to the felling of tropical rainforests and the taiga, and endangering of species of fauna and flora.

Environmental measures in commercial policy:

- Professionally provide correct and easily accessible information to consumers on the environmental properties of products, services and travel destinations, where their decision-making can support environmentally sound initiatives and companies.
- Consistently provide information on the presence or absence of hazardous substances, on the origin of materials used in certain products, on the recyclability of products, etc.
- Introduce rules for providing information on products of all types and declarations of manufacturers related to the environmental impacts of products.
- Introduce suitable mechanisms of monitoring the veracity of these manufacturers' declarations on the environmental impacts of their products.
- Prepare principles to assist companies in meeting the requirements of the prepared Directive on misleading advertisements.
- Support environmentally friendly procurement of goods and services using the relevant Directives and principles and examine procedures for purchasing goods in institutions from the standpoint of environmental soundness of the purchased products and services so that these institutions are good examples to the rest.
- In accordance with the new principles of the European Commission, utilise state assistance in the area of the environment, which will expand the ability to utilise potential in the area of subsidies for environmental purposes, with simultaneous minimising of the impact on competitiveness in the framework of a common market.
- Where financial institutions offer environmental or "green" investment funds, establish voluntary principles for what may or may not be called an environmental or "green" investment.
- In cooperation with the European Investment Bank and the European Bank for Reconstruction and Development, react to the increased consideration for environmental interests and targets in the area of care for the environment in providing loans.
- Ensure that an evaluation of the impact of trade agreements on sustainable development is made.
- Support proper procedures in protection of the environment for direct foreign investments and for export loans.

- Employ legislative measures to terminate imports of materials and products derived from the wood of tropical rainforests and the taiga, which are not cultivated in a sustainable manner and are not certified, and thus decrease the pressure on the catastrophic harvesting of tropical rainforests and the taiga.
- Ensure the prohibiting of import and export of wood from forests that were not cultivated in a sustainable manner and that is not certified from this point of view (tropical rainforests, temperate forests and the taiga).
- Utilise the recommendations of the Implementation Programs for the Waste Management Plan of the Czech Republic, especially the Implementation Program for packaging and packaging wastes, for electrical and electronic equipment, for oils, for tyres, for batteries and storage batteries, for end-of-life vehicles, for industrial wastes and others that contain suitable recommendations.
- Increase energy labelling of goods.
- Increase the control of the movement of hazardous substances in trade.
- Provide for the aspect of GMOs in imports and exports.
- Support the import and export of cleaner technologies and BAT, employ these principles in large and medium-sized sources.
- Limit imports of obsolete equipment, machinery and procedures.
- Prepare trading in emissions of greenhouse gases.
- Prohibit imports of substances depleting the ozone layer of the Earth and consistently implement regulation of imports according to EU requirements.
- Limit the undesirable export of raw materials with low added value without processing.

5. Transport

At the present time, transport is one of the most rapidly developing fields of human activity. It significantly affects the lives of humans in both positive and negative ways. While the negative environmental impacts of other branches are decreasing in the Czech Republic, they are increasing in transport, especially highway transport. Comparison of transport outputs in favour of the environmentally least sound kind of transport, i.e. highway freight transport, is also developing unfavourably.

The conception of gradual transfer of part of freight transport, especially in highway transport, to environmentally sounder kinds of transport, such as rail transport and combined transport, is one of the basic attributes of sectoral documents in transport (Transport Policy of CR, Medium-term strategy in the transport sector, telecommunications and postal services, Development of the transport network in CR to the year 2010). In passenger transport, the main target in regular urban and metropolitan transport is to favour provision of public mass transport through integrated transport systems, including promotion of park-and-ride and bike-and-ride systems.

A long-term task continues to consist in reducing the impact of transport on air quality, especially in residential areas. This task is gradually implemented through adopting abatement measures to reduce the environmental burden from transport and is manifested in a constant decrease in specific emissions from means of transport. The new legislation lays down strict requirements on motor vehicles in the area of emissions of greenhouse gases, automotive fuel quality for means of transport and non-highway mobile machinery, and thus ensures compatibility with the technical requirements of the relevant

EU Directives. In the future, it will be necessary to supplement applied reduction measures to include measures of a restrictive and economic character (e.g. limiting traffic in the most affected areas, calculation of external costs and their gradual transfer to the owners and operators of vehicles, etc.).

There continue to be detrimental impacts from traffic noise, vibrations and soil contamination as a consequence of escape of pollutants at the sites of loading, unloading and application of substances detrimental to the environment. The adjustment of the standards of the relevant transport regulations is fully in accordance with the trend towards reducing health risks caused by excessive noise and vibrations, especially in highway, air and railway transport. The conditions and criteria are identical with the regulations of international transport organisations.

Another important aspect is the barrier effect caused by the existing transport infrastructure (frequently multiple or network). This complicates or prevents the migration of wild fauna, leading to a loss of natural habitats. It is very difficult to provide passageways through the existing infrastructure; nonetheless, this should be carried out in sections of the highly fragmented landscape. For new construction and reconstruction of highways, superhighways and railways, it is necessary to consistently implement the SEA and EIA processes.

The aspect of management of end-of-life vehicles is a no-less serious problem with a detrimental impact on the environment. From the standpoint of their material composition, end-of-life vehicles are a suitable commodity for recycling. Consequently, it is necessary to create conditions and to support and adopt measures that would open a pathway for more extensive entrance of the business sphere into recycling end-of-life vehicles.

In the last few years, the EU policy in the area of the environment has been directed towards prevention of pollution. A great many instruments fulfilling the basic idea of the strategy of cleaner production have been developed and, in some cases, introduced. One of these is the environmental management system (EMS), introduced according to the international standards of the ISO 14001 series and the European Parliament and Council Regulation on the eco-management and audit scheme (EMAS). The successful voluntary introduction of these systems in organisations assists in providing for protection of the environment to a greater degree than laid down by the law.

From the standpoint of international activities, the issue of negative impacts of transport on health and the environment is resolved in the framework of the joint activities of the WHO and UN ECE Pan-European Program for Transport, Health and the Environment.

Environmental measures in transport:

- Support a change in the fraction of passenger and freight transport in favour of environmentally sounder kinds, such as railway, combined and also public passenger and bicycle transport.
- In modernisation of the highway network, employ preferentially the existing network or its corridors and thus reduce fragmentation of the landscape by new routes, and not decrease the ability of fauna to pass through the landscape.
- Support suitable technical and infrastructure measures (highway bypasses of cities, noise barriers along highways and railways) leading to minimising of health risks and detrimental environmental impacts caused by excessive bur-



dening of settlements by noise and emissions of pollutants from ground traffic.

- Systematically support a greater share of environmentally sound means of transport in the framework of the region in the creation of developmental concepts and plans at the regional level.
- In the framework of implementation of the National Strategy for the Development of Bicycle Transport in CR, create a denser network of safely separated cyclist routes.
- Support the construction of facilities for bicycle transport in combination with public transport (bike-and-ride system) and pedestrian transport.
- Continue to support the construction of comprehensive integrated transport systems in cities and their vicinities with greater use of rail transport (incl. railways) as environmentally sounder kinds of public mass transport.
- In urban areas, support a combined system of individual and public transport (park-and-ride system), supplemented by regulation of parking and of access of passenger cars to the city centre.
- Create strategy and support the development of a public transport system in protected territories.
- Reduce consumption of nonrenewable energy sources in the transport sector.
- Support the use of alternative fuels (especially in urban mass transport), including construction of the distribution network, so that they contribute at least 20% in 2020.
- Improve the system of control of the technical condition of motor vehicles in operation so as to prevent excessive damage to the components of the environment.
- Reduce traffic noise, continue to monitor noise in the vicinity of ground transport routes (highway and railway).
- Support the implementation of measures to reduce excessive noise from air transport and delimitation of noise protective zones around airports according to the EU recommendations in an attempt to eliminate or compensate the impact on the surroundings of air transport.
- Implement programs leading to a reduction of emissions from transport.
- Reduce and gradually exclude substances depleting the ozone layer of the Earth in air-conditioned vehicles.
- Concentrate on increasing safety in transport of dangerous things.
- Minimize wastes from transport with emphasis on reuse.
- Limit the spreading of invasive species of flora and fauna in the import of goods.

- Support measures to increase transport safety and protection of pedestrians and cyclists.
- Continue to gradually internalise external costs from transport and thus create new conditions in transport.
- Support the introduction of telematic systems, reducing the risk of congestion.
- Reinvest financial means obtained from collection of taxes and fees from transport into the development and application of modern environmentally sound transport technologies, including the relevant infrastructure.
- Support the introduction of voluntary instruments (e.g. EMS) in an attempt to provide for protection of the environment beyond the framework of the relevant laws in the framework of the transport sector.
- Take the environmental viewpoint into account in expenditures from the budget of the State Fund for Transport Infrastructure;
- Support environmental education and public awareness in the area of reducing the negative effects of transport on health and the environment.
- Consistently monitor and evaluate the impacts of the individual kinds of transport on the state of the environment.
- Support scientific research work, especially in connection with extending projects concerned with reducing the detrimental impacts of transport on the individual components of the environment.
- Develop international cooperation in dealing with issues of protection of the environment against the detrimental impacts of transport (the PEP EHK/OSN, WHO, CEI programs).

6. Agriculture and Forest Management

Most of the territory of the Czech Republic consists of agricultural or forest land. Although commercial activities in both agriculture and forestry are concerned mainly with production, they are both related to the available natural resources, which they affect through their activities.

Over the past 60 years, agriculture in the Czech lands has undergone a period of fundamental changes, which have created its character and its impacts on the surrounding nature and landscape. Excessive combining of properties in an attempt to ensure self-reliance in food resulted in industrialisation of agriculture (use of excessive amounts of fertilisers, pesticides and heavy agricultural machinery). In the past decade there has been a partial decrease in degradation of natural resources as a consequence of the decrease in the consumption of fertilisers and plant-protection agents, a decreased number of cattle, especially confined to barns, grassing over or afforestation of arable land and development of environmentally sound agriculture.

Biological diversity is still not conserved on agricultural land, and this is manifested in a reduction in the populations of indigenous species of wild fauna (partridges, hares, ground squirrels). There is also a decrease in the biodiversity of farm animals and agricultural crops and a great many original breeds of animals and varieties of plants are disappearing. In a number of cases, agricultural land, especially more valuable land, is not sufficiently protected. The outflow conditions are disturbed, and the soil is compacted and subject to erosion, with a local increase in the risk of floods. The degradation of agricultural land and its pollution is also unfavourable for agriculture and the environment, and is manifested in a reduction in the diversity of soil flora and fauna and extensive water pollution.

Agricultural land left fallow can also be a problem; if this land is not maintained, self-sown species invade it, and thus it is necessary to promote the growing of energy and technical crops on these areas. Intensive breeding of farm animals results in major sources of ammonia and greenhouse gases and is serious from the standpoint of new risks for humans and the environment.

Forest ecosystems are even more important than agricultural lands for the occurrence of wild flora and fauna; 26.5% of the area of all the forests in CR are located in specially protected territories. They are also of fundamental importance for improving the environment, especially the quality of the air and drinking water sources. Multi-purpose forest management has both an economic function (wood production) and also provides a number of functions of benefit to the public – social, health and hygiene, ecological and water management.

The state of health of forests is endangered mainly by problems anchored in the past. This is especially true of the poor condition of forests in areas with high pollution levels, causing acidification of the soil. Forest soil is most frequently damaged by unsound technologies in felling tree stands, especially in bringing out and transporting timber. The species, age and stand structure of forests are also unfavourable as a result of former attempts to support the cultivation of fast-growing tree species, such as spruce, which has been the species most in demand for some time. The state of health of forests is also negatively affected by the large numbers of game, insects (e.g. spruce bud worms), pathogenic fungi (e.g. honey fungi – *Armillaria mellea*) and extreme climatic phenomena, usually followed by insect invasions.

Environmental measures in the area of agriculture and forest management:

- Create conditions for the development of multi-functional agriculture over the largest area possible, increase the non-productive function of the land, improve the potential for recreational use of the agricultural landscape (greater diversity of species of farm animals and agricultural crops, improved accessibility, care for properties), support for comprehensive land-use plans improving the ecological stability of the landscape.
- Promote environmentally sound farming methods (environmentally sound and integrated agriculture), in an attempt to increase the fraction of the area of the agricultural land fund on which environmentally sound agriculture is carried out to at least 6% by 2005 and at least 10% by 2010, especially in specially protected territories and protected areas of natural accumulation of water.
- Optimise the numbers of the individual kinds of properties in dependence on natural and habitat conditions.
- Specify certain properties suitable for implementation of restructuring of agriculture in connection with the new Conception of Agrarian Policy from the viewpoint of the need to protect and create the environment.
- Expand programs for properties endangered by water and wind erosion and for greater retention of water in the landscape in the interests of increasing the ecological stability of the landscape.
- Promote extensive and semi-intensive fish breeding.
- Promote limitation of the devastation of properties withdrawn from the agricultural land fund and, where possible, returning of the biological function of properties devastated by previous economic activities.



- Extend monitoring of pollution of the land and agricultural crops by specially hazardous substances – PCBs, dioxins, heavy metals, etc. in areas with potential risks (environmental burdens from the past, accidental pollution).
- Limit the use of hazardous pesticide and biocide preparations and replace them by less hazardous preparations.
- Prepare a program of agricultural use for properties that, for reasons of pollution, cannot be used for foodstuff or feedingstuff crops, or for pasturage, and support their decontamination and potential use for nonagricultural activities and cultivation of technical and energy plants.
- Resolve the issue of incorporation of areas on which fast-growing tree species and any other nontraditional perennial wood species are cultivated.
- Promote increased utilization of agricultural biomass as a renewable raw material and for energy purposes, without undesirable spreading of invasive plant species.
- Promote programs for technical and energy use of biodegradable wastes and other biodegradable substances.
- Reduce diffuse and point pollution of surface and ground waters, especially control of compliance with good agricultural practice in storage and application of agrochemicals and barnyard fertilisers.
- Promote the introduction of the best available techniques, environmental management systems, cleaner production and other environmentally sound procedures in the sector of agriculture and the food industry.
- Promote a continuous increase in the fraction of amelioration and compacting tree species in forest renewal and afforestation, limit damage to wetlands by tree harvesting and limit drying of these areas.
- Conserve wetlands in the agricultural landscape and in forest ecosystems.
- Conserve and utilise the forest genetic fund.
- Promote renewal of forest ecosystems in high-pollution areas.
- Promote the certification process in the framework of the PEFC system and the use of sound technologies in forest management.
- Promote maximum utilisation of wood mass, as a natural resource of processable material and energy material from a renewable natural source.
- Achieve and subsequently maintain balance between the state of the forest ecosystem and the number of game animals.

7. Protection and Use of Waters

Water is a natural resource and, as a component of the environment, constitutes an essential condition for life. The development of human society is closely connected with sources of water – favourably in their use and unfavourably in damage to the natural character of aquatic ecosystems and also deterioration of the quality and capacity of water sources through civilisation factors. Water sources have a unique position in the Czech Republic, as a negligible amount of water flows into the Czech Republic, while it flows out of the territory of CR rapidly because of the mountainous terrain. Consequently, renewable sources of stocks of water are almost exclusively dependent on atmospheric precipitation in the territory of CR. Water courses, fishponds, wetlands and spring areas constitute not only water supplies, but also vulnerable ecosystems. Water and the landscape are irreplaceable natural resources, which determine its variability, species diversity and ecological stability. In all its forms, water is simultaneously an important landscape and aesthetic element.

Water policy is based on the Water Framework Directive of the European Parliament and Council 2000/60/EC, of October 23, 2000, establishing a framework for the activities of the Community in the area of water policy. This document, amongst other things, sets forth the necessity of coordinating the efforts of the Member States to improve the protection of waters in terms of quantity and quality, to promote sustainable water use, to resolve transboundary problems, to protect aquatic ecosystems and terrestrial ecosystems and wetlands directly depending on them and to safeguard and develop the potential uses of Community waters.

Protection of the quantity of water consists in rational management of waters and in continual creation of conditions for increasing the accumulation ability of the landscape. These targets are achieved primarily through integrated protection of the amount and quality of surface and ground waters implemented in complete hydrological river basins and hydrogeological regions.

Protection of water quality is based on reducing entrance of pollutants from sources of pollution into waters and their environment and on protection of water sources through prevention. The quality of surface and ground waters is also affected by point pollution sources such as cities and municipalities, industrial plants and buildings of intensive agricultural production and extensive pollution sources, including especially pollution from farm management, atmospheric deposition and erosion runoff from the terrain. Point and diffuse sources cause pollution of surface waters by chemical substances, microbial pollution of water courses and eutrophication of surface waters in water reservoirs. Accidental pollution is one of the factors with a negative impact on the quality of surface and ground waters, where the most frequent group of pollutants consists in petroleum and chemical substances.

