Ministry of the Environment

Bulgaria's Road to Accession: The Environmental Challenges

THEMATIC REPORT

DANCEE

Danish Cooperation for Environment in Eastern Europe
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Table of Contents

1. Introduction

The enlargement process of incorporating Candidate Countries from Eastern and Central Europe has taken a significant step forward during the Danish presidency of the EU. During the Copenhagen European Summit in December 2002 a major milestone was reached in completing the enlargement process. At the summit the accession negotiations were concluded with ten countries agreed entry by May 2004 after national acceptances.

The summit reaffirmed the irreversibility of the accession process for Bulgaria and Romania. The objective is to conclude the accession negotiations so that the countries can become members by 2007. The summit recognised the progress in meeting the accession criteria so far but underlined also that major reforms still need to be implemented. A roadmap put forward by the Commission before the summit now provides Bulgaria and Romania with clearly identified objectives and gives each country the possibility of setting its own pace for the accession process. The summit stressed the importance of the countries stepping up their preparation, including fulfilling and implementing the commitments undertaken.

The environmental chapter is one of the outstanding areas where the Bulgarian Government will have to deploy extra effort in order to meet the necessary criteria. Bulgaria has already made significant endeavours in putting the legal framework in place and implementing EU standards and practices through action programmes. However, the scale of the environmental problems in Bulgaria and the general barriers facing transitional economies pose a demanding set of challenges for the country.

The contents of this report have been requested by the Bulgarian environmental authorities in the co-operation with the Danish Ministry of Environment as a rounding of the Danish-Bulgarian efforts. The purpose of the report is to illustrate the status of the environment and indicate possible solutions to the problems.

Against this background, the present project has been commissioned with the following objectives:

1. To prepare a thematic, strategic analysis for Bulgaria, identifying the key problem areas and challenges to be addressed during the pre-accession phase relating to implementation of the EU environmental acquis and to environmental protection and sector integration in general;

2. To develop a common understanding in the Ministry of Environment and Water and the other relevant sectoral ministries in Bulgaria concerning the key problems and challenges to be addressed in the field of environment, and the priority actions and assistance needed if they are to succeed in the accession process;

3. To provide a base of factual information and analysis for use by DEPA for informing the public on the above issues during the Danish Presidency.

The report is based on analysis of the DANCEE country programme, literature studies and a series of consultations with representatives of the relevant ministries in Bulgaria. These included the Ministry of Environment and Water, the Ministry of Health, the Ministry of Regional Development and Public Works, the Ministry of Energy and Energy Resources and the Ministry of Finance. The aim and the outcome have been discussed with Deputy Minister Fathme Iliaz of the Ministry of Environment and Water.

However, this report presents the findings and observations of the consultants. The conclusions and the outline of future challenges have also been prepared solely by the consultants.

2. The Status of the Accession Process

The History of the EU Accession Process

The accession process commenced in 1993 when Bulgaria signed the Europe Agreements covering trade-related issues, political dialogue, commitments to legal approximation and other areas of collaboration including industry, environment, transport, and customs. The agreement committed Bulgaria to bring its legal framework into compliance with the EU acquis, including environmental legislation.

At the Copenhagen European Council same year the criteria for becoming member were spelled out further. The main conditions were that the applicant country had to be able to demonstrate i) stability of institutions guaranteeing democracy, ii) a functioning market economy, and iii) the ability to assume the obligations and adherence to the aims of the political, economic and monetary union. In addition, adherence to EU environmental policies, including the international conventions to which EU is a party, had to be achieved.

The conditions were further detailed at the Madrid European Council in 1995, which stressed the need to create the conditions for the gradual, harmonious integration, particularly through the adjustment of the applicant countries' administrative structures. This was further emphasised in Agenda 2000, which underlined the importance of incorporating the EU acquis into national legislation effectively. It also placed an even greater importance of implementing it properly in the field, using appropriate administrative and juridical structures.

In practical terms, the accession negotiations are carried out on the basis of a thorough screening of the 31 chapters making up the EU acquis. One of these chapters deals specifically with the environment, while other chapters address energy and regional development. The negotiations aim to establish a consensus on the status of transposing and implementing the directives and associated administrative principles.

The general progress of the Bulgarian efforts in meeting the requirements can be illustrated by comparing the overall conclusions from the 1997 screening with the recent screening in 2002[1].

[1] CEC: 2002 Regular report on Bulgaria's progress towards accession

1997 Regular Report	*2002 Regular Report*
"Despite the progress that has been made, Bulgaria has neither transposed nor taken any action on essential elements of the acquis. Considerable efforts will have to be needed in the areas of environment …"	"Since 1997, Bulgaria has made good progress in most areas of the acquis. It has maintained a generally good pace of alignment of legislation throughout this period and has advanced on development of administrative capacity albeit at a slower pace. .. More attention needs to be paid to how laws will be implemented and enforced…. "

Bulgaria has met the obligations set by the Laeken European Council to open all negotiation chapters in 2002. By the end of September 2002, a total of 22 chapters had already been provisionally closed. However, these did not include the chapter on the environment or the related chapters on energy and regional development.

The EU Regular Report finds that implementation and enforcement of the acquis continues to constitute a major challenge for the future, in particular because of the need to increase administrative capacity, especially at regional and local level. Relevant investments in the environment sector have produced some positive results, but the Commission finds that much still remains to be done. Also, environmental considerations in the context of other economic issues are not sufficiently considered.

During the Danish presidency, the timetable for closing all chapters and meeting the general requirements of the EU acquis has been set to 2007. This gives Bulgaria four extra years to prepare the legal framework and the administrative systems for implementing the environmental chapter and related areas.

The Roadmap for Closing the Environmental Chapter

The adoption of the EU requirements within the environmental chapter will demand a concerted effort over the coming four years prior to accession. The European Commission recognises that Bulgaria has made steady progress in aligning its legislation with the acquis in most environmental sectors and in preparing for its implementation. Administrative capacities have improved somewhat and Bulgaria has achieved a generally good level of legislative alignment, but full implementation still poses a major challenge.

However, substantial upgrading of environmental infrastructure is required, and this needs to be spread over time. It follows that, for the most investment-heavy directives, extended transitional periods can be required. Consequently, extended transitional periods have been requested for nine directives, with proposed deadlines between 2010 and 2015.

The EU Commission has prepared a roadmap for Bulgaria covering the period up to accession. The EU – Bulgaria Association Council has accepted the roadmap and it has subsequently been established as the framework for meeting the accession criteria at the Copenhagen Council in December 2002.

The purpose is to indicate the main steps that need to be taken to be ready for membership. The roadmap is based on the principle that Bulgaria is going to meet all the accession criteria and the principle that all candidates participate on an equal footing. All are expected to join the EU on the basis of the same criteria, depending on their individual progress.