In 2002, good-quality drinking water was supplied to more than 89.8% of the population and 77.4% of the population was connected to sewer systems. Waste water treatment plants have not yet been constructed for all agglomerations over 2000 E.I. Provision has not yet been made for waste water treatment with removal of N_{tot} and P_{tot} for all agglomerations with more than 10 000 E.I. According to the conditions of the transition period, the requirements following from Council Directive 91/271/EEC must be met to 2010 (it is necessary to provide for

waste water treatment for agglomerations with over 10 000 equivalent inhabitants by 2006).

Extensive water pollution by agricultural activities is caused by excessive use of agrochemicals in the past. Government Regulation No. 103/2003 Coll., on stipulation of vulnerable areas and on the use and storage of fertilizers and barnyard fertilizers, alternation of crops and implementation of anti-erosion measures in these areas, should provide for a gradual improvement in the quality of surface and ground waters. Failure to follow good agricultural practice leads to the high erosion ability of run-off waters, accompanied by clogging of water courses and reservoirs by mud and detritus.

The territory of the Czech Republic underwent two catastrophic floods in a relatively short period of time, in July 1997 and August 2002. From a hydrological standpoint, these were exceptional floods. As a consequence of legislative and other instruments and initiatives, a number of diverse measures were proposed and adopted in the period following the floods in 1997, leading to a substantial improvement in the quality and scope of measures for protection against the detrimental effects of floods. However, periods with an excess of precipitation have been accompanied by periods of extreme dryness, e.g. in 1999 and 2003. It is also necessary to take this factor into account, although the instruments for alleviating droughts are more limited than those for protection against floods. Consequently, other measures are of interest, which could be effective both to prevent floods and to alleviate the consequences of droughts and which are concerned primarily with improving retention and increasing retardation of water in the landscape.

Environmental measures in water policy:

- Comply with the requirements of Council Directive 91/271/EEC concerning urban waste-water treatment by 2010.
- Ensure that 91% of the population is supplied with good-quality drinking water in 2010.
- Reduce extensive pollution of surface and ground waters and prevent and/or reduce the consequences of accidental pollution, as appropriate.
- Provide for preparation and adopting of the Plan for the main water basins of the Czech Republic and plans for eight river basin districts.
- Permanently monitor organic pollutants and toxic metals in surface and ground waters.
- Through prevention, increase protection against floods and alleviate the consequences of periods of drought through increasing the retention and retardation abilities of the landscape, retarding and balancing run-off of precipitation water, reducing the erosion effects of surface run-off and verifying the adequacy of existing water sources for overcoming periods of dryness.
- Continue to implement the program entitled Prevention of Floods, which includes renewal and construction of small water reservoirs, dry polders and dykes, preparation of studies of run-off conditions and delimiting of inundation areas for all important water courses and territories endangered by extreme floods.
- Promote dredging of fishponds.
- Promote the natural shapes of water courses (meanders).
- Promote measures against floods in the sewer systems of cities whose cadasters extend into the inundation areas of water courses.
- Introduce stricter conditions for permitting construction and activities in inundation areas in order to prevent unnecessary damage.
- In carrying out water works, consistently respect the interests of protection of nature and the landscape.
- Implement recovery measures in the landscape and along minor water courses, taking into account a comprehensive approach to the water regime in the landscape and various landscape features.
- Provide conditions for the life and reproduction of indigenous populations of fish and, as appropriate, employ other technical and biological measures to increase the occurrence of indigenous aquatic fauna and reduce the occurrence of nonindigenous species of fish.
- Carry out an implementation plan for Directive of the European Parliament and Council 2000/60/EC, of October 23, 2003, establishing a framework for Community activities in the area of water policy.

8. The Environment and Health

The mutual position of the two sectors and the character of their cooperation is somewhat different from conditions in other sectors, based on the fact that a healthy environment is one of the basic external conditions for protection of human health and for improving the quality of human life in general. This fact has resulted in the two sectors creating a joint conceptual document (the Action Plan of the Czech Republic for Health and the Environment, approved in Government Resolution No. 810 of December 9, 1998 – called the National Environmental Health Action Plan, NEHAP). The implementation of NEHAP is coordinated and evaluated by the Council for Health and the Environment, established in Government Resolution No. 296 of April 7, 1999 as an advisory body to the Government. The Long-term Program to Improve the State of Health of the Population – Health for Everyone in the 21st Century (“Health 21”), adopted by the Government of the Czech Republic in the Resolution No. 1046 of October 30, 2002, also lays down a number of targets requiring close cooperation between these two sectors.

Similar to the other chapters of the “sectorally oriented” part of the updated State Environmental Policy, the main goal here is to specify the most important areas of synergic action of the two sectors so that implementation of environmental policy contributes to reducing or even eliminating risks through which a polluted environment affects human health and, on the other hand, the activities of the health sector assist individuals to better understand, perceive and avoid these risks or reduce their effects.

The main target of cooperation between the two sectors aims at implementation of the Government Resolution for implementation of the conclusions of the Third Ministerial Conference on the Environment and Health (No. 706 of July 12, 2000), through which the Government of the Czech Republic “established protection of health and the environment as a priority of its policy”. Formulation of targets in the updated SEP is given at a more general, strategic level because a number of specific, very individual and quantified targets are already defined in the cited program documents (NEHAP, Health 21). The Council for Health and the Environment regularly monitors and evaluates fulfilling of these targets. The introduced institutional and procedural mechanism of cooperation enables cooperation both at the level of strategic management and in work on current individual tasks.

Environmental measures in the area of health and the environment:

The most important tasks in the area of cooperation between the sectors of the environment and health include:

- continuous active participation in the work of the Council for Health and the Environment as the body coordinating mutual inter-sectoral cooperation;
- continued implementation of the NEHAP through cooperation of these sectors, particularly in the following areas: policy of protection of health and the environment; identification and evaluation of dangerous environmental factors related to the health issues; monitoring of the state of environment and its developments; development of instruments – information, awareness-raising, educational, economic, voluntary – promoting environmental friendly use of natural resources and continued reduction of the human health risks posed by the pollution of the environment; improvement of the system of management of chemicals and chemical substances; continued capacity building in accidents prevention and preparedness, further enhancing of the quality of emergency planning and crisis management; coordinated international cooperation;
- cooperation in updating NEHAP, to take place in 2004/2005 and to take into account:
 - the conclusions of the Fourth Ministerial Conference on Health and the Environment (Budapest, June 23 – 25, 2004, i.e. the Budapest Conference);
 - tasks specified by the European Strategy for the Environment and Health and the appropriate Action Plan (prepared by the European Communities as a contribution of the European Union for the Budapest Conference – see the document COM(2003)338 Final of June 11, 2003);
 - the relevant conclusions of important internationally adopted documents (the UN Millennium Declaration of 2000) and conferences (the World Summit on Sustainable Development – the Implementation Plan of 2002; the 5th Ministerial Conference “Environment for Europe”, called the Kyiv Conference – Ministerial Declaration of 2003, etc.).

The highest attention will be focused on environmental protection and prevention of children’s diseases and injuries, on development of indicators to monitoring the linkages between the state of the environment and the state of health, and on further development and performance of the System of monitoring the environmental impact on the health of the population.

- continued implementation of the Long-term Program to Improve the State of Health of the Population – Health for Everyone in the 21st Century (as regards the environmental sector, specific attention should be aimed at the implementation of tasks in the following areas: monitoring of environmental pollution which causes a risk to human health, including formulation of measures for reduction of health risks from the polluted environment; provide support for education and public awareness to promote a sound approach to the environment and transition to sustainable patterns of consumption and production, also contributing to creation of a healthier environment; systematic and long-termed promotion of integration of environmental and health aspects into the activities of the other sectors, especially energy production, industry, transport and agriculture).

Special attention will be paid to:

- implementation of international legally binding instruments in the area of the environment and health that have been al-

ready ratified by the Czech Republic (i.e. the Protocol on Water and Health to the UN-ECE Convention on Protection and Use of Transboundary Water Courses and International Lakes);

- preparation of the ratification and implementation of the international legally binding instrument in the area of health and the environment, signed in 2003 at the Kyiv Conference (i.e. the Protocol on Strategic Environmental Assessment to the UN-ECE Convention on Environmental Impact Assessment in a Transboundary Context); in this connection, consistently enforce the implementation of the process of assessing of the impact of conceptions and strategies on the environment and health of the population in other sectors (i.e., SEA);
- intensive coordination of preparation and implementation of program documents in both sectors (i.e. especially SEP and NEHAP);
- intensive cooperation in preparation of generally binding legal regulations in areas related to protection of the environment and protection of health (with emphasis on regulations related to the aspects of noise, authorisation of persons for assessment of the effect of the environment on the health of the population, and the role of both the environmental protection and public health administration bodies in the implementation of Act No. 76/2002 Coll., on integrated pollution prevention and control, on the integrated pollution register and amending some laws – called the Act on Integrated Prevention, the IPPC Act);
- mutual operative use of information obtained in the competence of the Ministry of Health or Ministry of the Environment in establishing targets and strategies of environmental or health policies (especially in evaluation of the effect of living conditions on the health of the population; in determining, evaluating and managing health risks posed by environmental pollution – including chemical substances, or genetically modified organisms; in monitoring the state of health of the population in relation to the environment; in establishing related obligations in protection of public health);
- enhancing cooperation and coordination to promote the preparation and implementation of local plans and programs to improve the environment and the health of the population (Local Agendas 21, Healthy Cities, etc.);
- enhancing cooperation and coordination in developing and implementing of awareness-raising campaigns and projects, educational and training programs promoting environmental friendly behaviour (including a transition towards patterns of consumption and production that are in accordance with the principles of sustainable development), with a healthy life style and with preventative protection of the health of the population;
- consistent cooperation in improving the quality and effectiveness of early warning systems alerting the population to potential danger and providing comprehensive and readable instructions for the behaviour of the population in emergencies (industrial accidents, natural catastrophes, and also smog situations, episodes of extreme meteorological conditions, etc.).

9. Regional Development, Renewal of Rural Areas and Tourism

Regional development is based on the National Developmental Plan and on the Strategy of Regional Development of the Czech Republic. It is intended to contribute

to achievement of sustainable development and life quality improvement for the local inhabitants based, amongst other things, on the environment protection and improvement. This is a purposeful activity of the state, which attempts to ensure that all the regions have the same chance for further economic, social, environmental and equal rights in coexistence in the framework of a common state unit and in the framework of EU. The main target of the National Developmental Plan can be defined as “Sustainable development based on competitiveness of the economy”. One of the specific targets also consists in approximation to the EU standards in the area of the environment. Regional development should be able to deal with various degrees of environmental old damage, which frequently depended on material- and energy-intense economic activities, on unsustainable extraction of materials, on high traffic levels, on the former presence of units of the Soviet army and on the impact of transboundary emissions.

The concept of rural areas refers to all areas outside of cities. The strategic concept of development of rural areas is based on the fact that the key to favourable development of society lies in the abilities and creative activities of individual human beings. Although the Program for Renewal of Rural Areas lies within the competence of the Ministry for Regional Development, a number of other Ministries are responsible for some of the impartial programs, especially the Ministry of Agriculture and the Ministry of the Environment. Nongovernmental environmental organisations, regional assistance programs and the smallest municipalities are also participating in programs for renewal of rural areas.

As an economic activity, tourism has a long-term and complex impact on the natural and human environment. Consequently, management of the territorial development of tourism requires an intersectoral approach, which should include not only the economic acceptability of tourism projects, but should also take into account the environmental impacts of tourism (its ecological, social, cultural, technical, political and other aspects). Current tourism trends involve consideration of environmental aspects in the planning and decision-making process. The framework environmental targets in the area of tourism impacts must be further refined in the sense of the decision of the 7th meeting of the UN General Assembly and the UN Commission for Sustainable Development, which recommends that the Governments of UN member countries prepare conceptions, strategies and plans for sustainable tourism development.

Environmental measures in the area of regional development, renewal of rural areas and tourism:

- Establish Regional Councils for sustainable development in the individual higher territorial self-governing units.
- Support cities and municipalities in implementing their plans in the area of the environment, especially where these plans or the intended consequences exceed the boundaries of a single municipality or if they are beyond the financial capabilities of the municipality.
- Support and protect the landscape character of the territory and its features, such as isolated trees, green strips along highways and roads, sources of drinking water, wetlands and minor water reservoirs and water courses, monitoring the occurrence of specially protected species of fauna and flora.
- Promote programs connected with care for nature and the landscape, not only those oriented towards agricultural land.
- Support local authorities and NGO's in implementing the Program for Renewal of Rural Areas.
- Relate programs for renewal of rural areas to implementation of Local Agendas 21.
- In Programs for renewal of rural areas, promote local protection of nature and the landscape and relate this to environmental education and public awareness.
- Provide for the creation and promote the usage of the carrying capacity methodology in territorial development of tourism (employ the concept of the carrying capacity and the LAC model).
- Monitor tourism development effects using indicators of its impacts on the environment and local development – prepare a proposal and ensure systematic territorial, temporal and thematic monitoring of tourism impacts.
- Promote the development of sound, environmentally acceptable forms of tourism and/or attempt to increase the share of this type of tourism in the total volume of tourism.
- Create a network of regional centres of environmentally sound tourism coordinated by a national centre for the purpose of greening regional tourism, methodical and practical support.
- Promote the creation of a National System of Certification of Environmentally Sound Tourism Services (accommodation and catering services, tour operators and entire destinations); promote the introduction of environmental management systems in tourism sector and achievement of the label as criteria for possible subsidy titles.
- In specially protected areas, provide for implementation of the principles of the “European Charter for Sustainable Tourism in Protected Areas” and take into consideration the introduction of the NATURA 2000 system.
- Extend tourism and hiking to include less attractive areas using European structural funds.
- Introduce environmental certification and promotion of tourist destinations that respect the principles of protection of the living environment.
- Care for the landscape through the development of rural tourism, eco-tourism and eco-agro-tourism; utilise this tourism form for education of visitors and, indirectly, also the local population to build a relationship and thus also a responsible approach to the creation, evaluation and protection of the environment.
- Promote the development of environmentally sound transport systems in all tourism areas ; support public mass transport, especially in Protected Landscape Areas, National Parks and historical cities, and thus reduce the individual automobile transport in these areas.
- Provide conditions for pedestrian or cyclist accessibility of the landscape through reconstruction and establishing of field and forest roads in connection with carrying out land-use planning, as an instrument of implementation of the landscape care.
- Promote the creation of pedestrian zones in the centres of cities or their historically valuable parts and facilitate access for cyclists.
- Renew railway lines and railway stations as potential centres for services for environmentally sound hiking and cyclo-tourism.
- Adapt existing unused non-residential buildings for accommodation, catering and information services.

V. Instruments of Implementation of SEP

1. Increasing of Public Awareness of Environmental Issues, Environmental Education and Public Awareness

High public consciousness in the area of the environment is a basic precondition and a priority for successful implementation of the State Environmental Policy, and also of the National Strategy for Sustainable Development, which is currently being prepared. An increase in public consciousness of environmental matters leads the public, not only to greater understanding of the environmental connections of the economic and social life of society, but also to an increase in the quality of consumer decision-making, to an increase in the legal awareness of citizens and, as a consequence, also to improved quality of life. In the framework of the concept of sustainable development, major groups of citizens were identified that are primarily affected by the issue of sustainable development, i.e. also by its environmental pillars. These groups are: NGOs, women, children and youth, minorities, local and regional governments, employees and their organisations, entrepreneurs, trade and industry, the academic community and farmers. These defined major groups must also be taken into account in improving the environmental awareness of the public. Environmental education and public awareness (EEPA) constitute a basic instrument for increasing public awareness of environmental issues. For the other instruments, see the chapters on Information Instruments, National Strategic Planning and Instruments of Public Participation.

The inadequate education of the population in environmental protection has led to a low level of environmental awareness, which has been gradually reflected over several generations in the form of lack of knowledge, apathy, and inadequate environmental education of children and other key groups in protection of nature, in protection of health and in sustainable development.

In 2000, the State Program of Environmental Education and Public Awareness in CR (SP EEPA CR) and the Action Plan for SP EEPA CR for 2001 – 2003 were prepared and approved by the Government. The Action Plan is updated every three years; at the present time, a new Action Plan for 2004 – 2006 is being approved. It also includes a system of environmental education and public awareness for officials of administrative authorities and employees of the public administration.

It can be stated that the level of environmental education and public awareness in the existing system in the framework of the State Program of EEPA in CR is favourably affected by the ability to accept, process and utilize the amount of information offered and the willingness to utilize this in the best manner in practice, but is permanently limited by a substantial lack of finances from the state budget, especially in the sectors of the environment and education, youth and sports. It can be stated that implementation of the State Program of Environmental Education and Public Awareness in CR is successful in all areas that have not required excessive financial expenditures. In the coming years, the level of EEPA will be unfavourably affected by the decrease in the number of donors, especially foreign foundations, which financed NGOs and their activities, as they move to other areas that are in greater need. Thus, it is necessary to use the available resources as effectively as possible, e.g. the



“Operational Program for Development of Human Resources” for environmental education and public awareness.

Environmental education, environmental studies and protection of the environment are being increasingly included in the teaching programs of universities, secondary schools and elementary schools and preschool training. Nonetheless, it is necessary to increase the role of EEPA in the framework of education at all levels, including promotion of extracurricular activities concerned with a positive approach to nature and the environment. Greater emphasis should be placed on promotion of direct contact of children and youth with nature, either through field excursions and outings or through field and gardening work, etc. It is also necessary to provide for environmental education of pedagogical workers, i.e. especially teachers of all subjects and all educational workers.