For the environmental chapter, the roadmap provides benchmarks against which Bulgaria's progress is to be monitored. These cover both alignment of legislation and development of administrative capacity.

To support the efforts in meeting the EU acquis, the Commission intends to increase progressively the EU's financial assistance by additionally 20 per cent in 2004, 30 per cent in 2005, and 40 per cent in 2006 compared to the average assistance in the period 2001 – 2003. The support will be tied to the completion of challenges identified in the regular reports prepared by the Commission and the Bulgarian Government.

The EU has recommended Bulgaria to concentrate its resources on the preparation of detailed directive-specific implementation plans together with associated financing strategies. These plans should take into account the available resources and the need for institutional strengthening. The road map states that Bulgaria should now focus its efforts in particular on;

- environmental impact assessment,
- waste management,
- nature protection,
- industrial pollution and risk management,
- chemicals and genetically modified organisms, and
- nuclear safety and radiation protection.

Before the 2007 deadline Bulgaria will have to complete the transposition of all directives and implement major parts. Exemptions are not given as to the implementation of the framework legislation on air, waste, water, impact assessment and access to information. Also the nature protection legislation on habitat and birds protection should be finally implemented, as should all product-related legislation. Finally, all new installations should comply with the new EU-transposed legislation.

Bulgarian Policy on meeting the Requirements

Bulgarian policy is to meet the obligations within the agreed time schedules. All EU directives prior to 31.12.1999 are to be transposed during 2003 at the latest. Where there are gaps, it is the opinion of MoEW that measures will be taken to prepare the relevant legislation. This includes engaging expatriate experts through the EU Phare Twinning programme and bilateral donor projects. The government continues to give high priority to the enactment of the transposed environmental legislation.

For directives after 1999, the policy is to transpose and implement these in line with the timeframes applied to the existing EU Member Countries.

The implementation of the new legislation is regarded as being a major challenge for Bulgaria. The strengthening of the associated administrative aspects will be assisted both by the general public sector reforms and by the planned recruitment of 519 new staff to the MoEW as approved by the Council of Ministers in June 2002.

The MoEW considers the implementation of investment-heavy directives to be proceeding well. However, the overall transition of the Bulgarian economy and the capacity of industry and local governments have to be taken into account. Compared to other accession countries Bulgaria starts from a relatively low baseline, having some of the poorest regions among applicant countries and using relatively old technologies in many industries.

3. Public Sector Administration

The public sector is performing a key role in preparing Bulgaria for implementation of the EU environmental acquis. This chapter identifies some of the key stakeholders, and discusses the reform initiatives taken by Bulgaria to help meeting its obligations.

The Public Sector's Role

The requirements for the applicant countries in the area of public administration are specified indirectly by conditions set in individual directives. In many areas 'good operational practices' have been developed internationally to assist in the transformation process. This applies, for example, to practices and procedures relating to the inspection and enforcement of environmental permits, which have been developed by the IMPEL network and the network for developing common practices for organising water basin management. However, there is no concrete set of requirements to which Bulgaria and the other applicant countries have to adhere. This means that it is ultimately down to the discretion of each country to demonstrate that it is developing the capacities and administrative systems to meet its obligations through public sector administration.

These obligations can be considered under two headings: i) the capacity to prepare, co-ordinate and carry out the accession process itself and ii) the capacity to implement the EU acquis and to operate effectively within the EU on an ongoing basis.

Over the last ten years, the Commission and bilateral donors, including the Danish assistance, have assisted in preparing the Bulgarian public sector for meeting these dual obligations. The most recent Regular Report by the Commission gives the following assessment of the progress achieved so far:

"Overall, and in view of Bulgaria's target date for accession, Bulgaria has achieved a reasonable degree of alignment with the acquis in many areas. Administrate capacity has also developed, although significant further efforts remain to be made. More attention needs to be paid to how laws will be implemented and enforced. In this regard, progress on the public administration and juridical reform needs to be sustained" (Regular Report 2002)

Outline of the main Executive Bodies

A structure for co-ordinating the European integration has been in operation for two years, and is being further strengthened by creating a Unit for European Integration within the Council of Ministers. The Council of Ministers holds monthly meetings on European integration, and a separate Ministerial Council of European Integration, also chaired by the Prime Minister, meets once or twice a month. There are two supporting units in the Council of Ministers and in the Ministry of Foreign Affairs. Additionally, there are working groups for each of the acquis chapters, including chapter 22 on the environment.

MoEW is the executive ministry as regards the environmental sector. The Executive Environmental Agency and 15 regional inspectorates for environment and water make up the monitoring, inspection and permitting system. In addition there are three directorates of national parks and four newly established Water Basin Directorates in Blagoevgrad, Varna, Plovdiv and Pleven.

The Ministry of Regional Development and Public Works implements the national policy in the area of territorial planning and public works, including planning of the water supply and sewerage systems. This ministry holds the National Expert Committee, which approves environment infrastructure projects, including the endorsement of feasibility studies involving public finance - including ISPA projects. The ministry is also the leading agency for regional and territorial planning, and co-ordinates (among other areas) the preparation of pilot Local Environmental Action Programmes and waste management planning for municipalities.

The Ministry of Health monitors the impact of the external environment and the working environment on human health. In particular the Ministry determines state policy for protecting the quality of drinking water. A regional network of 28 regional health inspectorates is linked to the Ministry.

The Ministry of Energy and Energy Resources was created one year ago, replacing the former State Agency for Energy and Energy Resources. The State Energy Efficiency Agency is attached to this Ministry, and has now been turned into an executive agency. A State Energy Regulatory Commission was created in 1999, with the main task of issuing licences to operating power companies. Since the beginning of this year, it has also assumed the leading role in setting prices and tariffs for power, natural gas and district heating.

The Ministry of Agriculture and Forestry carries out activities relating to the protection, restoration and management of agricultural land and forests. A department for agro-environment is responsible for planning and executing environment related policies covering organic farming, the protection of vulnerable zones etc. The ministry is partly accredited to managing the SAPARD programme, according to the extended decentralisation implementation system (EDIS).

The Ministry of Transport and Communication regulates the control of pollution from the transport sector by preparing norms for harmful emissions from vehicles, and also controls their implementation.

The Ministry of Finance provides funding from the state budget for priority environmental investments, and the ministry also allocates funds to the local government budgets. In co-operation with municipalities, the ministry sets fees

and tariffs for water and solid waste management services, although this aspect is in the process of being transferred to an independent regulatory body. The Ministry of Finance holds the National Fund, which provides public co-financing to pre-structural projects, and is assigned as the National Authorising Office for approval of EU funded projects.