There has been a decrease in public interest in environmental protection since the beginning of the nineties, but this is frequently limited to affairs that are of interest to the media or issues in the immediate vicinity of the place of residence or employment. In this connection, there has been a substantial manifestation of the absence of regular educational programs on the radio and public television concerned with the environment and environmental issues and protection of the environment.

Measures:

- Implement the State Program of Environmental Education and Public Awareness in CR and provide for its interconnection with other programs.
- Take into account the targets of the State Program of Environmental Education and Public Awareness in CR in the related legislation – amendment of Act No. 123/1998 Coll., on free access to information on the environment.
- Ratify the Aarhus Convention, enforce its implementation in practice and extension of its scope to include GMOs.
- Introduce obligatory environmental education at elementary schools.
- Promote environmental education and public awareness at all school levels, including further education of pedagogical workers, and in the mass media.
- Promote environmental education and public awareness for employees of the public administration, elected representatives, members of the Chamber of Deputies and senators on the basis of differentiated educational programs.
- Through development of environmental education and public awareness, including consulting, increase interest and promote participation of individuals in the decision-making processes in dealing with environmental issues.
- Promote environmental education and public awareness in the business sphere, amongst farmers and amongst employees in services.

- Promote environmental education and public awareness of nongovernmental organisations.
- Promote the activities of nongovernmental organisations providing for environmental education and public awareness, including consulting, and evaluate and utilise their abilities and activities as important publicly beneficial work.
- Include study of environmentally oriented acoustics in the teaching program of selected universities.
- Include the procedures and methods of evaluation of safety and risks from hazardous substances in teaching programs at selected universities.
- Promote dissemination of information on:
 - environmental education and public awareness, consulting and management of information
 - the assumptions and principles of sustainable development
 - the right to information on the environment
 - sound behaviour towards nature and natural resources in all its favourable and unfavourable aspects
 - environmentally sound agriculture and connections in relation to health and care for the environment
 - a healthy life style
 - the potential for environmentally sound tourism
 - hazardous substances
 - sources of pollution by hazardous substances
 - GMOs and hazardous substances
 - the contents of hazardous substances in consumer products, in food products
 - renewable energy sources and energy savings.
- Train the public in precaution in relation to chemical substances and GMOs.
- Increase the legal awareness of the public in relation to the environment, including reasons, causes, consequences and other relationships.

2. Legal Instruments

Law is one of the most important instruments of environmental policy. Its importance for creation of the conditions of sustainability follows from the nature of law as a set of rules of behaviour, rules governing the relationship between individual entities in society. In general, law is, to a considerable degree, a reactive instrument, dealing with issues that have already arisen. In particular, law was so conceived in the Czech Republic at the beginning of the 90's. However, law can act "in advance", can be proactive, i.e. can predict future developments and create the necessary institutions. This role of law becomes increasingly important in relation to protection of the environment and meeting the requirements of sustainable development in general.

Environmental law is a relatively young branch of law. In the Czech Republic, the legal regulations promulgated up to 1989 (e.g. the Act on Waters, Act on Forests, Act on State Nature Protection) for protection of the environment constituted, on the whole, only a very small contribution towards the relevant issue. The actual beginnings of legislation concerned with protection of the environment in this country were established after 1989. During a relatively short period of time, not only were laws issued in areas that were formerly not regulated (e.g. Act on Protection of Air, Act on Waste, Act on Environmental Impact Assessment), but most of the former, obsolete regulations were replaced (Act on Forests, Act on Protection of the Agricultural Land Fund, Act on Protection of Nature and Landscape). The first few years after 1989 were al-

so substantially affected by the gradual accession of CSFR and later CR to international conventions in the field of protection of the environment and transposition of the requirements following from these documents into the Czech legislation. In recent years, legislation in the area of protection of the environment was also significantly affected by the process of harmonisation of Czech law with the legislation of the European Communities. Numerous and frequently also significant legislative changes were made, and these were reflected in the issuing of some regulations (the new Act on Protection of Air, new Act on Waters, new Act on Waste, Act on Packaging, etc.).

In addition to the positive effects, these rather rapid developments also had one negative consequence – lack of interconnection between the legislation in the individual areas of environmental protection. The legislation does not take sufficient account of the interconnections between materially related components of the environment, the legislation frequently overlaps or there are unjustified differences or gaps in it. The principles of environmental protection, the institutions of the legislation, procedures, etc. are not dealt with in a uniform manner. Examples can be found in various kinds of consents, viewpoints, standpoints, etc., which have various nature in the legislation dealing with the individual components of environmental protection.

The first, but not very successful attempt at more comprehensive, but only framework legislation on the environment as a whole was made in issuing (Federal) Act No. 17/1992 Coll., on the environment.

The recent Act on Integrated Pollution (No. 76/2002 Coll.) was an important step towards more uniform environmental legislation; this Act lays down a single, integrated procedure for a specified group of installations, leading to the issuing of a single integrated permit instead of a number of standpoints and other individual administrative actions.

The on-going preparation of a new regulation of administrative punishment is another important step; under the auspices of the Ministry of the Interior, this will establish uniform principles for imposing sanctions, which has been divided into two institutes to date – a misdemeanour for natural persons and a different administrative tort for legal persons and natural persons operating a business, where the legal regulation of the other administrative torts differs in individual instruments because of the lack of a regulation parallel to the Act on Misdemeanours (200/1990 Coll.).

The Act on the Environment, which will replace Act No. 17/1992 Coll., will have a fundamental effect in unifying environmental law; according to the plan, its preliminary draft will be submitted to the Government of the Czech Republic in September 2004. This project has high aspirations, in particular to unify the general part of environmental law, i.e. to establish all institutions jointly for all or at least some sections of environmental protection at the same level and to give them a common form.

In addition to these favourable developments in environmental law, negative tendencies can also be recorded, caused, amongst other things, by the fact that, from the point of view of society as a whole, protection of the environment competes directly with other public interests (transport infrastructure, energy production, etc.) and, unfortunately, is often in an inferior position. In this connection, the tendency to weaken and destroy advanced democratic attributes achieved in recent years is especially apparent. Simultaneously, the constitutional order is sufficiently comprehensible in this respect, as it states that "everyone has the right to a favourable environment" and

“everyone has the right to timely and complete information on the state of the environment and natural resources” (Article 35 of the Declaration of Basic Rights and Freedoms).

The accession of the Czech Republic to the European Union is also a fundamental moment for further developments in environmental law. It is apparent from recent developments in Community law in the area of environmental protection that this is a very dynamic area that is gradually affecting all the areas of environmental protection. In fact, this entails a shift in powers of creation of regulations from the national level to the Pan-European level. This is undoubtedly true for acts of Community law that have the form of Regulations, because these will be directly applicable and immediately effective in the territory of the Czech Republic. This is also true to a substantial degree of acts of Community law that have the form of Directives, although it holds in general that Directives bind the Member States only in their targets and the means are elective. As the texts of Directives are becoming increasingly detailed as time passes, the scope for variation amongst the Member States is becoming ever more restricted. Consequently, great emphasis must be placed on participation of representatives of the Czech Republic in preparation of legal regulations by the institutions of the European Union (Commission, Council, European Parliament), including participation by the general public. In accordance with the principle of sustainable development, it is also necessary in transposition of the EC legislation to consider provision for competitiveness of the economy of the Czech Republic.

Measures:

- Transpose EU Directives or adapt the legislation to EC regulations as required of the Member States of the European Union.
- Participate actively in the creation of EC legislation and, in this participation, consistently introduce the standpoint of protection of the environment in the Czech Republic.
- In cooperation with MoRD, MoE and MoI, complete the preparation of the new Construction Code, with greater emphasis on sustainability of development of the territory.
- On the basis of analysis of mining law and the related legislation in the individual EU countries, propose changes in legal regulations in an attempt to achieve the level of legislation and administrative procedures employed in the EU countries and strengthen the inclusion of environmental inspection of mining and participation of municipalities and the general public in the legislation of this country.
- Prepare the preliminary draft of the new Act on the Environment, which will integrate common features and institutes of the component regulations and unify the basic concepts, economic instruments and sanctions in accordance with environmental protection requirements.
- Prepare the final draft of the new Act on the Environment.
- Consider the usefulness and potential for further codification of environmental law, in addition to the new Act on the Environment, which should contain its general part.
- Protect the hard-won democratic elements of environmental law (the right to information, public participation and access to justice) and attempt to strengthen them further.

Annex 1: Current state of the Czech legislation

3. Economic Instruments

Economic instruments are amongst the most effective instruments in achieving the targets of SEP. It is necessary to gradually create suitable conditions for broader use of these instruments, especially on the basis of the new conception of economic instruments prepared as elaboration of SEP. This will be based on environmental tax reform (ETR), whose chief idea is transfer of the tax burden from taxation of work to taxation of forms of energy that are detrimental to the environment, while respecting the principle of tax neutrality.

In addition to instruments of negative stimulation (taxes, fees, etc.), a significant component of economic instruments consists in provision of assistance to areas of the environment both from domestic sources (SEP, sectoral programs) and from foreign sources, including the funds of the European Union (i.e. the Cohesion Fund, Structural Funds, the LIFE Program, INTERREG). It is important that expenditures from public budgets be expended for priority areas while retaining economic effectiveness. It is necessary to ensure that all assistance from public sources be expended for measures with a favourable or at least zero impact on the environment.

In connection with accession of CR to EU, it is necessary to ensure that the provided assistance is in accordance with the EU rules for protection of economic competition. Economic instruments will also be employed, e.g. in the area of protection of the climate in connection with Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community.

On-going problems in nature protection are encountered in connection with unclarified ownership relations to properties, especially old environmental burdens and the inability to date to effectively evaluate (express the value) of the natural environment for economic comparison of losses from any use of land with the benefits to be gained from the planned new use.

Measures:

- Prepare a conception of economic instruments as a strategic document, to form the starting point for new procedures for application on economic instruments following accession of the Czech Republic to the European Union.
- Prepare implementation of environmental tax reform.
- Prepare a draft summary financial policy for the area of the environment, part of which will also consist in the conception and policy of SEP CR and a conception for utilisation of foreign financial sources.
- Increase expenditures from the state budget into the environment.
- In the area of the environment, direct the subsidy policy from the state budget and SEP primarily towards compliance with obligations following from the negotiations with EU and priority targets of SEP.
- Ensure effective utilisation of foreign financial resources, especially EU funds.
- Promote direct and indirect means of utilising renewable energy sources and effective utilisation of energy and energy savings.
- Complete preparation of a system of economic instruments for the area of management of wastes and packaging.
- Propose economic instruments that can be used for the area of protection of nature and the landscape.

- Prepare proposals for introduction of new general taxes and other instruments at a local or regional level that, amongst other things, will also support environmental protection and implementation of the targets of SEP CR;
- Prepare proposals for potential utilisation of other (untraditional) economic instruments and financial resources for protection of the environment.
- Utilise the partnership of the public and private sectors (public-private partnership).
- Gradually develop a methodology for assessment (evaluation) of the impacts of legislative and economic measures and regularly carry out quantification of total costs necessary for providing for the targets and measures of SEP and analysis of their economic and environmental effectiveness.
- Review and comprehensively modify the overall structure of the existing system of payments for pollution and utilisation of the environment; in this, emphasise unification of the entire system and simplification of administrative procedures connected with imposing, collecting and exacting fees.
- In connection with fees for air pollution, prepare proposals for a procedure for transition from payment of fees for discharging pollutants into the air to fees for consumption of fuels (this transition must be coordinated with preparation of environmental tax reform).
- Prepare proposals for the environmental component of fees for use of surface waters.
- Introduce tax relief or other economic instruments to provide an advantage to enterprises that allocate part of the created financial resources for environmental protection, recycling or recovery of wastes as secondary raw materials.
- Up-date the existing system of economic instruments in the area of extraction of raw materials (e.g. the amount of fees for areas taken over for mining should be connected with compensation for environmental damage for interventions into nature).
- Review the institute of fines for violating laws in the area of the environment.
- Implement and up-date the system of evaluation of the environment and the environmental (nonproductive) function of its components.
- Introduce a system of trading in greenhouse gas emissions in connection with EU policy (Directive 2003/87/EC on trading in greenhouse gas emissions).
- Employ economic instruments to preferentially support preventative measures in protection of the environment.
- Introduce the use of economic instruments for assessment (evaluation) of selected parts of nature in the sense of the results of project VaV/610/5/01, prepared by the Czech Environmental Institute in 12/2003, for determining environmentally damage caused by use of the natural environment.

4. Voluntary Instruments

It is obvious that legislation in the area of the environment is one of the strategic priorities for the next decade. However, at the present time, care for the quality of the environment also encompasses support for market developments oriented towards the environment, which includes both technical innovations and new systems of management and other new approaches, termed voluntary instruments, promoting economic growth of society, competitiveness, profitability and the creation of new jobs and, of course, taking into account environmental impacts. This means that, in addition to utilisation of strict legislative proce-

dures, it is necessary to employ a further spectrum of instruments and measures to bring about the necessary changes in the behaviour of producers and consumers – in our patterns of production and consumption – to affect decision-making in the economic sphere, by consumers, individual citizens and the creators of conceptions and policies in other areas, which will also favourably affect the quality of the environment.

A number of business organisations and companies are already integrating voluntary instruments into their basic business strategy. This group of instruments includes favourably developing voluntary instruments currently being employed in CR – labelling of environmentally friendly products – ecolabelling, including promotion of green procurement, introduction of environmental management systems according to EMAS or ISO 14001, implementation of the principles of cleaner production, concluding voluntary agreements between the state administration and various production associations, leading to pledges of organisations to employ more friendly technology and procedures in relation to their environmental impact.

A fundamental aspect of environmental protection, requiring a decrease in the use of natural resources and reduction of the negative environmental impacts is closely connected with the development of further voluntary instruments, supporting a change in patterns of consumption and production, such as LCA (life-cycle assessment for products), ecodesign, reporting, green purchasing, and the related creation of a retail network offering environmentally friendly products and services, introduction of environmental aspects into the basic criteria for greening public procurement (green procurement), and a number of others.

It is obvious that all products and services have an impact on the environment, either in their production, in their use or in their disposal. Simultaneously, it is apparent that the production and use of products simultaneously significantly affects the continuation of economic growth and prosperity. Consequently, in accordance with EU procedures, CR is proceeding towards the creation of an Integrated Production Policy (IPP), which is intended to create conditions for production and consumption where an improvement in relation to the environment is directly connected with an improvement in the output of products and services (win-win strategy) and where an improvement in relation to the environment supports the long-term competitiveness of industry, agriculture, services and other branches.

Basic approaches and principles must be employed in preparing IPP:

- Life-cycle thinking – taking into consideration the life cycle of the product, concentrate on reducing its accumulative impact on the environment “from the cradle to the grave” in an attempt to achieve a constant improvement and to reduce the negative environmental impact of production and products throughout their life cycles – in design, production, use or disposal.
- Partner cooperation with the market – creating incentives through promoting supply and demand for greener products and services so that the market moves in a sustainable direction, with special emphasis on small and medium-sized companies.
- Integration of new instruments into the policies of various branches, including participation of stakeholders in an attempt to introduce new approaches into their everyday work (industry, agriculture, services, other branches, consumers, the government).

- Diversity of policy instruments – in the framework of IPP a clear tendency to employ voluntary instruments beyond the framework of legal obligations.

Measures:

- Continue to support the development and implementation of the existing voluntary instruments in practice in CR (ecolabelling, introduction of EMAS and ISO 14000, the principles of cleaner production, voluntary agreements, green procurement).
- Continuously elaborate new approaches and instruments to reduce negative environmental impacts and increase the competitiveness of Czech products and services on the domestic and international markets (LCA, ecodesign, retail, etc.).
- Elaborate and prepare IPP in accordance with the EU procedures, with emphasis on preparation and extension of further voluntary instruments to increase competitiveness and the quality of the environment for all branches of the economy.
- Promote greater provision of information to the business and consumer spheres on new approaches and, in this way, create conditions for better implementation in practice.
- Engage producers and consumers to a greater degree in introduction of new voluntary instruments.
- Search for and implement supportive instruments for gradual greening of the market.
- Promote “greening of the state administration”.

5. Informative Instruments

From a technical and organisational standpoint, the information systems of the sector of MoE are being prepared as a component of the Integrated Environmental Information covering public librarian and information services as well. EU accession triggers an increased need for guaranteed information both EU and CR, e.g. for evaluating and implementing requests for subsidies from structural funds or as a basis for preparing spatial planning documents, spatial planning information and various sectoral conceptions. Information and data sources will be bound by the obligation to guarantee the content and quality of information. The main umbrella publication instruments include the MoE web site, the portal for access to environmental information, the map server, the indicator server and the meta-information system. There is an increasing need for an intersectoral approach to issues (e.g. integrated reporting), timeliness and availability of information (crisis management) or the quality and quality of information (structural funds). Implementation of the Aarhus Convention will lead to increased public demand for the quality and accessibility of environmental information.

As a consequence of progress of legislative changes, the importance of a central reporting station, which should gradually unify the reporting processes according to the individual component laws, increase. The conception of the registration office was prepared by MoE in 2003. MoE The central registration office is intended for use by the integrated pollution register being operated in cooperation with the Integrated Prevention Agency. Simultaneously, it will be suitable to promote the information systems of other subjects in dissemination of the necessary environmental information, such as an Exchange Information System on Best Available Techniques for which MIT is responsible.

Because of the professional complexity of dealing with environmental issues, it is necessary to further develop public librarian and information services (Czech and foreign periodicals, special-purpose monographs and special information sources in the area of the environment, librarian, bibliographical, reference, fulltext and specialised databases concerning the environment, administration of the Information System for Approximation of Law (transferring appropriate information to the system), coordination and revision of translations of technical and legal EC regulations and acquisition of translations of Czech regulations within the competence of MoE, which are the subject of approximation with EC regulations).

It is necessary to promote consistent dissemination of information on the environment and its protection and to affect the environmental awareness of the public through the media with national, regional and local competence, municipal information centres and enlightenment and special-purpose facilities and the facilities of NGOs.



Ministry of the Environment will introduce an intermediate link between the customer and the creator of information, which would ensure the formal correctness and correlation of information acquisition. Because of the constant increase in requirements for the creation of new databases and stagnation of financing of their creation, it will be necessary to evaluate priorities in data creation, to review requirements for methodology and increase emphasis on creating uniform requirements for acquisition. Analysis of the processes connected with acquisition of data and their optimisation in accordance with the recommendations of EEA and Directorate General of State Services will be an essential part of this process.

This intermediate link will be created by transformation of the Czech Environmental Institute and will function as a management and expert intermediate link between requirements for creation of environmental information and data and their creation by the subsidiary organisations. Simultaneously, it will act as an environmental clearinghouse, participate in the disaster information network, integrate development risk information and information on integrated prevention and will provide knowledge and technology transfer. This institution will also play an important role in preparation and modelling of future strategies, monitoring the State Environmental Policy instruments and effectiveness of the, evaluation of the impacts of legal obligations and reporting.

Measures:

- Provide information support of MoE in implementation of Act No. 123/1998 Coll., on free access to information on the environment and Act No. 106/1999 Coll., on free access to

- information, in the area of information published by MoE and implementation of the Aarhus Convention.
- Increase interdisciplinary linkages, technical interoperability and comprehensive methodical management of environmental data creation and provision between various areas.
 - Identify continuously top-priority data and information in the sector for meeting legal obligations, strategic planning, reporting and informing the public.
 - Introduce mechanisms for electronisation of execution of the state administration (eGovernment).
 - Provide meeting legal information obligations of the bodies in the sector of MoE.
 - Promote cooperation in disseminating environmental information with the national, regional and local media, with municipal information centres and with enlightenment and special-purpose facilities and the facilities of NGOs.
 - Develop the publication process in public librarian and information services on the MoE web site or environmental portal, in an attempt to ensure integrated access to MoE information sources and services and organisation of the sector in the area of public library and information services.
 - Develop a system of public librarian and information services of the sector in connection with reorganisation of the public administration.
 - Increase the effectiveness of the processes connected with acquisition of data and their optimisation in accordance with the recommendations of EEA and Directorate General of State Services.
 - Strengthen the mechanism of feedback between the user of the information and the creator thereof and require information guarantees, incl. sanctions for errors and compensation for damage incurred through incorrect, untimely or undisclosed information.
 - Promote the creation of a managerial information system enabling monitoring in real time of necessary environmental information for decision-making – information on pollution and polluters, causes, subsidies, fines, etc.
 - Gradually extend the Integrated Pollution Register and convert it to the form of PRTR.
 - Improve the system of waste statistics and records.
 - Promote cooperation in exchange of information on BAT on the basis of BREF between the EU, the sectors of MoE, MoIT, MoA, enterprises and professional federations.
 - Improve the quality of collected data on production and deposition of hazardous waste in IPR (introduce and optimise reporting thresholds, e.g. for heavy metals).
 - Provide data and information collection system in the area of protection against noise.
 - Create connections with the EU information institutions (e.g. EEA) and bring data into concordance.
 - Develop a system of public library and information services in the sector in connection with EU membership, using classical library and information services, electronic services and the publication process on the Internet.
 - Create an integrated information system between MoE, MoA, MoH and MoIT in relation to GMOs.
 - Improve inventories of greenhouse gas emissions, prepare a register of transfer of units of greenhouse gas emissions according to the requirements of the European scheme for trading in emissions and according to the requirements of the Convention.
 - Interconnect the national and sectoral information systems of crisis management to form a uniform information system.
 - Promote NGOs in the area of dissemination of information on the environment.
 - Prepare and introduce an information system for the Natura 2000 network.
 - Employ scientific institutions in preparing and introducing the information system.
 - Develop an information system for the public water administration in cooperation with MoA and the Regional Authorities.
 - Provide for an inventory of substances and installations damaging the ozone layer.
 - Analyse the creation of an Information Agency, which will function as an intermediate link between requirements on creation of information and data on the environment and their creation by sectoral organisations and which will simultaneously act as a clearing centre for information on the environment, participate in the information network for emergency management, integrate development risk information and provide knowledge and technology transfer.
 - In the framework of improving the system of statistics in the area of the environment, maintain statistics of expenditures for protection of the environment and monitor any shift in international requirements for methodology.
 - In the area of environmental accounting at a macro-economic level, prepare a “National Accounting Matrix including Environmental Accounts” (NAMEA) and an “Environmental Protection Expenditure Account” (EPEA).

6. Instruments of Strategic Planning

Strategic and action plans are comprehensive programming documents of municipalities, cities, microregions, regions and the state. They formulate the strategy for the development of an entire community, all the spheres of its functioning and an entire territory, with emphasis on the interconnections and mutual support of the proposed targets. Because of the role that strategic planning plays in the development of the community, it is necessary to ensure that it takes into account the principles of sustainable development and attempts to interconnect economic and social aspects with the area of the environment. The process of strategic planning must simultaneously be completely open and transparent.

Local Agenda 21 is an instrument for implementing the principles of sustainable development at a local and regional level. This is a process that improves the quality of life in all its aspects, through improvement of administration of public matters, strategic planning (management), public participation and use of all the obtained knowledge on sustainable development in the individual areas. It is directed towards responsibility of citizens for their lives and for the lives of other creatures in space and time.

Territorial land-use planning is a very effective instrument in implementing the targets of sustainable development; it has a long tradition and a stabilised legislation and organisational, technical and professional base. The preparation of territorial land-use plans for long periods of time establishes the degree and seriousness of factors affecting the environment, whether this is the re-allocation and use of areas, fragmentation of the landscape by transport structures or generation of demands on transport. Cooperation is required between MoE and the bodies responsible for preparation of land-use plans already in the phase of accumulation of basic documents and formulation of the terms of reference and conceptions of land-use planning documents, in order to incorporate requirements in the

area of land-use plans into the environment. Thus, land-use plans enable effective protection of nature, the construction of territorial systems of ecological stability and protection of the recreational base of urban residential areas and industrial agglomerations. As land-use plans have the greatest details and predictive ability in connection with the functional use of the territory at the level of the individual municipalities, it is necessary to prepare a chapter on the environmental impacts of measures for the land-use plans of municipalities.

The prepared amendment to Act No. 100/2001 Coll., on environmental impact assessment, which also encompasses assessment of the environmental impact of conceptions, plans and programs, includes a procedure for assessment of any transboundary impacts. CR has already elaborated various specific provisions on transboundary environmental impact assessment in bilateral agreements on cooperation in protection of the environment with Germany, Slovakia and Poland. However, at the present time, new bilateral agreements are being prepared with all the neighbouring countries to deal with the operative procedure in transboundary assessment, as required by Article 8 of the UN ECE Convention on Environmental Impact Assessment in a Transboundary Context.

The new Construction Code under preparation, which should replace Act No. 50/1976 Coll., on land-use planning and the code of construction procedure (the Construction Code) from 2005, includes stricter requirements on environmental impact assessment in accordance with European legislation.

Measures:

- Ensure support for strategic and action planning across the sectors.
- Interconnect support at all levels of the public administration.
- Attempt to improve the quality of management in the regions on the basis of LA21 (including indicators of SD and other expert methods).
- Create criteria for assessing the quality of the LA21 process.
- Simplify conditions and provide motivation so that good LA21 become a common instrument in functioning of the public administration in CR.
- Include implementation of the LA21 process as a supplementary criterion for evaluation of applications for allocation of subsidies (NGOs from the funds of MoE, municipalities and regions from the funds of MRD).
- Incorporate LA21 into the legislative and methodical framework that will determine the quality of strategic planning in municipalities/cities/microregions/regions.
- Promote and increase information levels on instruments of strategic planning on the basis of specific cases of good practice in LA21 in municipalities, cities, microregions and regions.
- At an international level, increase the prestige of CR on the basis of examples of good practice of LA21 in municipalities, cities, microregions and regions.
- Include environmental impact assessment in the regulations for implementation of the new Construction Act.
- Respect specially protected territories, localities of the Natura 2000 system, wetlands, protective zones of water sources, protected areas of natural accumulation of water and potentially utilisable deposits of industrial minerals.
- Incorporate the territorial systems of ecological stability.
- Maximally utilise abandoned or poorly used areas and structures – brownfields – for industrial and other human activities.
- Prevent excessive fragmentation of the landscape and promote its ecological stability.
- Preserve or extend the area of territories with good air quality and maintain pollution limit values and emission ceilings.
- Respect locating places of operations, that could be a source of serious accidents, outside of human settlements, specially protected territories and protected areas of natural accumulation of water and designate areas of anthropogenic anomalies of high-risk substances, where they constitute an obstacle (limit) for new functional use of a territory.
- Respect waste management plans at a national level and at the level of the regions and waste generators.
- Respect plans for the main water courses and plans for river basin areas.
- Respect protection against noise.
- In proposals for location of large energy sources, verify the greater importance in land-use planning in a number of variants, including a decentralized energy supply system.

7. Instruments of Public Participation

Active participation of all key groups and the general public constitutes one of the basic principles of sustainable development.

The main instruments for public participation at a national level consist in legislative measures and also “soft instruments” (without the nature of legislative measures). Soft instruments include particularly the institute of the referendum and local referendum, the institute of the ombudsman, the possibility of making comments on the part of the public in the areas of creation of economic and legislative instruments, subsidy policy, etc.

Environmental law and law in general (administrative law) in its valid form already contain all three instruments, i.e. the procedural triad, on the basis of which the Aarhus Convention is constructed. A survey of the relevant legal regulations is given in the annex to this material.

The first instrument of this triad is the right to information, which is an essential component of the right to the environment (according to Article 35 (2) of the Charter of Fundamental Rights and Freedoms “Every one has the right to timely and complete information on the state of the environment and natural resources”) and is also a necessary precondition for qualified use of the other two instruments of public participation (participation in decision-making and access to justice). The basis of the right to information is contained in the general law on free access to information and the special law on the right to information on the environment.

In particular, public participation in the decision-making of administrative authorities is included in the general regulations of administrative law. The Code of Administrative Procedure (§ 14) assigns the position of a party to those whose rights, interests protected by law or obligations are involved in the procedure, those whose rights, interests protected by law or obligations could be directly affected (or who so states, however, only until it is demonstrated otherwise) and, finally, those for whom the position of participant is recognised by a special legal regulation. The Construction Code and also the Act on Integrated Prevention, Act on Protection of Nature and the Landscape, etc. are such special regulations.

In addition, the legal regulations regulate public participation in the creation of acts of administrative law, which are not issued in the form of an administrative decision, and also in

creation of documents prepared by obliged persons under the supervision of the public administration (e.g. safety report pursuant to the Act on Prevention of Major Accidents). These regulations include particularly the Construction Code (land-use planning documents), Act on Environmental Impact Assessment (standpoint), Act on Strategic Environmental Impact Assessment (standpoint), etc.

The third pillar in the procedural triad (access to justice) is provided by the new legislation on administrative justice, contained in the Code of Administrative Justice. In the framework of administrative justice, the courts decide on suits against decisions of the administrative authorities, on protection against inactivity of the administrative authorities and on protection against illegal intervention of an administrative authority (and on suits on competence).

Provision for public participation in the creation of conceptions, plans and decisions is currently inadequate in CR and is based on several provisions of the Construction Code, primarily for EIA, SEA, IPPC, protection of nature and the landscape and both Acts on access to information. The new Construction Code and amendment to the Act on Environmental Impact Assessment will bring these processes into full accordance with the EC Directives and with the Espoo and Aarhus Conventions and it will become possible to not only criticize local, regional and national conceptions, but also to participate in their creation.

At a local and regional level, a top-priority instrument consists in public participation in LA21 (see Chapter 6 Instruments of Strategic Planning and its Measures).

Measures:

- Ratify and implement the Aarhus Convention (including the EC Directive implementing it) and Agenda 21.
- Increase the role of nongovernmental organisations, partners for sustainable development.
- Provide technical, organisational and economic conditions for access of the public to information on the environment (public information centres, sectoral information system, publishing yearbooks, reports on the environment, publications, workshops, internet) and their active utilisation in participation in conceptual activities and decision-making of bodies of the public administration.
- Provide for participation of municipalities and the public in decision-making on the use of mineral resources in their territories.
- Increase active public participation in care for the environment (separate waste collection, planting of vegetation, use of local heating units with cleaner and more economical technologies, etc.).

Annex 2: Survey of laws related to public participation.

8. Research and Development

Gaining support from research and development constitutes an important component of the Lisbon process. Research and development are promoted by Act No.130/2002 Coll., on support for research and development from public funds and amending some related laws.

Research and development are important disciplines that, through their outputs, influence reduction of the detrimental impacts of human activities on the environment, remediation and elimination of the damage caused and monitoring of

changes in the quality of the environment. New technologies provide a great potential for protection and improvement of the environment and sustainable development.

Measures:

- Participate actively in implementation of the 6th Environment Action Program and the 6th EU Framework Program for Science and Research.
- Employ scientific institutions (AS CR, universities and research institutes) in formulating the priorities of research and development in the area of protection of the environment and professional guarantees for sectoral programs.
- Cooperate with the Commission for the Environment of AS CR and the Technical Centre of AS CR.
- Provide for transformation of the professional information base.
- Introduce research on technologies and facilities for protection and improvement of the environment and sustainable development.
- Create an information system on research and development.
- Actively promote research on new biotechnical methods in agriculture connected with assessment of the risk for the environment of their implementation.
- Provide for research on the effective use of natural material and energy sources, protection of natural resources in material flows and waste management, protection of water sources and water in the landscape.
- Employ research procedures to promote rational use of energy and create conditions for the development of new technologies for renewable energy sources.
- Actively introduce measures for protection against emissions of greenhouse gases in CR, employ modern trends in protection of the atmosphere.
- Continue to provide for and improve research in the area of study of the environmental impact on human health.
- Initiate, promote and develop research on means for creation of an acoustically acceptable environment, including development of installations with low noise emissions and the most acoustically favourable transport systems.
- Promote research in an attempt to create effective instruments for protection of the environment, especially economic instruments.
- Formulate methods and indicators for monitoring and protection of the environment, monitoring of long-term changes in ecosystems.

9. International Cooperation

Protection of the environment in a context of sustainable development has become a global issue, that cannot be resolved only within the territory of a single country or region, but which requires a complex approach exceeding the borders of countries and continents. A joint, coordinated international approach is the only effective pathway towards dealing with global environmental issues. This approach has been characterised by great dynamics in recent years, reflected in the growing number of multilateral and bilateral agreements on prevention, reduction and elimination of the detrimental environmental impacts of economic development, human activities, natural catastrophes and environmental accidents.

The World Summit on Sustainable Development, held in September 2002 in Johannesburg in South Africa, brought a new dimension to development of international cooperation.

The Summit confirmed the interconnection of economic, social and environmental policies and adopted a number of comprehensive targets towards achieving sustainable development.

The European Union undoubtedly plays a leading role in international environmental processes and the Czech Republic thus has an opportunity for intensive participation in a dialogue at an international level on aspects of environmental protection and sustainable development, in mechanisms of international cooperation and through activities in its territory and, through support for activities in other parts of the world, for participation in dealing with existing issues in the broader context of the environmental policy of the European Union.

Consequently, international cooperation is one of the important instruments of SEP, where the main target consists in support for international cooperation in the area of protection of the environment at a bilateral and multilateral level and strict implementation of environmental standards corresponding to international commitments and the requirements of the national legislation.

A majority of national policies have side effects on developing countries, and especially contemporary trends in consumption and production in the European region entail environmental impacts in third countries and contribute to global environmental problems. Thus, another important instrument in implementation of SEP consists in cooperation with developing countries through official development assistance and partnership between the governmental and nongovernmental sectors, aimed at support for sustainable development and improving the state of the environment and quality of the lives of the inhabitants of the receiving countries.

The collection of information, regular provision of requested information and reporting and exchange thereof is also an essential part of participation in international activities.