The future management procedures for EU Structural and Cohesions Funds have now been proposed. The Ministry of Finance will be responsible for co-ordinating the programming of Structural Funds assistance. In addition, it will become the managing authority for the Community Support Framework and for the Cohesion Fund. A number of Operating Programmes (OP) are envisaged: a regional OP will be managed by MoRDPW, while an OP for rural development will be managed by MoAF. The payment authority for all Structural Funds and the Cohesion Fund will be the Ministry of Finance, and this will be executed through a Directorate National Fund.

Public Sector Reforms

A reform of public administration aims partly at further strengthening of the capacity to prepare for EU membership and for effective administration after EU accession. This reform is spelled out in the Strategy for Modernisation of the State Administration that was adopted in June 2002. Individual measures are designed to strengthen the administrative capacity to implement the EU acquis and also to strengthen the administrative capacity for managing the Structural Funds. The timeframe for the implementation of these reforms is 2002 to 2005.

An inter-ministerial working group on administrative capacity to implement the acquis has recently been formed. This will help to strengthen administrative structures for implementing EU directives, and to develop the instruments and capacity to make full use of EU funds. MoRDPW is the leading ministry, with participation of MoEW and MoAF.

In 2001 a report was prepared for MoEW on the need for administrative strengthening of the environmental institutions. The main conclusion was that more than 600 experts should be appointed at both national and regional level during the period up to 2005, if the ministry was to discharge its obligations effectively.

As an immediate result, five extra persons have been appointed to the co-ordination unit for ISPA projects. In addition, a department for issuing integrated permits in accordance with the IPPC directive has just been formed, as have four new Water Basin Directorates.

In line with this strategy, the Council of Ministers approved a decree enabling the recruitment of 519 new experts in the MoEW by the beginning of 2003. The extra staff is to be deployed at both central and regional levels. Sixty-two persons

are to be placed at MoEW, 47 in the Environmental Executive Agency, 180 at the Regional Environmental Inspectorates and finally 230 persons at the River Basin Directorates.

In March 2002, a new department on programming and co-ordination was established within the General Directorate for Regional Policy of MoRDPW. Within this department, 25 experts covering the 28 districts were appointed. Among other things, they will assist in the programming and implementing of future EU Structural Funds. They will also have the role of improving the co-ordination between MoRDPW and the district authorities. In addition, a new unit for managing ISPA projects has been formed, with a staff of six persons.

Salary levels are low and human resource management is considered weak by the EU Regular Report. Although civil service salaries were increased by ten per cent in 2002, they remain low and there is a shortage of qualified staff to ensure sustainability of the reforms. The Civil Service Law defines the salary system, and currently this does not take sufficiently into account the jobs, skills and performance of the individual civil servants.

The Council of Ministers has recently adopted a Strategy for the Training of Civil Servants. This covers introductory, continuous and specialised training for civil servants. Training on implementation of EU legislation is stressed. In line with this, the Institute for Public Administration was inaugurated last year. By the end of 2001 about 1,500 civil servants had attended courses.

Further Challenges

The 2002 Regular Report concludes that Bulgaria still needs to make sustained efforts to develop sufficient administrative and juridical capacity to implement and enforce the acquis. Continuing horizontal reforms of the public administration is needed as well as capacity building in the areas of environment and regional development. Further efforts are also required to establish the necessary administrative capacity for managing EU funds. The importance of the public sector reform strategy is recognised by the Bulgarian Government but it is the EU Commission's opinion that serious efforts are required to ensure an efficient, transparent and accountable public administration. The EU Commission encourages Bulgaria to further develop its reform strategy by setting up a concrete action plan in 2003.

It is evident that a concrete action plan for strengthening the public sector will also provide the basis for identifying gaps where bilateral intentional assistance is needed. Bilateral donors, including the Danish assistance, have during the last ten years been very active.

The most needed areas of support are related to the staff increase at regional and local levels of the environmental administration. Here there is a concrete need for

setting up a capacity building strategy and in turn to assist in setting up large-scale training programmes for new staff. There are also immediate needs for bringing in place expertise in bottleneck areas in a flexible manner, for instance the expertise to co-ordinate the implementation of environmental infrastructure projects funded by ISPA, IFIs and local means.

4. Status on the Implementation of the Environmental Acquis

4.1. Water Quality

Status of the Environment

The period since 1989 has been characterised by significant reduction in discharges to surface water, resulting in an improvement of their quality parameters. This improvement is due to reduced industrial activity and the phasing out of some industrial enterprises, as well as to the emerging effects of improving the wastewater collection and treatment systems. Despite the positive changes registered in water bodies, there are still considerable deviations in water quality for such indicators as ammonium, BOD5 and dissolved oxygen. Dangerous chemicals are also found in high concentration in some watercourses down stream of industrial installations.

The provision of wastewater treatment is incomplete, and the introduction of modern secondary and tertiary treatment is only just starting. Sixty-five per cent of the population is connected to sewerage systems. The status of the sewerage systems has not generally been assessed. However, it is expected that the main networks are not adequate, and that their quality has deteriorated immensely. Only 60 per cent of the wastewater is currently subject to any kind of treatment. Industrial wastewater discharged to surface water bodies accounts for 35 per cent of total discharges. The processing industries (chemicals, oil refining and steel industry) contribute about 70 per cent of this industrial wastewater. Thirty-eight out of 52 urban WWTPs have biological treatment, and these plants account for about 50 per cent of the discharged water. Only 25 of the 104 settlements with more than 10,000 inhabitants have urban WWTPs.

Status of Transposition

The Water Act of 1999 transposes the main principles of the Water Framework Directive. It orders the regulation of water resources and quality through four River Basin Districts, and identifies the competent authorities for river basin management. The principles for permitting, inspections and monitoring are also established. Some amendments are expected, mostly relating to the preparation and implementation of water basin management plans.

The water quality objective-oriented directives have been transposed either directly by the Water Act or through secondary regulations. This applies to the Regulation on the Quality of Water Intended for Human Consumption, the Regulation on the Research, Use and Protection of Groundwater, and the Regulation on the Quality of Fish and Shellfish water, while a Regulation on the Quality of Bathing Water is still under consultations.

Also the emission-control directives have been subject to transposition. The Urban Wastewater Directive is introduced through the Regulation on Setting Indicators and Standards for the Contents of Harmful Substances in industrial Wastewaters Discharged into Sewerage Systems and the Regulation on Requirements for Admissible Contents of Harmful Substances in Wastewaters from Urban Wastewater treatment Plants and from various Types of Production Activities. Also the Nitrates Directive is introduced through the Regulation on Protection of Water from Nitrate Pollution.

Status of Implementation

The implementation of the requirements of the regulation on the discharge of dangerous substances is to be met before 2007. At present a full review of the sources of pollution has been completed, and most apparatus required by the Environmental Executive Agency and the Regional Environmental Inspectorates is in place. For large industrial complexes, this regulation will be co-ordinated with the implementation of the Directive on Integrated Industrial Pollution Prevention and Control.