The most important measures in the area of international cooperation include:

- Cooperation and promotion of priorities in the framework of EU
 - Cooperate in creation and implement EC legislation in the area of environmental protection.
 - Ensure interconnection of all strategic and conceptual materials of CR with EU materials.
 - Participate in EU partnerships .
 - Create effective mechanisms and administrative capacities for preparation of programs for withdrawal of resources from EU funds and their effective use.
 - Concentrate on promotion and implementation of CR priorities in the framework of EU in the area of the environment – climate change and air protection, protection of the landscape, water, soil and mineral resources, complex management of chemical substances and sustainable consumption and production.
- International Agreements
 - Meet the commitments of CR as a Party to international environmental agreements.
 - Create conditions for accession by CR, acceptance or ratification of other international environmental agreements and for their effective implementation.
 - Complete the ratification process of the Convention on Access to Information and Public Participation in Environmental Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention), the

European and the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to the Convention on Long-range Transboundary Air Pollution.

- Promote and search for financial means for implementation of MEAs (multilateral environmental agreements) and environmental protection in developing countries.
- Develop cooperation and active participation of CR in the framework of international cooperation in protection of waters, through multilateral agreements on the International Commission for Protection of the Elbe river, the International Commission for the Protection of the Odra river against Pollution and the Convention on Cooperation for the Protection and Sustainable Use of the Danube river and bilateral agreements on cooperation on border waters with neighbouring countries (Germany, Austria, Slovakia and Poland).
- Cooperation with international organisations
 - Participate actively in cooperation and activities in the framework of international, intergovernmental and regional organisations concerned with aspects of environmental protection (OECD, UNECE, UNEP, UNDP, WHO, WTO, etc.) and apply standards under national conditions and meet commitments accepted in the framework of membership of CR in these international organisations.
- Bilateral and transboundary cooperation
 - Develop bilateral and transboundary cooperation, especially in the area of protection of waters and clean air.
 - In prepared bilateral agreements, include provisions on transboundary environmental impact assessment for plans and programs, or conclude new agreements.
- Official Development Assistance
 - Develop international cooperation with developing countries and increase the share of official development assistance concerned with support for sustainable development and improving the state of the environment.
 - Concentrate official development assistance on sustainable means of utilising natural resources and introduction of environmentally sound technologies.
 - Cooperate in increasing the transfer of the experience of CR to developing countries, especially to the regions of South-Eastern and Eastern Europe, the Caucasus and Central Asia.
 - Employ official development assistance to assist in intensifying political and economic relations between the partner countries and CR.
 - Assist in participation of Czech companies in international programs of the World Bank, International Monetary Fund, European Bank for Renewal and Development.

Annex 3: Survey of international environmental agreements

10. Institutional Instruments

Institutional instruments are of irreplaceable importance in implementing the State Environmental Policy. In addition to implementation of the measures of SEP, control should be carried out of their fulfilment, evaluation of the individual indicators, etc.



The basic instrument in implementation of SEP consists in state institutions, those established both by the Ministry of the Environment and by the other sectors, as well as the organisational units of the state. They are of the greatest importance, especially in implementation of adopted measures and control.

The Czech Environment Inspection plays an essential role in inspection competence. A number of organisations established by the Ministry of the Environment participate in research and resolution of various aspects connected with the environment. As the area of the environment is part of a number of sectoral policies, this aspect is dealt with by a number of state institutions.

One of the most important institutional instruments is the State Environmental Fund of CR. This public-law state financial institution decisively supports environmental investments by municipalities and other entities. The Fund specifically provides direct and indirect financial support in the sense of § 3 and § 4 of Act No. 388/1991 Coll., on the State Environmental Fund of the Czech Republic, in the form of subsidies, loans or contributions towards partial payment of interest. According to law, the Minister of the Environment makes decisions on use of financial means from the Fund. Pursuant to the Act on the Fund, the Council of the Fund is an advisory body for the Minister. Decisions of the Minister on provision of support from the Fund are issued to support financing of individual projects. The Office of the Fund provides for implementation of supports as they follow from the Decisions of the Minister of the Environment. The importance of this institution is increasing, as it will participate in co-financing projects paid from EU funds – the Cohesion Fund and Infrastructure Operational Program.

An important step in establishing information flow in the sector consists in establishing a central link in management of information flows (see Chapter 5. Information Instruments). This institution will have a similar position in the sector to that of EEA relevant to the European Commission, i.e. will provide for collective reporting, manage acquisition of information and ensure feedback.

The bodies of the regional and local governments play an irreplaceable role in implementing SEP. They are closer to the place of their actions and thus can be far more effective in implementing specific measures to improve the environment. They are also exposed to pressure from voters, as environmental issues are frequently key points in election campaigns. Thus, the state administration plays an important role in improving provision of information and methodical guidance of regional and local self-governments and simultaneously provides support for information feedback from these local governments of the central authorities.

It is necessary to inform the courts, especially the administrative courts, of the newly developing legislation in the area of the environment.

Another important group consists in academic communities, various public benefit organisations, civic associations and individuals, who can contribute in various ways - through research, direct activities in creation of the environment, enlightenment and control activities. They play a unique role in resolving individual aspects. These organisations must be supported institutionally, with information – through provision of publicly accessible, timely information on the state of the environment, financially – through allocation of grants for various projects and research with the required emphasis, and medially – through publication of or awards for successfully completed projects.

The business sector also need not be simply the object of the legislative or economic measures of SEP but can, through voluntary instruments (EMAS, ecolabelling), provide a good example for other business entities on how to minimise the environmental impact of operating a business.

Measures:

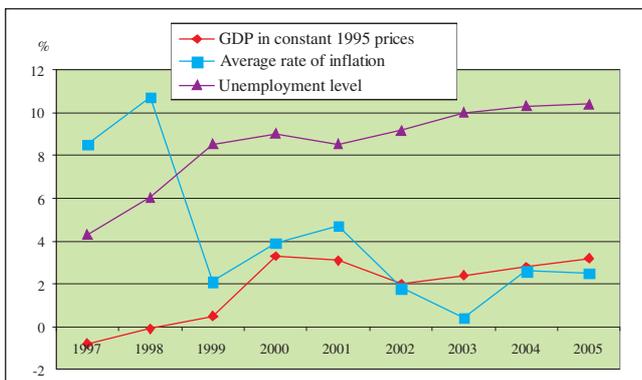
- Ensure cooperation with the institutions of the European Union, such as the European Environmental Agency and the newly created Agency for Chemical Substances.
- Improve coordination and cooperation with other international institutions in the area of the environment, e.g. OECD, OSN, UNEP.
- Utilise the Government Council for Sustainable Development to promote the environmental pillars of sustainable development.
- Cooperate in the creation of information centres for technology supporting economic growth with a stable or decreasing consumption of energy and materials.
- Improve the collection of data on the production and management of hazardous waste.
- Prepare emission forecasts, emission inventories and emission monitoring.
- Provide institutionally for trading in emissions.
- Ensure institutional provision for the issue of climate change.
- Promote the creation of regional councils for sustainable development.
- Improve communication between the central bodies of the state administration, institutions established by them, the regions, academic community and civic society.
- Provide regular information on the activities of the institutions and publish them, especially in publicly accessible web sites.
- Cooperate with the academic community in research and resolving of tasks connected with the environment.
- Strengthen information feedback between local, regional and central institutions.
- Promote the creation of regional and local programs to improve the environment and to protect nature and the landscape.
- Promote resolving of local problems at a local level in cooperation with local civic organisations and individual citizens.
- Provide information to business entities in the area of minimisation of the environmental impacts of business activities and better use of materials and energy.

VI. Costs and effectiveness of the proposed targets

1. Survey of Current Economic Developments

The development of financial measures in the area of the environment is firmly connected with trends in macroeconomic indicators and must be based on economic conditions in the Czech Republic. The rate of GDP growth in constant 1995 prices reached a level of 2.0% in 2002 and a growth of 2.4% was expected for 2003. Trends in the following years can be read from the following graph.

Trends in the main macroeconomic indicators, in %



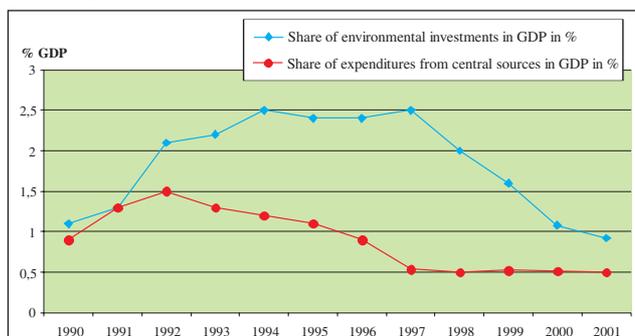
Source: Macroeconomic predictions of the Ministry of Finance (July 2003)

In relation to the GDP level per capita, measured in terms of the standard purchasing power parity (artificially expressed purchasing power parity of national currencies, which eliminates the effect of different price levels between the individual countries), it should be stated that the Czech Republic as a whole is considered to be an economically weak area, as GDP per inhabitant does not reach 75% of the average level in the European Union, and thus it is suitable for provision of assistance from funds of EU. The average GDP per inhabitant in the previous period in all the cohesion regions (except Prague) below the level of 60% of the EU average.

2. Trends and Current Conditions in the Area of Financing of Environmental Protection in CR

After 1990, there was a substantial increase in total expenditures, including the level of contribution to GDP, for all statistically monitored investments for the environmental protection. In 1990, 6 bil. (187.5 M€¹⁾) CZK was spent for environmental protection, i.e. 1.1% GDP, which increased to 28.3 bil. CZK (884.4 M€) in 1994, i.e. 2.5% GDP. In 1994 to 1997, the percentage of environmental investments in GDP was almost constant, 2.4% GDP in 1995 and 1996 and 2.5% GDP in 1997, when 40.5 bil. CZK (1265.6 M€) were expended. The reduction in environmental investments in 1998 to 2001 in current prices is depicted in the following graph as a percentage of GDP in current prices:

Share of investments for environmental protection in GDP, in %



Central sources = state budget, NPF, SEF CR.

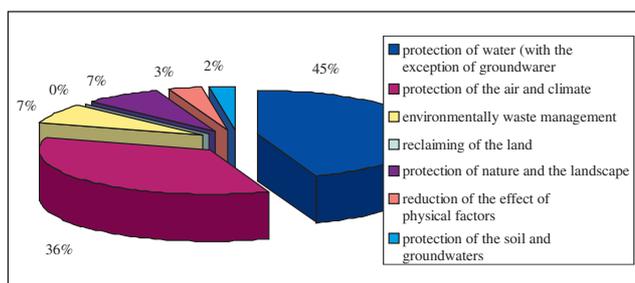
Source: CZSO, MoF, MoE.

In 2001, environmental investments corresponded to 0.9% GDP, corresponding to 19.9 bil. CZK (621.9 M€). The share of environmental investments in total investments equalled 3.3% in 2001.

In the period between 1994 and 1997, almost 60% of environmental investments were directed towards protection of the air and climate, following from Act No. 309/1991 Coll., on protection of the air, which was later replaced by Act No. 86/2002 Coll. A significant decrease in air pollution was achieved through investments on end-of-pipe technology, such as filters and traps. These technologies are not prevention measures against pollution, but only means of reducing the emissions formed. Investments into the area of water protection in 1994 – 1997 remained stable at a level of approx. 10 bil. CZK (312.5 M€), 10.8 bil. CZK (337.5 M€) in 1994 and 11.3 bil. CZK (353.1 M€) in 1997, i.e. in the range 27 – 38 %. Total investments into the environment equalled approx. 34.5 bil. CZK (1078.1 M€) p.a. in the 1994 – 1997 period.

Trends in investments according to the individual components of the environment between 1997 and 2001 indicate a shift from substantial investment financing of the area of air protection in 1997 to the area of water protection, connected primarily with support for collection and treatment of waste waters. Investments expended for air protection in 1994 – 1997 were a result of the Act on the Air. At the present time, emphasis is placed mainly on implementation of Council Directive 91/271/EEC, concerning urban waste-water treatment, where it is necessary to provide for the construction and reconstruction of waste water treatment plants and sewer systems for agglomerations in the category of 2000 to 10 000 PE and the required higher degree of treatment for waste water treatment plants over 10 000 PE in sensitive areas by the end of 2010.

Share of investments for environmental protection for the individual components in 2001

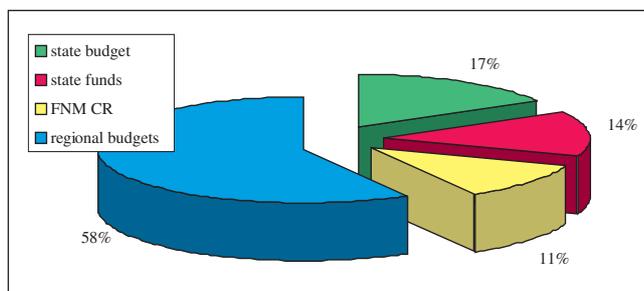


¹⁾ exchange rate used 1 = 32 CZK (May 2004)

In 2001, own resources of investors in absolute terms constituted approx. 12.5 bil. CZK (390.6 M€), corresponding to approx. 63% of total investments expended for environmental protection, and repayable loans of 2.5 bil. CZK (78.1 M€), i.e. 12.5%.

Environmental expenditures are an important item in public budgets expenditures. Stated explicitly, 295.7 bil. CZK (9240.6 M€) were expended in 1990 – 2001 in the framework of statistically monitored investments for environmental protection.

Expenditures from the state budget, state funds, National Property Fund and regional budgets for environmental protection in 2002

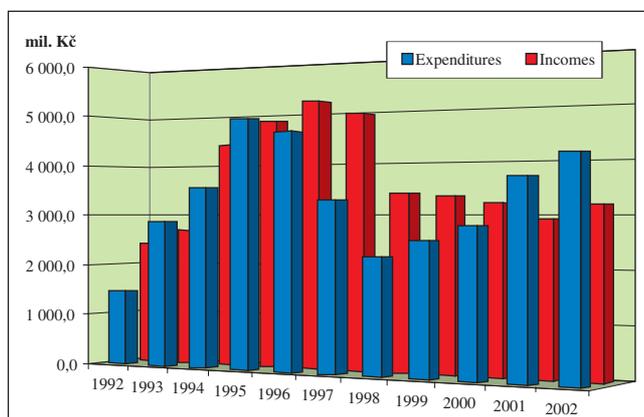


Expenditures from the NPF include financial means expended to remedy environmental damage incurred in enterprises prior to privatisation. Expenditures from the state budget in 2002 were directed primarily towards protection of water in an amount of approx. 1.1 bil. CZK (34.4 M€) and protection of biodiversity and the landscape in an amount of 1.8 bil. CZK (56.3 M€). From the sources of state funds, i.e. especially SEF of CR, substantial amounts were employed to finance the area of water protection in an amount of approx. 1.9 bil. CZK (59.4 M€) and air protection in an amount of approx. 1.4 bil. CZK (43.8 M€). Expenditures from regional budgets in 2002 were directed primarily towards protection of water in an amount of approx. 6.8 bil. CZK (212.5 M€) and waste management in an amount of 5.4 bil. CZK (168.8 M€).

SEF CR is one of the most important sources of financing of environmental investments in CR.

In 1992 – 2002, a total of 36.1 bil. CZK (1128.1 M€) were expended from the financial means of the State Environmental Fund of CR.

Trends in incomes and expenditures of the State Environmental Fund of CR according to the components of the environment, 1992 – 2002



Income of the SEF consists particularly of charges for discharging waste waters into surface waters, charges for discharging pollutants into the air, charges according to the Act on Wastes, payments for withdrawal of land from the agricultural land fund, charges for actual withdrawals of ground waters (in an amount of 50% of their total volume), payments made into the state budget for extracted minerals, fines imposed by the bodies of the administrators of the SEF and the Czech Environment Inspection for violation of regulations and measures in environmental protection, monetary income from punishment of applicants for unauthorised use or holding of the means of the SEF, and other income laid down by the generally binding regulations in the individual sections of the environment.

Of total expenditures of the state budget for environmental protection in 2002, 67% were expended for operate expenditures, especially in the area of protection of biodiversity and the landscape (including expenditures for protection of species and habitats, protection of important ecosystems and localities, care for the appearance of municipalities and public green areas).

The resources of the State Environmental Fund CR were employed to support up to 89% of investment measures, especially in the area of water protection (collection and treatment of waste waters, modification of minor water courses) and air protection (removal of particulate emissions, removal of gaseous emissions, changes in heating technology, measures to reduce the production of greenhouse gases and gases depleting the ozone layer, changes in production technology for the purpose of substantial reduction of emissions, monitoring of air protection). 55% of the amount spent from regional budgets was allocated for operational expenditures, mostly in the area of waste management (collection and accumulation of hazardous and municipal wastes, use and disposal of hazardous and municipal wastes, prevention of waste generation and monitoring of waste management). More detailed information on expenditures from the SEF CR according to the individual programs is contained in the Report on the activities of the SEF, prepared annually.

Other sources for financing projects in the area of the environment are EU Phare and ISPA preaccession funds and international financial institutions, e.g. loans from the European Investment Bank. Recently, assistance in the framework of the Phare program has concentrated on twinning projects – the work of long-term consultants (twins) from the EU Member States in certain areas (especially in the area of protection of water, the air, IPPC and wastes) and investment projects (e.g. instruments for monitoring the quality of the air and water, instruments in the area of wastes and GMOs, computer technology, etc.). The CBC Phare (Cross-Border Cooperation) program is used at a regional level and is concerned primarily with support for investment projects in the infrastructure. Phare CBC will be replaced by the INTERREG III program following accession to EU. In the environmental sector, the greatest financial means from CBC were allocated for construction, reconstruction and intensification of waste water treatment plants and sewerage systems. In the framework of ISPA financial instruments (Instrument for Structural Policies for Pre-accession), it is intended to support projects to improve the infrastructure in the area of the environment and transport. In the sector of the environment, ISPA funds are directed towards the following priority areas: water protection, protection of the air

and climate and waste management. A loan from the European Investment Bank is employed through the budget of the Ministry of Agriculture to support projects in the area of infrastructure in water management.

Conclusions following from trends and the current state of financing in the area of environmental protection:

- In 1994 – 1997, the share of investments for environmental protection varied at the level of 2.4 and 2.5% of GDP, corresponding to an amount of 28.3 bil. CZK (884.4 M€) in 1994 and 40.5 bil. CZK (1265.6 M€) in 1997, in 2001 the share of GDP equalled 0.9% GDP, corresponding to an amount of 19.9 bil. CZK (621.9 M€).
- The total share of expenditures from the state budget, state funds and National Property Fund in GDP in 1994 – 1997 decreased from 1.2% to 0.54%, corresponding to an amount of 13.7 bil. CZK (428M€) in 1994 and 9.0 bil. CZK (281.3 M€) in 1997.
- Total expenditures of regional budgets in 1997 – 2001 corresponded to 119.3 bil. CZK (3728.1 M€), i.e. an average of 23.9 bil. CZK (746.9 M€) annually.
- In 2002, total expenditures from the state budget equalled approx. 4.95 bil. CZK (154.7 M€), of which capital expenditures equalled approx. 1.63 bil. CZK (50.9 M€), total expenditures from state funds equalled approx. 4.2 bil. CZK (131.3 M€), of which capital expenditures equalled approx. 3.7 bil. CZK (115.6 M€), total expenditures from regional budgets equalled approx. 17.3 bil. CZK (540.6 M€), of which capital expenditures equalled approx. 7.8 bil. CZK (243.8 M€), and total expenditures of the National Property Fund to remedy environmental damage equalled approx. 3.2 bil. CZK (100 M€).
- In the middle of the 90's, investment funds were primarily expended in the area of air protection, while the greatest share of investments is currently expended in the area of water protection.

The share of environmental investments in GDP has decreased substantially since 1997 from 2.5% to 0.9% in 2001, while the share of expenditures from central sources (state budget, state funds, NPF) decreased from 1.5% in 1992 to approx. 0.5% in 1997 and this share then remained at a level of approx. 0.5% in 1997 – 2001. Total investment costs for implementation of the EC legislation in the area of the environment are expected to equal 285 bil. CZK (8906.3 M€), which should be expended in the 2000 – 2010 period. Specific financial allocations are included in the individual documents approved by the Government, e.g. the Framework Investment Strategy for Financing Implementation of the Legislation of the European Communities in the Area of the Environment, Updated Strategy of financing implementation of Council Directive 91/271/EEC concerning urban waste water treatment, Directive 91/676/EEC on protection of water against pollution by nitrates from agricultural sources and Directive of the European Parliament and Council 94/62/EC on packages and packaging waste, and the Implementation Plan for the Area of the Environment. In connection with implementation of Directive EC 2001/42/EC through the amendment to Act No. 100/2001 Coll., on environmental impact assessment, increased expenditures can be expected for execution of the state administration at MoE and the Regional Authorities (the estimate for 2004 equals 38 mil. CZK (1.2 M€), of which 35 mil. CZK (1.1 M€) will be expended by the regions).

At the present time, it is necessary to employ the approved Conception of Reform of Public Budgets in providing financial means from the state budget, state funds and regional budgets in implementation of the legislation of the European Communities.

3. Expected Available Sources of Financing

In connection with provision of financial assistance in the area of environmental protection to meet the requirements of the European Union legislation, sources of financing are available through the funds of the European Communities, international financial institutions (EIB, EBRD, ...), the state budget, State Environmental Fund CR, National Property Fund and regional budgets. Sources in the state budget are substantially limited by the approved Conception of Public Budgets Reform through Government Resolution No. 624 of June 23, 2003. One of the main targets of this reform is to reduce the deficit in public budgets and to achieve the Maastricht criteria.

The State Environmental Fund CR is the greatest provider of financial assistance for implementation of projects; it is capable of providing direct financial assistance through subsidies and loans and indirect financial assistance through contributions to partial payment of interest on loans.

The use of the “PPP” principle, i.e. cooperation between the public and private sector (public-private partnerships) in providing for investment measures, is also expected to be a source of financing. This aspect has been supported by Government Resolution No. 624 of June 23, 2003 on the Conception of Public Budgets Reform. The following factors form basic preconditions for the use of financing of projects through PPP: the final economic benefit of PPP must be greater than the economic benefit in the traditional method of implementing the project by the public sector, transfer of the risk associated with the project to a participant in the project who is capable of better controlling any risks following from the implementation – the private sector, the public sector must define the standard of the public services required – optimal provision of public services with simultaneous consideration of the economic aspects, public activities are not generally transferred to a private operator in PPP and generally the activity is returned to the public sector after completing the project; consequently, it is necessary to clearly define the rules for maintenance of the values of public assets administered by the private sector; competitiveness must be ensured and managed in the framework of PPP projects so as to lead to the maximum introduction of innovations in the given area of public services.

4. Effectiveness of Expenditures in the Environmental Sector

The effectiveness of implemented measures is evaluated on the basis of a method of comparison between the expenditures and the benefits achieved. In the area of the environment, the costs of improvement of the state of the environment are compared with the environmental effect achieved (e.g. a decrease in emissions of a particular pollutant into the air or into water).

The effectiveness of measures implemented in the area of the environment is monitored in the greatest detail by both research institutions and also in the framework of the State Environmental Fund CR in the range of the following indicators:



VII. Environmental Indicators

Environmental indicators are suitably selected summary indicators that form the basis for assessment not only of the condition of the environment, but also of the effectiveness and suitability of policy decisions, i.e. the policy of protection of the environment as a whole.

Initially, indicators of an explicitly environmental character were employed; gradually the relevant indicator systems were extended in relation to the aspect of sustainable development, i.e. indicators on the of the social/environmental and economic/environmental interface were also included.

The Czech Republic and specifically MoE began to seriously consider the aspect of indicators roughly in the middle of the 1990's, based on the OECD system, where indicators became an instrument of evaluation of the effectiveness of the environmental policy of the OECD member countries. The OECD indicators are based on a conceptual model of the "effect-state-response" interactions between human society and the environment. OECD adopted three criteria for construction and selection of environmental indicators – a) relevance to environmental protection policy and to global issues, b) ability to indicate change, and c) comprehensibility and easy interpretability. Most of the indicators are relative quantities related to a unit area, to an inhabitant, to unit GDP, etc.

An extensive set of indicators has also been prepared for use in the State Environmental Policy and is divided into two groups:

- a) social and economic indicators
- b) environmental indicators.

The survey of selected indicators included in the State Environmental Policy is based on the original conception of a basic set of environmental indicators developed at the beginning of the 90's in OECD, but was reworked and modified for use in SEP. Because of the possibility of comparing the state of the environment in CR with conditions abroad, primarily the values of indicators in EU states were included, both the average value for EU-15 and the maximum and minimum values in the framework of EU-15. Specific values for calculation of the individual indicators or directly their values were mostly taken from the annual Reports on the Environment in CR¹⁾, a document prepared by MoE that, according to Act No. 123/1998 Coll., on free access to information on the environment, is subject to approval by the Government and is discussed by the Parliament of CR.

Data related to 2005 and 2010 are only intended to indicate the desirable direction of developments in the area of the environment.

- the specific financial intensity, given by the ratio of expenditures from the Fund and elimination of a pollution unit,
- elimination of a pollution unit per inhabitant in the location, district or region per year, where the measure is implemented,
- elimination of a pollution unit per inhabitant in the location, district or region, per year, where the measure is implemented, related to expended financial means.

In order to ensure effectiveness of the implemented measures in relation to the financial assistance provided from the State Environmental Fund CR, environmental benefits are also monitored, determined ex-ante and subsequently ex-post. This means that an evaluation is carried out of the expected environmental benefits according to the concluded agreement on support and the actual benefits determined in the framework of the final evaluation of the project. On the basis of releasing of 10% of the financial means of the support after successful construction inspection, a stimulus is provided for meeting the project parameters of supported construction. The effectiveness of the State Environmental Fund is monitored from the economic and environmental standpoints and both criteria are of equal importance for decision-making. In the sense of the principle of sustainable development, it is necessary to monitor the effectiveness from the economic, environmental and social points of view.

Economic analysis, including a feasibility study, is carried out during implementation of targets and measures in the area of the environment. In connection with fulfilling the targets of environmental policy, additional costs are quantified in the framework of total costs for implementation of necessary measures. Financial impacts of measures in the area of the environment are always specified from the standpoint of the source of financing, i.e. financial means from public sources, foreign sources and private sources.

¹⁾ Any differences in the values of some indicators in comparison with other sources of statistical data on CR mostly follow from different methodical procedures, other definitions or taking of some basic data (e.g. GDP) from foreign sources.

SURVEY OF SELECTED INDICATORS IN CR AND EU

Indicator	EU-15 ¹⁾ average	Max. EU-15 ¹⁾	Min. EU-15 ¹⁾	1990 CR	1994 CR	1998 CR	1999 CR	2000 CR	2002 CR	Desirable state 2005	Desirable trend to 2010
a) Social and economic indicators											
1) GDP (USD 1000 per inhabitant)²⁾	21.96	42.60 (LU)	14.96 (EL)	12.94	11.67	12.71	12.78	13.21	14.00	.	.
2) Population density (inhabitant.km⁻²)	116.3	383.5 (NL)	15.3 (FI)	131.4	131.1	130.5	130.4	130.3	129.3	.	.
3) Unemployment as % of the work force	8.4	14.1 (ES)	1.9 (LU)	0.7	3.2	7.5	9.4	8.8	9.8	.	.
4) Total primary sources of energy											
- domestic consumption of primary energy sources (DCPES) (toe.inhabitant ⁻¹) ⁴⁾	3.87	8.42 (LU)	2.46 (PT)	4.78	3.89	3.85	3.77	3.85	3.99 ³⁾	3.8	↓
- energy intensity of creation of GDP (toe.1000 USD GDP ⁻¹) ⁴⁾	0.18	0.27 (FI)	0.14 (IT, DK)	0.37	0.33	0.30	0.29	0.29	0.28 ³⁾	0.26	↓
- structure of DCPES according to source (%) ⁵⁾	x	x	x	100	100	100	100	100	100 ³⁾	100	.
-- solid fuels (brown and black coal incl. coke, briquettes) without wood	14.5	32.4 (EL)	2.7 (LU)	64.3	57.5	51.8	48.7	51.6	52.9 ³⁾	45	.
-- liquid fuels (petroleum)	40.6	63.4 (PT)	28.2 (SE)	17.1	18.5	18.7	19.7	18.3	16.8 ³⁾	18	.
-- gaseous fuels (natural gas)	23.2	45.8 (NL)	6.1 (EL)	10.9	14.4	19.3	19.7	18.5	17.3 ³⁾	16	.
-- nuclear energy	15.4	42.1 (FR)	0 ⁶⁾	6.7	8.4	8.7	9.0	8.6	10.6 ³⁾	16	.
-- total renewable sources	6.2	31.8 (SE)	1.2 (UK)	0.9	1.2	1.5	2.6	2.8	2.2 ³⁾	5	↑
of which:											
--- wood ⁷⁾	.	.	.	0.6	0.8	1.0	1.2	1.1	0.7 ³⁾	1.5	↑
--- water energy ⁸⁾	.	.	.	0.3	0.4	0.3	0.4	0.4	0.5 ³⁾	0.4	↑
--- other renewable sources ⁹⁾	0.2	1.1	1.3	1.0 ³⁾	3.1	↑
-- secondary energy sources ¹⁰⁾	0.2	0.2	0.2 ³⁾	.	.
5) Transport											
- fraction of rail transport in freight transport, % ¹¹⁾	13.6	46.7 (LU)	2.7 (EL)	69.2	42.3	35.0	30.6	30.3	25.4	33	↑
- total number of passenger vehicles per 100 inhabitants	46.2	58.4 (LU)	27.0 (EL)	23.3	28.3	33.9	33.4	33.5	35.7	33	.
- density of the highway network (km.100 km ⁻²)	106	482 (BE)	23 (FI)	70.8	71.0	70.2	70.3	70.3	70.3	70	.
- density of superhighways (km.10 000 km ⁻²)	165	660 (NL)	16 (FI)	42.5	49.5	63.1	63.3	63.3	65.7	.	.
- energy consumption (toe.mil.USD GDP ⁻¹) ⁴⁾	38.3	46.7 (EL, ES)	33.5 (IT)	23.5	24.1	29.3	31.2	31.0	31.8	31	↓
- energy consumption (toe.inhabitant ⁻¹) ⁴⁾	0.84	1.06 (IE)	0.67 (PT)	0.30	0.28	0.37	0.40	0.41	0.44	0.4	↓
6) Agriculture¹²⁾											
- agricultural land as % of total area of the country	43.4	69.3 (UK)	6.8 (FI)	54.4	54.3	54.3	54.3	54.3	54.2	54	.
- cultivation (%)	60.1	94.8 (FI)	23.9 (IE)	75.1	74.1	72.4	72.3	72.0	71.8	70	↓
- consumption of nitrogenous fertilizers in t.km ⁻² of cultivated land	10.8	37.4 (IE)	4.2 (PT)	9.0	5.8	5.3	5.1	5.9	7.2	7	↓
- consumption of phosphate fertilizers in t.km ⁻² of cultivated land	3.6	9.3 (IE)	1.4 (SE)	5.7	1.0	1.3	0.9	1.1	1.2	1.2	↓

Indicator	EU-15 ¹⁾ average	Max. EU-15 ¹⁾	Min. EU-15 ¹⁾	1990 CR	1994 CR	1998 CR	1999 CR	2000 CR	2002 CR	Desirable state 2005	Desirable trend to 2010
- apparent consumption of pesticides in kg of active substance per km ² of arable land	354.6	1191.5 (BE)	52.5 (FI)	277.1	116.5	133.4	135.6	139.9	152.8	150	↓
- density of cattle breeding (head.km ² of agricultural land) ¹³⁾	58.9	202.7 (BE)	6.9 (EL)	78.4	47.4	38.7	36.8	37.0	34.5	35	.
- density of breeding of sheep and goats (head.km ² of agricultural land) ¹³⁾	90.9	174.2 (IE)	5.2 (FI)	11.0	4.9	3.0	2.0	2.7	2.7	2.7	.
- density of pig breeding (head.km ² of agricultural land) ¹³⁾	88.4	671.8 (NL)	10.6 (EL)	106.6	90.3	93.4	86.1	84.0	78.7	80	.
7) Foreign Developmental Assistance											
- in USD per inhabitant	67.0	311.6 (DK)	21.3 (EL)	.	.	.	.	3.8 ¹⁵⁾	4.2	8	↑
- % of gross national income ¹⁴⁾	0.23	1.06 (DK)	0.13 (IT)	.	.	.	.	0.07 ¹⁵⁾	0.06	↑	↑
B) Environmental indicators											
8) Emissions of carbon dioxide (CO₂)											
- emissions in t CO ₂ per 1000 USD HDP	0.40	0.65 (EL)	0.27 (SE)	1.21	1.05	0.95	0.90	0.92	0.87 ¹⁵⁾	↓	↓
- emissions in t CO ₂ per inhabitant	8.8	12.4 (BE)	6.3 (SE)	15.7	12.2	12.1	11.5	12.1	12.2 ¹⁵⁾	11	↓
- emissions per unit DCPES (t CO ₂ /toe) ⁴⁾	2.3	3.7 (EL)	1.2 (SE)	3.28	3.14	3.15	3.05	3.14	3.05 ¹⁵⁾	2.9	↓
9) Emissions of sulphur dioxide (SO₂)											
- emissions in t SO ₂ per 1000 USD HDP	0.85	3.40 (EL)	0.16 (LU)	13.80	9.99	3.35	2.04	1.95	1.66	1.5	↓
- emissions in tons of SO ₂ per km ² of territory	2.2	6.7 (BE)	0.2 (SE)	23.5	15.3	5.6	3.4	3.3	3.0	3.0	↓
- emissions in t SO ₂ per inhabitant	18.6	50.9 (EL)	5.2 (DK)	178.5	116.5	42.5	26.1	25.7	23.3	22	↓
10) Emissions of nitrogen oxides (NO_x)											
- emissions in t NO ₂ per 1000 USD HDP	1.2	2.4 (EL)	0.9 (DE)	4.11	3.13	2.45	2.38	2.37	2.23	2	↓
- emissions in tons of NO ₂ per km ² of territory	3.1	11.9 (BE)	0.6 (SE)	7.0	4.8	4.1	4.0	4.1	4.0	3.9	↓
- emissions in t NO ₂ per inhabitant	27.0	45.5 (FI)	19.9 (DE)	53.2	36.6	31.2	30.4	31.2	31.2	30	↓
11) Air in cities¹⁶⁾											
- annual average concentration of SO ₂ (mg m ⁻³), in CR for a range of 9 cities	1.0 - 26.0	26.0 (Genoa)	1.0 (Tampere)	23 - 60	12 - 41	8 - 20	6 - 12	5 - 10	4 - 11	4 - 9	↓
- annual average concentration of NO ₂ (mg m ⁻³), in CR for a range of 9 cities	18.3 - 74.4	74.4 (Milano)	18.3 (Stockholm)	19. 78 ¹⁷⁾	18 - 38	22 - 33	20 - 33	17 - 33	17 - 36	15 - 30	↓
12) Wastes and waste management											
- production of municipal waste (kg.inhabitant ⁻¹ p.a.)	499	664 (DK)	429 (EL)	258 ¹⁸⁾	223 ¹⁸⁾	441	408	415	465 ³⁾	460	↓
of which:											
-- recycled (%)	16 ¹⁹⁾	40 (BE)	1 (LU)	.	.	.	7	5	10 ¹⁵⁾	15	↑
-- incinerated (%)	17 ²⁰⁾	59 (LU)	6 (ES, IT)	0 ¹⁸⁾	0 ¹⁸⁾	5	8	8	14 ²¹⁾	17	↑
-- landfilled (%)	56	91 (EL, IE)	10 (DK)	98 ¹⁸⁾	98 ¹⁸⁾	62	65	60	63 ³⁾	60	↓