The designation of sensitive water bodies is scheduled for 2003. The regulation of these water bodies and nearby territories will be further extended through the river basin management plans. In addition, the designation of vulnerable zones is to be prepared in line with the Nitrate Directive. Owing to the low level of chemical fertiliser in use, the contamination of groundwater by nitrates is not considered to be acute. At the moment the implications of such regulations are difficult to establish. However, co-ordination with the agro-environmental department of MoAF has been established, and programmes within SAPARD are expected to promote codes of good farming practices.

Four river basin directorates were established during 2002, with staff transferred from the Regional Environmental Inspectorates. Additional staff is to be transferred from the regional inspectorates on an incremental basis, and on top of that some 250 staff are to be recruited for the directorates as part of the general capacity building programme.

The issue of permits is delegated to the new directorates, while monitoring and enforcement are intended to rest at the regional inspectorates in order to separate these functions. The emission limit values are on par with those of the EU, and a mechanism has been established for setting up individual emission norms for point pollution sources.

The full implementation of the Water Framework Directive is scheduled to be in line with the timeframes given to EU Member States. The main challenge is to bring the River Basin Directorates into operation, and to prepare river basin management plans according to the principles of the directive. The Iskar, a tributary of the Danube, has been designated as pilot region for applying planning

and management tools. These will be obtained from the EU network on Common Implementation of the Water Framework Directive, which will submit tools and recommendations for EU and accession countries by the beginning of 2003.

Several EU Phare Twinning projects are assisting in transposing and implementing the Water Framework Directive. With the assistance of a twinning project, the organisational structure has been designed indicating the service levels and tasks for the four water basin authorities. The project has prepared a new structure for permits for the use and discharge of water. The preparation of training materials and the conducting of training for regional environmental inspectorates have also been addressed. Further Phare Twinning assistance to enhance the capacity of the new river basin bodies is scheduled for the 2002 programme. This will be complemented by a planned DANCEE project on assisting the Water Directorate for the Black Sea region to set up management and investment plans.

The implementation of organisational structures given in the framework directive and the daughter directives are to be realised before 2007, and subsequent planning activities will be in line with the timetables for the EU Member States. However, the Bulgarian Government has requested an extended transitional period for implementing the investment heavy directives, i.e. the Urban Waste Water Directive.

The current plan for the construction of wastewater treatment facilities stipulates that 36 plants are to be constructed before 2006. So far the construction of ten plants has commenced. However, an additional 70 plants for towns with more than 10,000 PE and additional 200 plants for small towns between 2,000 and 10,000 PE are still to be constructed. DANCEE has equipped three wastewater treatment plants with mechanical and biological treatment, as well as sludge dewatering equipment. A Swiss donor has equipped two plants, of which one is co-funded with the Danish Ministry of Environment.

The implementation of the drinking water and wastewater action programmes is estimated to be the most costly of the environmental sectors. The investment costs alone will amount to Euro 2.0 – 3.4 billion depending on the coverage of tertiary wastewater treatment and the extent to which old distribution networks are replaced. This amounts to 36 – 40 per cent of the compliance costs for meeting the EU environmental acquis. These cost estimates are based on the price assessment given in the first set of action programmes. Thus, there is a need for updating these.

Directive	***Extended transitional period***
Urban wastewater treatment, above 10,000 PE	01.01.2011
Do, between 2,000 and 10,000 PE	01.01.2015

The action plans for construction of collection and wastewater treatment facilities were prepared in 1999. There are different plans for modernising the sewerage system, for the water supply system and for wastewater treatment. The planning process has been complicated by the fact that several authorities are involved. MoEW is the planning authority for wastewater treatment, while the planning authority for water supply and sewerage networks rests with MoRDPW. The municipalities are investment and implementation authorities. In addition, the operation of water services is usually undertaken by regional water utilities directed by MoRDPW.

This fragmentation has obstructed integrated planning for the full water cycle, through which improvements in water supply systems should be immediately taken into account technically and financially when other water facilities are being developed. A DANCEE project assisting in preparing one ISPA application for the water sector has demonstrated the gains of integrated planning, and it seems that more ISPA applications in future will consider the full water cycle. Also the current revisions of the national action programmes are co-ordinated to a higher extent than previously.

A policy to engage private sector participation in the investments and operation of water utilities was introduced by the middle of the 90s. The engagement of the private sector may enhance the management of the utilities, and will also potentially improve the creditworthiness of projects – so allowing the EIB and other IFIs to play a more prominent role in financing the necessary investments. Assets would to be owned in partnership between the municipalities and the state, while the operation is contracted to concessionaires. So far only Sofia water utility has contracted a concessionaire, but private sector participation in Varna and Shuman has been pending for several years. The process of preparing the water sector for private sector participation is continuing. Currently a study is analysing the options for establishing an independent regulatory body in this field.

Also the application of the ISPA programme has been somewhat slow. Until now the EU has approved four projects, but no contracts have yet been signed with any of the contractors. A further eleven projects are in the ISPA pipeline.

There are probably several reasons for the slow pace of implementation. Several governmental bodies are involved, and thus a broad stakeholder circle needs to be engaged – many with new functions given to them only during the last years. The approval of ISPA projects has also been hampered by cumbersome procedures. Sometimes these are subjected to adjustments during the course of project preparation. As an example, the threshold value for low-income affordability has been altered for projects where feasibility studies were already completed. This put a stress on project preparation, and sometimes led to the unanticipated use of foreign technical assistance.

The municipalities themselves have undergone major reforms aimed at giving them more political and economic autonomy. While Sofia municipalities and other larger cities hold most of the staff capacity to meet the water management obligations and to take active part in the planning and implementation of the modernisation programmes, it is obvious that small municipalities with few professional staff resources face major shortcomings.

This may be part of the reason why the piloted five-year Local Environmental Action Programmes prepared by municipalities have had few links with national planning and the selection of water sector investments. However, the potential for these local plans to strengthen the horizontal planning at municipal level is recognised. The plans may be instrumental in local priority setting and in balancing between investments in different sectors.

Major Challenges

The roadmap for EU accession focuses on implementation of the investment heavy directives, in particular the urban wastewater directive. Improved administrative capacity of regional environmental inspectorates and the newly formed River Basin Directorates is also needed.

The EU Commission is committed to provide further assistance to the new river basin directorates. In the past bilateral donors have supplemented the EU programmes. It is found that there still is a tremendous need for bilateral donor assistance.

The practical planning and co-ordination of investments as carried out by project implementation units in MoEW and MoRDPW needs to be strengthened. Moreover, action plans need to be updated with attainable goals within agreed transitional periods. This will entail a revised analysis of how to engage private sector financial sources, and also a phased implementation plan giving priority to projects with the highest environmental benefits.

Given the low affordability in some regions, the application of low cost technical solutions may also be considered. In this area there is certainly scope for additional pilot and demonstration projects.