State Environmental Policy of the Czech Republic

Indicator	EU-15 ¹⁾ average	Max. EU-15 ¹⁾	Min. EU-15 ¹⁾	1990 CR	1994 CR	1998 CR	1999 CR	2000 CR	2002 CR	Desirable state 2005	Desirable trend to 2010
- amount of recycled paper of the total amount formed (%)	51 ²²⁾	70 (DE)	10 (IE)	.	.	38 ²³⁾	39 ²³⁾	42 ²³⁾	50 ³⁾	55	↑
- amount of recycled glass of the total amount formed (%)	54 ²²⁾	89 (FI)	26 (EL,UK)	.	.	.	.	.	32 ³⁾	40	↑
- amount of industrial waste from the processing sector, kg per USD 1000 GDP	41.9 ²⁴⁾	129.1 (FI)	18.2 (IT)	140 ¹⁸⁾	164 ¹⁸⁾	68	67	57	67 ³⁾	.	.
- production of hazardous waste, kg per 1000 USD GDP	5.1 ²⁵⁾	7.5 (FR)	1.0 (SE)	.	15 ²³⁾	26	18	19	17 ³⁾	15	↓
- amount of spent nuclear fuel, kg heavy metals (HM) per 1000 inhabitants	7.8	28.2 (SE)	0 ⁶⁾	5.2	4.5	4.2	4.2	4.4	3.9	.	.
- amount of spent nuclear fuel, kg heavy metals (HM) per unit DCPES, (t TK.Mtoe ⁻¹)	2.0	5.3 (SE)	0 ⁶⁾	1.1	1.1	1.1	1.1	1.0	1.0	.	.
13) Water and water management, waste waters											
total water withdrawals (% of total available sources)	14.9	43.8 (BE)	1.5 (SE)	36.3	17.2	16.3	13.7	12.8	7.4	.	.
total water withdrawals (m ³ .inhabitant ⁻¹ p.a.)	587	1 110 (PT)	140 (DK)	350	251	221	192	187	180	170	↓
water withdrawals for public supplies (m ³ .inhabitant ⁻¹ p.a.)	106 ²⁶⁾	176 (I)	67 (DE)	121	99	82	78	78	74	74	↓
drinking water (% inhab. supplied from public water mains)	96 ²⁷⁾	100 (NL)	83 (PT)	83.2	85.5	86.2	86.9	87.1	89.8	90	↑
- connected to public sewers (% of population)	85.8 ²⁸⁾	97.9 (NL)	67.5 (EL)	72.6	73.0	74.4	74.6	74.8	77.4	80	↑
- of which treated (% of the population)	75.7 ²⁹⁾	97.9 (NL)	38.6 (BE)	52.8	60.0	67.9	70.9	71.6	69.8	72	↑
-- only mechanical-biological (% of the population)	68.1 ³⁰⁾	. ³¹⁾	. ³¹⁾	.	.	.	61 - 63 ³⁷⁾	.	14.8	.	.
-- to stage three (% of the population)	40.6 ³²⁾	87.0 (SE)	3.3 (ES)	.	.	.	8 - 10 ³⁷⁾	.	54.8	.	.
14) Forests and forest management											
- area of forests (% of the area of the state)	39	76 (FI)	9 (IE, NL)	33.35	33.34	33.40	33.40	33.44	33.51	33.7	↑
- intensity of use of wood sources, harvesting as a fraction of total current growth	0.61	0.85 (BE)	0.27 (IT)	0.78	0.67	0.76	0.76	0.73	0.72	0.7	↓
- annual harvesting, related to 1980 (= 100%)	.	+342 (IE)	- 12.3 (DK)	- 2.2	- 12.3	+ 2.7	+ 4.2	+ 6.0	+ 6.7	.	.
- annual current growth, change related to 1980 (= 100%)	.	+ 172 (IT)	+ 2.9 (EL)	- 0.6	+ 4.3	+ 7.6	+ 9.9	+ 15.8	+ 18.3	20	.
- export of wood and wood products (% of total national export)	.	20.6 (FI)	0.3 (EL, IE)	.	0.83	0.56	0.59	0.34	0.32	.	.
15) Biodiversity, protected areas											
- % endangered species of mammals	26	52 (LU)	7 (EL)	59	35	35	35	35	29 ³³⁾	.	.
- % endangered species of birds	21	50 (LU)	7 (UK)	52	49	57	57	57	48 ³³⁾	.	.
- % endangered species of fish	33	82 (NL)	7 (FR)	61	28	28	28	28	62 ³³⁾	.	.
- % endangered species of reptiles	47	100 (LU)	6 (EL)	91	-	100	100	100	73 ³³⁾	.	.
- % endangered species of amphibians	48	100 (AT)	2 (ES)	95	95	95	95	95	76 ³³⁾	.	.
- % endangered species of vascular plants	14	39 (AT)	1 (IE)	59	45	45	45	45	61 ³³⁾	.	.
- large protected areas (% of the area of CR)	12.1	32.0 (DK)	0.9 (IE)	13.3	14.4	15.5	15.7	15.9	15.9	16	↑

Indicator	EU-15 ¹⁾ average	Max. EU-15 ¹⁾	Min. EU-15 ¹⁾	1990 CR	1994 CR	1998 CR	1999 CR	2000 CR	2002 CR	Desirable state 2005	Desirable trend to 2010
-- expressed as ha.1000 inhabitants ⁻¹	103.7	553 (FI)	8.4 (BE)	101.2	111.4	118.7	120.8	122.2	122.6	123	↑
16) Expenditures for environmental protection³⁴⁾											
Total expenditures (% GDP)	1.2	1.8 (NL)	0.6 (EL)	1.0	2.4	1.9	1.5	1.0	0.9 ¹⁵⁾	.	.
- public budgets (% GDP)	0.7 ³⁵⁾	1.2 (NL) ³⁵⁾	0.4 (UK) ³⁵⁾	.	0.8	0.6	0.6	0.5	0.5 ¹⁵⁾	.	.
- private sector (% GDP)	0.5 ³⁶⁾	0.7 (AT, DE) ³⁶⁾	0.2 (PT) ³⁶⁾	.	1.6	1.3	0.9	0.5	0.4 ¹⁵⁾	.	.
Total expenditures (USD.inhabitant ⁻¹)	249	372 (NL)	100 (EL)	129	280	241	192	132	123 ¹⁵⁾	.	.
- public budgets (USD.inhabitant ⁻¹)	145 ³⁵⁾	264 (NL) ³⁵⁾	59 (EL) ³⁵⁾	.	93	75	77	66	68 ¹⁵⁾	.	.
- private sector (USD.inhabitant ⁻¹)	105 ³⁶⁾	144 (DE) ³⁶⁾	33 (PT) ³⁶⁾	.	187	166	115	66	55 ¹⁵⁾	.	.

- 1) Average values for EU-15 and values for the individual countries in EU-15 cover roughly the 1998, 1999 – 2000 period and only exceptionally 2001 and, in individual cases, also the period prior to 1998.
- 2) GDP employed in this survey is expressed in USD according to parity purchasing power related to 1995; the individual values were taken from OECD Economic Outlook, June 2003.
- 3) Preliminary data
- 4) 1 toe = 41.868 GJ = 11.630 MWh.
- 5) The structure of DCPES according to sources (%) is an estimate by MoE in cooperation with CSO; the greatest attention was devoted to inclusion of all energy from renewable sources, e.g. in the category of solid fuels, separation of fossil energy sources (coal, briquettes and coke) from wood.
- 6) Of the EU-15 countries, nuclear facilities for obtaining energy are not installed in Austria, Ireland, Italy, Denmark, Greece, Portugal and Luxembourg.
- 7) This fraction follows from calculation carried out assuming that a minimum of 65% of fuel in the category of "Other solid fuels" is wood.
- 8) For water energy, large and small hydro-electric plants are included, with only the larger part of small hydro-electric plants. Water storage hydro-electric plants are not included for obvious reasons.
- 9) Refers to solar, wind and geothermal energy, and also biodiesel fuel, biogas, etc.
- 10) Includes thermal and heat energy obtained by combustion of municipal and industrial wastes.
- 11) Of the fraction of railway transport in total freight transport, the calculation for EU-15 is carried out on the basis of total ton-kilometres, including shoreline commercial shipping.
- 12) Agricultural data for EU-15 without Luxembourg.
- 13) For the average for EU-15, EUmin and EUmax are the numbers of farm animals related to unit utilised agricultural area.
- 14) The gross national income (GNI) according to MoF equals the sum of GDP and the balance of net primary income from abroad. It consists in the sum of primary incomes of residents (payments to employees, net taxes on production and imports, revenues from ownership, gross operational surplus). For the values for CR, the calculation is carried out according to the new methodology as the part of GNI including contributions from international organisations (e.g. UN, OECD etc.).
- 15) Values for 2001
- 16) For CR, only the range of average annual concentrations in large cities is given (Brno, České Budějovice, Hradec Králové, Liberec, Olomouc, Ostrava, Plzeň, Prague and Ústí nad Labem). The relevant "average of averages" cannot be calculated for EU-15 and cities in CR.
- 17) Values for NO₂ (1990) only for Ostrava and Ústí nad Labem
- 18) For 1990 and 1994, this is a rough estimate by MoE based on older publications on the state of the environment in CR.
- 19) Corresponds to the average for EU-14 (without Finland).
- 20) Corresponds to the average for EU-13 (without Ireland and Greece).
- 21) Only combustion of waste with utilisation of the energy obtained.
- 22) Corresponds to the average for EU-14 (without Luxembourg).
- 23) Data for 1998, 1999 and 2000 from OECD (OECD Environmental Data Compendium 2002).
- 24) Corresponds to the average for EU-13 (without Austria and Luxembourg).
- 25) Corresponds to the average for EU-11 (without Belgium, Greece, the Netherlands and Spain).
- 26) Corresponds to the average for EU-14 (without Ireland).
- 27) % of the population connected to the public water supply: EU-15 average for the 1996 – 2001 period.
- 28) Corresponds to the average for EU-14 (without Spain).
- 29) All countries of EU-15.
- 30) Corresponds to the average for EU-12 (without Finland, France and Portugal).
- 31) The order of the countries cannot be given.
- 32) Corresponds to the average for EU-13 (without France and Portugal).
- 33) The red lists drawn up according to IUCN criteria were used for 2002.
- 34) Refers to only investments for CR.
- 35) Expenditures of the public sector including government institutions and nonprofit organisations serving households.
- 36) Expenditures of the private sector including financial institutions and nonfinancial enterprises.
- 37) Rough estimate of MoE in cooperation with TGM WMRI.

VIII. Annexes

Annex 1:

Current state of the Czech legislation

Protection of the environment is covered to a variously detailed degree in a considerable number of regulations. This list of regulations given basically covers the entire area of environmental protection. However, it is based on the conception of the sectoral approach, which is less capable of ensuring sustainable development. According to the normal categorisation of environmental law, this area is covered by several groups of legal regulations.

The constitutional legal basis for environmental protection is regulated in the Constitutional Act No. 1/1993 Coll., the Constitution of the Czech Republic (Article 7) and in the Charter of Fundamental Rights and Freedoms, Constitutional Act No. 2/1993 Coll. (Article 35).

Cross-sectional legislation is contained in horizontal or cross-sectional legal regulations, i.e. regulations related to all of the environment in general, and not only to one of its parts or components. This category of regulations encompasses especially the following:

- Act No. 17/1992 Coll., on the environment, as amended;
- Act No. 76/2002 Coll., on integrated pollution prevention and control, the integrated pollution register and amending some laws (Act on Integrated Prevention), as amended by Act No. 521/2002 Coll.;
- Act No. 100/2001 Coll., on environmental impact assessment and amending some related laws (Act on Environmental Impact Assessment);
- Act No. 244/1992 Coll., on environmental impact assessment of development conceptions and programs, as amended;
- Act No. 123/1998 Coll., on free access to information on the environment, as amended;
- Act No. 50/1976 Coll., on land-use planning and the Construction Code (the Construction Act), as amended.

The second category of regulations consists in regulations related to components of the environment, i.e. the air, water and soil, including the geological environment. This includes in particular:

- Act No. 86/2002 Coll., on protection of the air and amending some other laws (Act on Protection of the Air), as amended by Act No. 521/2002 Coll.;
- Act No. 254/2001 Coll., on waters and amending some laws (the Water Act), as amended;
- Act No. 274/2001 Coll., on water mains and sewer systems for public use and amending some laws (Act on Water Mains and Sewers), as amended;
- Act No. 258/2000 Coll., on protection of public health and on amendment to some related laws;
- Act No. 334/1992 Coll., on the protection of consumers, as amended;
- Act No. 62/1988 Coll., on geological work, as amended;
- Act No. 44/1988 Coll., on the protection and utilization of mineral resources (the Mining Act), as amended.

The third category of regulations encompasses regulations dealing with protection of ecosystems. This includes, in particular:

- Act No. 114/1992 Coll., on the protection of nature and the landscape, as amended;



- Act No. 16/1997 Coll., on conditions for the import and export of endangered species of wild fauna and flora and other measures to protect these species and on amending and supplementing Act No. 114/1992 Coll., on the protection of nature and the landscape, as amended
- Act No. 162/2003 Coll., on conditions for the operation of zoological gardens and amending some laws (Act on Zoological Gardens);
- Act No. 276/2003 Coll., on the Antarctica and amending some other laws;
- Act No. 289/1995 Coll., on forests and amending and supplementing some laws (the Forest Act), as amended.

The fourth category consists in regulations dealing with protection of the environment against some kinds of danger. The following laws are especially relevant here:

- Act No. 185/2001 Coll., on wastes, as amended;
- Act No. 477/2001 Coll., on packaging and amending some laws (Act on Packaging);
- Act No. 18/1997 Coll., on peaceful use of nuclear energy and ionising radiation (the Atomic Act) and amending and supplementing some laws;
- Act No. 157/1998 Coll., on chemical substances and chemical preparations and amending and supplementing some other laws (to the date of accession of CR to EU);
- Act No. 356/2003 Coll., on chemical substances and chemical preparations and amending and supplementing some other laws (with force from the date of accession of CR to EU);
- Act No. 353/1999 Coll., on prevention of major accidents caused by selected hazardous chemical substances and chemical preparations and on amending Act No. 425/1990 Coll., on the District Authorities, outlining of their competence and on some other related measures, as amended (Act on Prevention of Major Accidents);
- Act No. 153/2000 Coll., on management of genetically modified organisms and products and on amendment to some related laws;
- Act No. 147/1996 Coll., on plant medicinal care and amending some related laws, as amended;
- Act No. 156/1998 Coll., on fertilizers, auxiliary soil substances, auxiliary plant preparations and substrates and on agro-chemical testing of agricultural land (Act on Fertilizers), as amended.

The fifth category consists in regulations dealing with organisational provision for protection of the environment. This includes in particular:

- Act No. 282/1991 Coll., on the Czech Environment Inspection and its competence in protecting forests;
- Act No. 388/1991 Coll., on the State Environmental Fund of the Czech Republic, as amended.

Annex 2

Instruments for public participation

Right to information

- Act No. 106/1999 Coll., on free access to information, as amended;
- Act No. 123/1998 Coll., on free access to information on the environment, as amended.

Participation in decision-making of administrative authorities

- Act No. 71/1967 Coll., on administrative proceedings (the Code of Administrative Procedure), as amended (esp. § 14);
- Act No. 50/1976 Coll., on land-use planning and the code of construction procedure (the Construction Code), as amended (esp. § 21, § 34);
- Act No. 244/1992 Coll., on environmental impact assessment of development conceptions and programs, as amended (§ 14);
- Communication No. 91/2001 Coll., I.T., on adoption of the Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO);

- Act No. 100/2001 Coll., on environmental impact assessment and amending some related laws (Act on Environmental Impact Assessment);
- Act No. 76/2002 Coll., on integrated pollution prevention and control, the integrated pollution register and amending some laws (Act on Integrated Prevention) (esp. § 7);
- Act No. 114/1992 Coll., on the protection of nature and the landscape, as amended (esp. § 70);
- Act No. 254/2001 Coll., on waters and amending some laws (the Water Act), as amended (e.g. Chapter IV, Chapter IX);
- Act No. 86/2002 Coll., on protection of the air and amending some other laws (Act on Protection of the Air) (e.g. § 36);
- Act No. 353/1999 Coll., on prevention of major accidents caused by selected hazardous chemical substances and chemical preparations and on amending Act No. 425/1990 Coll., on the District Authorities, outlining of their competence and on some other related measures, as amended (Act on Prevention of Major Accidents) (Chapter V);
- Act No. 153/2000 Coll., on management of genetically modified organisms and products and on amendment to some related laws (esp. § 12).

Participation in administrative justice

- Act No. 150/1997 Coll., on the Code of Administrative Justice, as amended by Act No. 192/2002 Coll. (esp. § 33 ff.).



Annex 3:

Survey of multilateral international environmental agreements

Survey of international agreements that have come into force for CR:

- UN Framework Convention on Climate Change
- Convention on Biological Diversity
- Cartagena Protocol on Biosafety
- United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa
- Vienna Convention for Protection of the Ozone Layer
- Montreal Protocol on Substances that Deplete the Ozone Layer as amended by: the London Amendment, Copenhagen Amendment, Montreal Amendment and Beijing Amendment
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on Conservation of Migratory Species of Wild Animals (the Bonn Convention, CMS)
- Agreement on the Conservation of Populations of European Bats
- Amendment of the Agreement on the Conservation of Populations of European Bats
- Convention on Wetlands of International Importance especially as Waterfowl Habitats (Ramsar Convention)

Protocol to Amend the Convention on Wetlands of International Importance especially as Waterfowl Habitats

- Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention)
- Convention on Long-Range Transboundary Air Pollution (CLRTAP) and its protocols:
 1. on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)
 2. on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent (1st Protocol on sulphur)
 3. concerning the Control of Nitrogen Oxides and their Transboundary Fluxes (NOx Protocol)
 4. concerning the Control of Emissions of Volatile Organic Compounds and their Transboundary Fluxes (VOC Protocol)
 5. on a Further Reduction in Sulphur Emissions (2nd Protocol on Sulphur)
 6. on Heavy Metals
 7. on Persistent Organic Pollutants
- Convention on the Transboundary Effects of Industrial Accidents
- Convention on the International Commission for the Protection of the Elbe River
- Convention on the International Commission for the Protection of the Odra River against Pollution

- Convention on Cooperation for the Protection and Sustainable Use of the Danube River
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- The Convention on Environmental Impact Assessment in a Transboundary Context
- UN Convention on the Law of the Sea
- Convention concerning the Protection of the World Cultural and Natural Heritage
- The Antarctic Treaty

Survey of the international environmental agreements that have already been ratified by CR but have not yet come into force for CR:

- Kyoto Protocol to the UN Framework Convention on Climate Change (CR has been a Party since 2001)
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (CR has been a Party since 2000)
- Stockholm Convention on Persistent Organic Pollutants (CR has been a Party since 2002)
- The Amendment to the Basel Convention (CR has been a Party since 2000)
- Protocol on Water and Health (CR has been a Party since 2001).

Survey of international environmental agreements that CR has signed but not ratified:

- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention)
- Protocol to the Convention on Long-range Transboundary Air Pollution (CLRTAP)
 8. to Abate Acidification, Eutrophication and Ground-level Ozone
- European Landscape Convention
- Protocol on Environmental Protection to the Antarctic Treaty
- Protocol on Pollutant Release and Transfer Registers (PRTR) to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters
- Protocol on Strategic Environmental Assessment to the Convention on Transboundary Environmental Impact Assessment in a Transboundary Context
- Framework Convention on the Protection and Sustainable Development of the Carpathians

Survey of Bilateral Agreements

- Agreement between the Government of the Czech and Slovak Federative Republic and the Government of the Kingdom of Belgium on Cooperation in Environmental Protection
- Agreement between the Federal Committee for the Environment of the Czech and Slovak Federative Republic and the Ministry of the Environment of the Republic of France on Cooperation in Environmental Protection

- Agreement between the Government of the Kingdom of Norway and the Government of the Czech Republic on Cooperation in Environmental Protection
- Agreement between the Federal Committee for the Environment of the Czech and Slovak Federative Republic and the Ministry of the Environment of the Kingdom of Denmark on Cooperation in Environmental Protection
- Agreement of cooperation between the Ministry of the Environment of the Czech Republic and the Ministry of Housing, Spatial Planning and the Environment of the Netherlands (VROM)
- Agreement between the Czechoslovak Socialist Republic and the Republic of Austria on Adjustment of Water-management Issues on Boundary Waters
- Agreement between the Government of the Czechoslovak Republic and the Government of the Republic of Austria on Cooperation in Environmental Protection
- Agreement between the Government of the Czechoslovak Republic and the Government of the People's Republic of Poland on the Air Pollution Control
- Agreement between the Government of the Czechoslovak Republic and the Government of the People's Republic of Poland on Water Management on Boundary Waters
- Agreement between the Government of the Czech Republic and the Government of the Republic of Poland on Environmental Protection
- Agreement between the Government of the Czech Republic and the Government of the Slovak Republic in the area of protection and creation of the environment
- Implementing Protocol to the Agreement between the Government of the Czech Republic and the Government of the Slovak Republic on the Cooperation in Environmental Protection and Management
- Agreement between the Government of the Czech Republic and the Government of the Slovak Republic on Cooperation on Border Waters
- Agreement between the Government of the Czech Republic and the Government of the Federal Republic of Germany on Cooperation in Environmental Protection
- Agreement between the Ministry of the Environment of the Czech Republic, the Ministry of the Protection of Environment, Natural Resources and Forestry of the Republic of Poland and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on Exchange of Data on Ground Level Concentrations of Pollutants in the "Black Triangle"
- Agreement between the Ministry of the Environment of the Czech Republic and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on implementation of a Joint Pilot Project in Environmental Protection "Municipal Waste Water Treatment Plants in Northern Bohemia"
- Agreement on Provision of a Contribution for Implementation of the Pilot Project of Environmental Protection "Article 35 – Mobile System for Remote Measurement of Air Pollution" between the LIDAR s.r.o., and also the Foundation of Charter 77 (as the initiator of the project) "Article 35" and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany
- Agreement between the Czech Republic and the Federal Republic of Germany on the Cooperation in Water Management on Boundary Waters
- Agreement on Provision of a Contribution for the Implementation of the Pilot Project of Environmental Protection "Waste Water Treatment Plant in Děčín, between Severočeská vodárenská společnost, a.s. – SVS a.s. and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany
- Agreement between the Ministry of the Environment of the Czech Republic and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on Implementation of the Joint Pilot Project in Environmental Protection in order to reduce Transboundary Environmental Pollution
- Agreement between the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany and the Ministry of the Environment of the Czech Republic on Implementation of the Joint Pilot Project on Environmental Protection "Environmentally friendly Co-Generation in the City of Cheb"
- Agreement between the Ministry of the Environment of the Czech Republic and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on Implementation of the Joint Pilot Project on Environmental Protection in the Czech Republic aimed at the Reduce Transboundary Environmental Pollution "Reconstruction and Modernisation of the Most-Chánov and Teplice-Bystřany Wwaste Water Treatment Plants"
- Agreement between the Ministry of the Environment of the Czech Republic and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on implementation of a Joint Pilot Project on Environmental Protection "Renewal of the Station for Measuring Water Quality in Obříství and in Zelčín and also the Central Laboratory in Prague" in the Czech Republic
- Agreement between the Ministry of the Environment of the Czech Republic and the Federal Ministry of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany on Implementation of a Joint Pilot Project on Environment Protection "Loučná Wind Park"
- Agreement on Cooperation in Environmental Protection between the Ministry of the Environment of the Czech Republic and the Ministry of the Environment and Water Management of the Republic of Bulgaria
- Memorandum of Agreement between the European Communities and the Czech Republic on Participation in the Action Program of the Communities to support NGOs Active Primarily in the area of Protection of the Environment

List of Abbreviations and Technical Terms

Acquis communautaire	Sum of the legislation of the European Communities (The European Union does not have legal subjectivity)
Agenda 21	Action program for the 21st century, document from the UN Conference on the environment and development in Rio de Janeiro, 1992
ALF	Agricultural Land Fund
ANPLC	Agency for Nature Protection and Landscape Conservation
AS CR	Academy of Sciences of the Czech Republic
ATB+RBATBE	Austria Bike and Ride System (Combined system of cyclist and public transport) Best Available Technique The best available techniques and their use in designing, constructing, operating, maintaining and removal of installations after the end of their lifetimes, which can be used in the industrial sector under economically and technically acceptable conditions Belgium
BDMW	biologically degradable municipal waste
brownfields	formerly built-up, not used or inadequately used industrial areas
CAFE	Clean Air For Europe (The European Communities Clean Air for Europe Program)
CBC Phare	Cross-Border Co-operation Phare (Phare program for cross-border cooperation)
CBD	Convention on Biological Diversity
CDC	Czech Dental Chamber
CEI	Czech Environment Inspection
CEI	Central European Initiative
CEU	Czech Environmental Institute
CFC	halogenated hydrocarbons – chlorofluorocarbons
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLARINET	Contaminated Land Rehabilitation Network for Environmental Technologies (European network of soil and groundwater decontamination experts)
CLRTAP	Convention on Long-Range Transboundary Air Pollution
CMS	Convention on the Conservation of Migratory Species of Wild Animals
cost-benefit analysis	cost-benefit analysis
CO ₂	carbon dioxide
CR	Czech Republic
CSO	Czech Statistical Office
DCPES	Domestic consumption of primary energy sources
DE	Germany
DK	Denmark
E	The environment
EBRD	European Bank for Renewal and Development
EC	European Community (European Communities)
ECE	Economic Commission for Europe UN Economic Commission for Europe (UN ECE)
Ecolabeling	Labelling of environmentally friendly products
EEA	European Environmental Agency
EEC	Environmental Education Centres
EEC	European Economic Community
EEC	European Economic Commission
EECONET	European Ecological Network
EEPA	Environmental Education and Public Awareness
EFP	Environmentally Friendly Product
EHAPE	Environmental and Health Action Plan for Europe
EI	Equivalent inhabitant
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIONETEL	European Information and Observation Network Greece
EMAS	Eco-Management and Audit Scheme - EMAS
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe
EMS	Environmental Management System
Environmental Acquis communautaire	EC environmental protection legislation
EP	European Parliament
EPEA	Environmental Protection Expenditures Account
EPR OECD	OECD Environmental Performance Review
ERDF	European Regional Development Fund
ES	Spain
ESPOO	Convention on Environmental Impact Assessment in a Transboundary Context

EU	European Union
EUR	Currency of the European Union
EURATOM	European Atomic Energy Community
EUROSTAT	Statistical Office of the European Union
EUSIS	European Soil Information System
FI	Finland
FR	France
GB	Great Britain
GEF	Global Environmental Facility
GHG, GHGs	Greenhouse Gases
GMO	Genetically modified organisms
GR	Greece
GDP	Gross Domestic Product
GNP	Gross National Product
HCFC	Hydrogenated chlorofluorocarbons
Health 21	Health for All in the 21st Century - long-term program to improve the state of health of the population
HM	Heavy metals (potentially from spent nuclear fuel)
HTSGU	Higher territorial self-governing units
IAEA	International Atomic Energy Agency
ICRP	International Commission for Radiation Protection
IEA	International Energy Agency
IFOAM	International Federation of Organic Agriculture Movements
IMF	International Monetary Fund
INTERREG	Assistance Program of European Union Funds
IPP	Integrated Production Policy
IPPC	Integrated Pollution Prevention and Control
IPR	Integrated Pollution Register
IR	Ireland
ISO	International Standardization Organization
ISPA	Instrument for Structural Policies for Pre-Accession
IT	Italy
IUCN	International Union for Conservation of Nature and Natural Resources
JI	Joint Implementation Projects
LA21	Local Agenda 21
LCA	Life-cycle assessment
LIFE	Assistance Program of European Union Funds
life-cycle-thinking	Approach encompassing the entire life cycle of a product
LPD	Land-use planning documents
LU	Luxembourg
MEAs	multilateral environmental agreements
MoA	Ministry of Agriculture
MoE	Ministry of the Environment
MoEYS	Minister of Education, Youth and Sports
MoH	Ministry of Health
MoI	Ministry of Interior
MoIT	Ministry of Industry and Trade
MoLSA	Ministry of Labour and Social Affairs
MoT	Ministry of Transport
MRD	Ministry for Regional Development
MW	megawatt
NAMEA	National accounting matrix including environmental accounts
NATO	North Atlantic Treaty Organization
NATURA 2000	European Ecological Network of Protected Areas
NEHAP	National Environmental Health Action Plan
NGO	Nongovernmental (Nonprofit) Organization
NH3	Ammonia
Ni-Cd	containing nickel and cadmium
NL	The Netherlands
NOx	Mixture of various nitrogen oxides
NO2	Nitrogen dioxide
NPF	National Property Fund
NPK fertilizer	Combined fertilizer containing nitrogen, phosphorus and potassium
OECD	Organization for Economic Cooperation and Development
OED	Old environmental damage

State Environmental Policy of the Czech Republic

OP	Operational Program
P+R	Park and Ride System
PAH	Polyaromatic hydrocarbons, syn. polycyclic aromatic hydrocarbons
PANAW	Protected area of natural accumulation of water
PCB	polychlorinated biphenyls
PCR	Parliament of the Czech Republic
PCT	polychlorinated terphenyls
PDA	Protected deposit area
PEP	PanEuropean Program for Transport, Health and Environment
PES	Primary energy sources
Phare	EU Assistance program for the candidate countries in Central and Eastern Europe for meeting conditions for accession to EU (Poland and Hungary Assistance in Restructuring Their Economies)
PIFFF	Properties intended to fulfil the function of forests
PLA	Protected Landscape Area
PLIS	Public Librarian and Information Services
PM10	Dust particles below ten microns in size
POPs	Persistent Organic Pollutants
PPP	Public-Private Participation in carrying out investment measures
PRTR	Pollution Release and Transfer Register
PT	Portugal
PVC	Polyvinyl chloride
RaD	Research and Development
REACH	Registration, Evaluation and Authorization of Chemicals
RES	Renewable energy sources
RESAP	Register of Emissions and Sources of Air Pollution
Retail	Creation of a wholesale and retail network for preferential purchase and sale of environmentally friendly products
RSRP	MoE River System Restoration Program
SAPARD	Support for Pre-Accession Measures for Agriculture and Rural Development
Screening	Technical consultations with the European Commission in relation to harmonization of the legislation of the candidate countries with EC law
SD, Sustainable development	Satisfying the needs of society without preventing future generations from satisfying their needs. Development that balances economic, social and environmental standpoints.
SE	Sweden
SEA	Strategic EIA – see EIA
SEF CR	State Environmental Fund of the Czech Republic
SEP CR	State Environmental Policy of the Czech Republic
SEVESO II	Directive on prevention of serious industrial accidents
SO ₂	Sulphur dioxide
SO _x	Mixture of various sulphur oxides
SP EEA CR	State Program of Environmental Education and Public Awareness in CR
SMW	Solid municipal waste
SR	Slovak Republic
STRILDG	Silva Tarouca Research Institute for the Landscape and Decorative Gardening
SWPP	Small water power plants
TEMPUS	EU Education and Training Program
TGM WMRI	T. G. Masaryk Water Research Institute
TSESUK	Territorial Systems of Ecological Stability United Kingdom
UN	United Nations Organization
UNCED	United Nations Conference on Environment and Development
UN CSD	United Nations Commission for sustainable development
UN FCCC	United Nations Framework Convention on Climate Change
UN-ECE	UN Economic Commission for Europe
UNEP	United Nations Environmental Programme
UNDP	United Nations Development Programme
UNSCEAR	UN Scientific Committee on the Effects of Atomic Radiation
USD	United States of America dollars
UV-B	Harmful B component of ultra-violet solar radiation
VOC, VOCs	Volatile Organic Compounds
WHO	World Health Organization
win-win	A situation that is advantageous for all parties
WPP	Wind power plants
WTO	World Trade Organization
WWTP	Waste water treatment plants
6.EAP	6th EC Environmental Action Program (approved on January 24, 2001).