4.2. Air Quality

State of the Environment

Shortly after the transition in 1989, the Bulgarian Government identified improvement of air quality to be a main priority area. As a consequence the country was one of the first in Central and Eastern Europe to institute environmental action plans. A series of action plans was prepared to address different aspects of air quality. The general goal was to meet air quality standards and emission limits agreed upon in international treaties and conventions. Concrete targets were also set, including reducing the emission levels for sulphur dioxide, heavy metals and

persistent organic pollutants by 50 to 80 per cent from 1990 to 2010. Later, when EU accession became a priority, the requirements in the EU environmental acquis became the focal point for the government policy on air quality.

Air quality has improved significantly during the last decade, with sulphur oxides and nitrogen oxides both being reduced by about 35 per cent. This is partly due to contraction of economic activity and partly due to environmental improvements. Sulphur oxides in particular are still very high in terms of emissions per capita with five times higher emissions than the OECD Europe average. When economic activities are resumed, it is likely that the gained effect may vanish if air pollution is not decoupled from economic activity.

High levels of air emissions pose high risks to human health and the environment. The admissible concentration limits are exceeded in many of the densely populated regions. There are 14 locations defined as hotspots with an extraordinarily high level of air pollution. These are mainly in large urban centres and in regions where large industries are emitting pollution. In some cases, limit values have been exceeded more than three times.

About 2,500 enterprises are recorded as polluting the ambient air with harmful substances. The energy sector is the biggest source of this pollution. The sector generates 83 per cent of the national load of sulphur dioxide, 30 per cent of nitrogen dioxide, and 41 per cent of particulates. The energy sector is also the main contributor of ferrous emissions and non-ferrous metals, with 32 per cent of mercury emissions originating from thermal power plants. Combustion processes are also the main source of dioxins and furans. Concerning VOC compounds, road traffic contributes to 42 per cent while industry accounts for 12 per cent of the emissions. Traffic also contributes 72 per cent of methane emissions.

Status of Transposition

The transposition of the EU legislation in the air sector was started at an early stage. The Ambient Air Quality Framework Directive of 1996 was actually partly transposed in the Clean Air Act of the same year. With the amendments in 2000, this law encompasses nearly all the provisions of the directive.

Most of the daughter directives have also been transposed into the Clean Air Act and its sub-ordinate regulations. This includes the Directives on limit values for Sulphur Dioxide, Nitrogen Dioxide and Related Substances, as well as the Volatile Organic Compounds Directives and the Directives on Petrol and Diesel Fuels Quality. The remaining legislation is to be transposed before the overall deadline of 2003.

Status of Implementation

The EU requirements concerning air quality assessment and management as given in the air quality framework directive are to be fully implemented during the coming five years.

An ambient air quality-monitoring programme is in place, with sampling and analytical procedures more or less in compliance with the EU guidelines. Bulgaria was incorporated in the Monitoring and Information network for EU concerning air pollution (EUROAIRNET) in 1997. Forty-two measuring points from the MoEW's national system of environmental monitoring are included in the European network. Information is collected and processed according to set practices. The challenges here are mainly to enlarge the monitoring network and to introduce automatic data processing and more advanced apparatus, so allowing the inspectorates and the Environmental Executive Agency to apply ISO and EN testing methods and thereby to be accredited according to international standards.

In principle, the management of air quality data is in place. The Environmental Executive Agency has set up an information database and public information on air quality is provided by regular bulletins. However, the MoEW still sees information dissemination as one of the areas where improvements are most needed. This includes compilation and dissemination of technical data on air quality in a systematic manner. Other requirements relate to pedagogical dissemination of air quality and other environmental information to teachers and to their secondary and primary school pupils.

Preliminary assessments are carried out for zones where the air quality is violating the set limits. The Environmental Executive Agency and the regional environmental inspectorates have already identified zones where different levels of air quality standards are to be imposed. The zones for which the action plans are to be prepared are currently being selected.

Both the planning and enforcement of air quality measures need strengthening. A starting point can be taken in a recently completed EU Phare Twinning project aimed at preparing and implementing an air quality management plan for attaining air quality limit values in an urban area where those values have now been significantly exceeded. Pernik was the test case, being the town with the poorest air quality in comparison with the other hotspots.

Thus, the EU requirements for setting up the planning and monitoring system for air quality control is in progress and is likely to be completed before 2007. The compliance with the concrete air quality norms in the field is much more challenging. The actions to be taken will address a wide range of economic sectors. Bulgaria will need to manage pollution from vehicles, fuels, power plants, and large industrial and small stationary sources.

The implementation of the directive on sulphur dioxide and other substances is linked to the air quality management planning for effected regions. In some zones the plans of action to improve the air quality will be relatively easy to implement, but more commonly the remediation is linked to the restructuring of large

combustion or industrial facilities for which an extended transitional period is also to be requested.

Managing pollution from vehicles remains a significant problem due to an ageing car fleet and an increasing number of vehicles. Modernising the car fleet and imposing better emission controls are aspects of the remediation. Other aspects are to maintain and even expand the current system of public transportation. A few donor projects have aimed at improving the public transportation systems, including an EU Phare Twinning project on modernising public buses in Sofia, but in general the emphasis on reducing air emissions through better public transportation seems to lack high priority from both the government and donors.

The energy sector is the biggest source of long-range air pollution, as indicated already. The heavy pollution is caused by a combination of poor energy sources such as lignite and coal with high sulphur content as well as obsolete combustion technologies. The Danish Ministry of Environment has been one of the donors demonstrating better combustion technologies and flue gas cleaning technologies at thermal power plants with significant environmental benefits. In two projects, The Danish Ministry of Environment and a Swiss donor have contributed jointly to air pollution reduction. However, modernising this sector is impeded by slow implementation of privatisation programmes, with plants being in an intermediate stage where donor funding is not applicable and private environmental investments are premature. This is a contributory factor to why donors in general and the ISPA programme in particular refrain from supporting investments in projects on improving air quality directly. At present, only one air quality project has been proposed and this has been put on hold until the restructuring of the plant in question has been completed.

Below is a list of directives for which extended transitional periods are requested:

Directive	***Extended transitional period***
Reduction of sulphur content of liquid fuels	01.01.2015
VOC emissions resulting from storage and distribution of petrol	01.01.2010
VOC emissions from solvents	01.01.2012
Sulphur dioxide, nitrogen dioxide and oxide of nitrogen, particular matter and lead in ambient air	01.01.2010

Measures to control VOC emissions resulting from storage, loading and unloading as well as transport of petrol are addressed by the first VOC directive. Technical measures have been taken to introduce safe unloading of mobile containers

at terminals. Measures have also been taken to reduce petrol loss from mobile containers during transport. All terminals and service stations shall be subject to environmental impact assessments during the coming five years. Detailed investment plans will be derived from these assessments. The overall cost of implementation is estimated to Euro 300 million of which nearly all is to be provided through private means.[2]

Reduction of the sulphur content in fuel will bring substantial improvements of the air quality. This is the subject of the Sulphur contents directive. The amount of sulphur in diesel is about 0.20 per cent in comparison with the EU standard of 0.05 per cent. The contents in heavy fuels may currently amount to as much as 3 per cent. A gradual harmonisation to the EU standards is expected. A constraining factor is the inability of the national refinery Lukoil Neftochim to produce according to stricter standards. The current process technology has to be replaced completely. The cost of reconstruction is estimated to Euro 1.5 billion and will last for five years.[3] This will have significant implications for the economy of Bulgaria as the refinery contributes to as much as 17 per cent of the GDP.

Major Challenges

The scale of the efforts is reflected by the fact that compliance costs will account for 40 to 55 per cent of the overall cost of complying with the environmental acquis.[4] As the private sector, including the energy and manufacturing industry, is going to meet more than half of these costs, it is evident that realisation will be closely linked to the overall structural reforms of the Bulgarian business sector. However, investment by the public sector in air quality improvements is also to be increased. Especially the current low level of ISPA support needs to be reviewed.

For the directives requesting extended transitional periods there is a need for establishing realistic and attainable action plans. Technical studies on the problems and the remediation activities need to be supplemented and realistic financing strategies are to be applied. Also the horizontal planning (municipal plans) for the hotspot areas needs to be targeted.

Further assistance to the monitoring, inspection and enforcement regimes is generally needed. The assistance may address concrete measures related to upgrading of the analytical apparatus but also staff training in the regional inspectorates is needed.

[2] *EU Monitoring Report 2002*
[3] *MoEW information*
[4] *World Bank Dual Challenge Study, 2001*

4.3. Solid Waste Management

Status of the Environment

In Bulgaria, municipal waste has traditionally been deposited at dumpsites. Some 2,500 uncontrolled landfills have historically provided this capacity. At present 680 landfills are in operation, but only 2 of these comply with the EU requirements. Major towns and cities have been provided with organised waste collection. The rural housing making up about 23 per cent of the population has been without waste collection and disposal services.

Industrial waste has been land-stored at the sites belonging to the enterprises, and the rest has been deposited at municipal landfills. The thermal power plants and chemical industries are the biggest waste generators. Industrial waste generation makes up about 75 per cent of all waste generation. The past statistics have though been somewhat inaccurate, as reporting was not systematically imposed. Data on waste from mining and primary processing has been particularly scarce.

Hazardous waste has either been deposited at the site of the producers or it has entered into the municipal and industrial waste streams. A few incineration plants have been in operation, but without meeting EU requirements. Current statistics are based on the National Catalogues on Hazardous Waste, which are going to be replaced. 1.3 million tons was reported for 1998. About 30 enterprises accounted for more than 90 per cent of hazardous waste production; altogether 550 enterprises were registered as hazardous waste producers. The huge amount of waste already stored at uncontrolled landfills and the leakage from tailing ponds from the mining industry is posing a major challenge.

Status on Transposition

Waste management is regulated by the 1997 Law on Reduction of the Harmful Impact of Waste on the Environment. The law introduces the concept of a waste management hierarchy and the provisions for setting up a disposal and waste recovery system as stipulated in the EU Waste Framework Directive. Full compliance with the directive will be achieved later this year, when drafted amendments to the law are enacted.

The EU Hazardous Waste Directive is almost fully transposed. Only the requirements regarding reporting to the European Commission is pending, and is to be transposed upon accession.

Incineration of waste is regulated through several EU directives, of which the Hazardous Waste Incineration Directive and the Municipal Waste Incineration Directive covering new plants are fully transposed. There are eight smaller incinerators in Bulgaria, but these will be closed during the coming years except for one hospital waste incinerator meeting EU standards that is currently under construction with DANCEE assistance.

The EU Landfill Directive was partly transposed in 2000, while gaps related to procedures on waste reception, waste categorisation, reporting on land filling activities as well as procedures for closure of dumpsites are scheduled to be transposed in 2003.

The remaining transposition themes are related to the EU Packaging Waste Directive and the Directive on Disposal of PCBs and PCTs. Two EU Phare projects address these issues, and a full transposition is expected within the overall deadline of 2003.

Status on Implementation

The current national waste management plan takes all the EU waste management principles into account. A list of some 60 investments and actions has been stipulated. The main challenge for the coming revised plan is to prepare a priority list that can realistically be financed and which can meet the requirements of the investment heavy directives – in particular the landfill directive.

It is likely that the regional and municipal planning that is now at an embryonic stage will serve as an instrument to facilitate better co-ordination between national waste management planning and the priorities of the districts and municipalities. Dutch and British donors have assisted in preparing pilot versions of municipal waste management plans.

The permitting regime for municipal and hazardous waste has been designed and is in the process of being implemented. The MoEW is the competent authority with the regional environmental inspectorates serving as controlling bodies and the Environmental Executive Agency as the monitoring and co-ordinating body. Permits are to be issued to waste generators on a time-limited basis. Waste management operators are also regulated through permits. In case of landfills, permits are issued jointly with the mayor of the concerned municipality. A system for monitoring waste management activities and for reporting and keeping a monitoring system has been designed according to EU requirements as well.

The principle of "polluters pay" has been implemented to the extent that waste generators are to pay for the collection and safe treatment of all types of waste. However, municipal and national budgets are expected to co-finance investments in landfills and other facilities. The low affordability of households outside the big cities and the pressure on the public budgets in general are major constraining factors when setting up environmental financing plans in this field.

Generally the modalities for organising the waste management, including private sector participation in operating and owning of waste management facilities, are not yet fully developed. Currently the ownership of landfills rests with the municipalities, but the regulatory system is already providing for private waste management operators.

So far recycling of waste has not been subject to systematic efforts, although valuables are reused by informal activity. Waste minimisation has not been implemented in a structured manner either. However, projects are prepared for construction of reloading centres along the Black Sea coast.

Extended transitional period is requested for the following directives:

Directive	*Extended transitional period*
Landfill of waste directive	01.01.2015
Packaging of waste directive	01.01.2012
Disposal of PCBs and PCTs directive	01.01.2010

According to estimates based on cost included in the national waste management plan and compiled by the World Bank, the investments and the operating and maintenance costs associated with the compliance of waste-related directives will range between Euro 850 – 1,150 million and Euro 93 – 132 million respectively. Derogation of the Packaging Waste Directive could reduce the costs by Euro 400 million.

The implementation plans for the packaging waste and the PCB and PCT directives are to be prepared with assistance by two EU Phare Twinning projects. At this stage it is unclear as to whether the transitional periods can be shorted.

It is expected that at least 56 regional landfills will be constructed in order to cater for the national demand for controlled landfilling. The preparation of these projects should be faster and the number of projects should be scaled up dramatically if this target is to be achieved. At the present time 14 of these landfills are already constructed or under construction. This includes an inter-municipal demonstration project funded by The Danish Ministry of Environment in Vratza and Metza municipalities that combines the construction of a new landfill according to the landfill directive and the introduction of waste collection and recycling management plans.

The application of the ISPA programme has been relatively slow, and until now no project has reached the construction stage. A package of six regional landfills and closure of numerous dumpsites was identified for ISPA funding in 2000, and two years later the project has now matured with Danish assistance to the point where construction works can be contracted. The main barriers in preparing such projects are forming suitable networks for co-operation between municipalities, which have to agree on a common landfill and in turn set up common management plans.

The safe disposal and management of hazardous waste is still at an early stage, and the aim is to establish one national and four regional deposit facilities that will be funded by ISPA. This project has not yet been approved. In connection with the feasibility study, a system for registering hazardous waste streams has been prepared with Danish assistance. A permitting system is in the process of being implemented, but an industrial association has raised some concerns as to the rigidity where even the smallest amount of chemicals is subject to a permit.

Major Challenges:

As stated by the EU Commission a key task is to prepare realistic action plans for the directives where extended transitional periods have been requested. These plans have to match the EU requirement with the financial and personnel resources available.

An immediate challenge lies in improving the efficiency with which ISPA projects are selected and implemented. In particular, the present procedure for the selection and planning of regional landfills including hazardous waste treatment facilities seems to pose a barrier. The proposed ISPA project for construction of a national hazardous waste system is likely to be reviewed.

While investment projects at a larger scale primarily are to be funded by local and ISPA means, there is still a need to prepare a pilot project that demonstrates the application of low-cost technologies for waste handling and storage. This is a suitable area for bilateral support. Also the demonstration of methods of organising waste managing, waste collection, waste sorting, waste recycling, and management of landfills remains to be further developed. In this respect additional demonstration projects like the DANCEE project for the regional landfill for Vratza and Mezdra municipalities can be initiated.

4.4. Nature Protection

Status of the Environment

Bulgaria's natural and biological resources are very rich. The country is home to a wide variety of flora and fauna species. About 200 endemic species of the Balkans are found here. During the past three years 327 birds, 389 plants, and 473 animals have been registered as protected species. A total of 16 species are on the list of globally endangered species.

There are 48 ornithological sites of EU importance, 34 of which are part of the Corine biotopes network. Forest coverage is 30 per cent of the territory. In relation to the protection of wild birds and habitats, 140 sites are identified as meeting the requirements to becoming Special Areas of Conservation (SAC). They are estimated to cover 12 per cent of the national territory.

Three categories of protected areas are exclusively state-owned; these are i) reserves, ii) maintained reserves and iii) national parks. Other categories such

as nature monuments, nature parks, and protected sites might also include municipal or private ownership. The classification and management of protected sites is currently being revised according to the terminology given in the EU habitat directive.

Distribution of nature reserves and protected areas

Category	No	Share	Ownership
Reserves	55	16%	State
National parks	3	3%	State
Nature monuments	475	5%	State, municipal, private
Maintained reserves	35	1%	State
Nature parks	10	40%	State, municipal, private
Protected sites	125	5%	State, municipal, private
Total		4.5% of total area	

Status of Transposition

Two laws, namely Law on Protected Areas and the recently enacted Biodiversity Act, together compose the main legislative framework for nature protection. The latter transposes the requirements given in the Habitats and Wild Birds Directives, and the law creates a legal base for establishing the necessary administrative structure for the implementation of the EU regulation on endangered species, connected with the CITES Convention.

Status of Implementation

The Habitats Directive and the Wild Birds Directive specify that certain qualifying sites should be classified and designated as Special Areas for Conservations, and that complementary management practices are to be introduced, ensuring protection of the ecological values.

A National Ecological Network of protected sites is in the process of being formed before 2006, and is intended to cover 10–12 per cent of the national territory. All protected sites will be categorised as SACs and the network is expected to become Bulgaria's contribution to the Natura 2000 Network when Bulgaria joins the EU. Thirty per cent of the SACs are already protected through the Law on Protected Land.

Some of the future ecological network has already been officially designated. The Pirin National Park and the Sreburna Nature Reserve are recognised as world natural heritage sites under the 1972 Convention on the Protection of the World Cultural and Natural Heritage. Seventeen areas are listed as biosphere reserves under UNESCO's Man and Biosphere Program. Five wetlands of a total area of 2,803 ha are included in the Ramsar List. Studies indicate that 54 per cent of ornithologically important sites are already protected to some degree, while the remaining 46 per cent are currently not subject to protection.

A project with Danish support has just been launched with the aim of identifying and registering potential sites to be designated as Special Areas for Conservation and for preparing for registration according to the NATURA 2000 criteria.

The restricted use of protected zones according to the law on protected areas is already guaranteed. Here the challenge is to prepare management plans and in turn to operate the protected land accordingly. Three management plans are approved while additional twenty-two plans are currently under preparation.

The protection of other territories categorised as SACs is somewhat more challenging. This is especially the case for privately owned land. Here, measures are to be developed for negotiations with the owners and for providing compensation. Such systems are not yet in place. However, a link has been established between the MoEW and the agri-environment department of MoAF that administers the SAPRAD programme. Potential synergy may be established. Restricted use of agricultural land and forest can potentially be supported under the SAPARD programme and compensation can be provided to the farmers.

The engagement of civil society and NGOs is quite well elaborated in the area of nature protection, due to a general awareness and the presence of well-functioning NGOs with international networks. NGOs have amongst others carried out campaigns on increasing the readiness of Bulgaria to build up the European NATURA 2000 network.

One of the major challenges is related to the staff shortages. However, staff numbers are being increased currently, and the staff number at the National Park Directorate has grown to 175 persons. The number of experts on protected territories and biological diversity at the regional environmental inspectorates has also reached 57 persons.

Another challenge relates to the enforcement of the restrictions. There will probably be a gradual process of establishing the balance between local economic activities and the protection of nature. Several projects under the GEF instrument are addressing such practices for coexistence.

More strict enforcement is planned for the endangered species regulation related to the CITES convention on trading with endangered species. A Phare Twinning project is currently assisting in preparing for appropriate administrative structures.

Major Challenges

One of the immediate tasks is to establish a NATURA 2000 network of Special Areas of Conservation that will protect valuable biotopes and habitats. Projects and activities are in place to completing the first phase of the task.

The subsequent task is to set up a procedure for approval of SACs and to protect the areas against unsustainable usage. For private land this will entail a practice for imposing restricted use against economic compensation.

Also management plans for the SACs are to be prepared and carried out. The scale of such tasks is comprehensive, taking into account that up to 12 per cent of Bulgaria's territory potentially is to be targeted. Therefore, different modalities for site management should be developed which can serve as models for different SAC categories. In buffer zones and likewise areas practices should be piloted allowing light economic activity for local farmers and hunters.

4.5. Industrial Pollution Prevention

State of the Environment

Bulgaria's historical emphasis on heavy industry caused substantial damage to its environment. In some areas, smelters have so polluted the soil and water with lead, arsenic, and cadmium that much of the surrounding land is unusable for agriculture. Other major industrial polluters include the oil processing and chemical industries. In 1998, these industries alone accounted for 47 per cent of the total discharged industrial wastewater, and about 90 per cent of the total quantity of hazardous waste in the country. Moreover, most industrial waste is still disposed of in uncontrolled landfills, creating a potential risk of pollution of neighbouring territories.

On the other hand, a considerable decrease in current pollution has been observed for all »hot spot« regions, because of the effect on Bulgaria's industrial sector of the transition from central planning to a market-based economy and because of certain pollution control measures taken in recent years. Nonetheless, a number of industrial plants still emit higher concentrations of certain harmful substances. Many of these are in densely populated towns and villages. Local air pollution is often further exacerbated by intensive motor transport. There is concern that environmental emissions could rise if growth in its economy results in increased industrial activity.

Status of Transposition

The basic legal framework for transposition of the IPPC and Seveso II Directive requirements was established with the adoption of the Environmental Protection Act in late September 2002. An IPPC Regulation has been drafted and is currently undergoing consent procedure. The Counsel of Ministers should adopt it by the end of January 2003. The legal requirements of the recently revised Large Combustion Plant Directive have not yet been transposed. The plan is to transpose the LCP requirements through a new Governmental Ordinance under the Clean Air Act. The Solvents Directive is expected to be fully transposed by the end of 2002 by a draft regulation on solvents emission reduction that is currently under consultation. This regulation will also be issued under the Clean Air Act.

Status of Implementation

The combination of old facilities requiring upgrading and lack of investment funds for technological upgrading and pollution control poses special problems for Bulgaria in the implementation of the EU Directive on integrated pollution prevention and control (IPPC) and other requirements in this sector. To meet this challenge, Bulgaria has requested the following transition periods ("TP"):

Directive	***Extended transitional period***
Integrated Pollution Prevention & Control Directive (IPPC) (96/61/EC)	2012 (5 years)
Solvents Directive (99/13/EC)	2012 (5 years)
Large Combustion Plant Directive (88/609/EEC; as amended by 2001/80/EC)	Probably 2012

Preliminary inventories indicate that 250 plants are subject to IPPC requirements. Processing of an integrated permit for a larger industrial facility will require additional staff. Because of the cross-media approach to industrial pollution control for emissions to air, land, and water is required under the IPPC Directive. Officials responsible for permitting and enforcement of industrial pollution legislation will need to make complex judgements about the trade-offs between different process options for each plant and about emissions to different environmental media. The World Bank estimates that Bulgaria's public sector will have to invest around 4.0 millions Euro (or from 67,000 Euro to 227,000 Euro per year) to administer the IPPC Directive. A mutual Bulgaria/Denmark project on cost analysis of the implementation of IPPC is currently being carried out.

In April 2002, a 5-person unit was established within the Executive Environment Agency specifically to prepare integrated permits, in co-ordination with the Regional Inspectorates for Environment and Waters (RIEWs). In 2003, this unit is expected to grow to 15 persons over the coming year and an additional 45 inspectors (three on average per Regional Inspectorate) are to be recruited.

Under the legal structure established by the 2002 Environmental Protection Act, integrated permits will be signed individually by the Minister of Environment and Waters from 2003 on. Since the permits will be administrative decisions taken at ministerial level, the only way to appeal the standards established in the permits will be to bring a case before the Supreme Administrative Court of Bulgaria. This has raised concern among the industrial operators that will be subject to the IPPC requirements.

The major financial burden will of course fall on the private sector. Some of the costs of achieving the EU standard of best available techniques (BAT) will be incurred in any case in carrying out process upgrades needed to be competitive in the global marketplace. Nonetheless, most industrial facilities coming within the IPPC Directive requirements will require major investment in order to meet the EU standard of BAT, at a time when there is little domestic capital available for such investment. The World Bank estimates that Bulgaria's public sector will have to invest around 4.0 MEUR (or from 67,000 Euro to 227,000 Euro per year) to implement the IPPC Directive.

Bulgaria has sought bilateral assistance, also from Denmark, to enable it to meet the challenge of integrated permitting. A previous DANCEE project took five industrial facilities through a pilot phase exercise of applying for and negotiating the conditions of integrated permits, as a precondition for receiving major loans from the World Bank for installing new technologies and pollution controls measures. The current DANCEE project aims to build the additional capacity needed to regulate and handle the approximately 400 integrated permits that Bulgaria has committed itself to issue within the next 5 years (some 75 each year). The project has helped the MOEW to finalise a draft regulation on integrated permitting which will be adopted by Government Decision in February 2003, as well as to develop a manual on integrated permitting and guidelines on BAT for three industrial sectors: incineration, surface treatment and organic chemicals production. The project is also developing a strategic investment plan for the IPPC Directive, for the MOEW to use in its accession negotiations and implementation planning.

The Large Combustion Plant (LCP) Directive applies to emissions from combustion plants with a rated thermal input greater than 50 MW - typically power plants, oil refineries, and big industrial boilers. Bulgaria's implementation of the LCP requirements is well advanced, but a national plan to reduce total annual emissions from LCPs has not yet been established. From Bulgaria's point of view, the most urgent investment priority is for combustion installations put into operation after 1 July 1987 that are not yet in compliance with the 1988 Directive's emission limit values.

But the new requirements introduced with the 2001 amendment are also a concern. All plants licensed after 2001 must meet even more stringent emission limit values, and "existing plants" (licensed before 1987) must either retrofit by 2008 to reduce emissions to the same level as plants licensed after 1987, or phase out after an additional 20,000 hours of operation after the 2008 deadline. Bulgaria will therefore request a transition period for these new requirements.

A rough estimate of the costs of compliance for existing power plants – with national regulations as well as with the original un-amended LCP directive - is

362 million Euro. This estimate includes: flue gas de-sulphurisation at Maritsa East 1 (2x300 MW), Maritsa East 2 (4x215 MW) and Maritsa East 3 (4x215 MW) plants projected to cost 31 million Euro; low NOx burners in most coal-fired plants and gas reburning at Russe projected to cost 22 million Euro; and the upgrading of electrostatic precipitators projected to cost 27 million Euro[5]. Bulgaria is actively seeking sources of financing for these improvements, but lack of clarity concerning the status of privatisation for Bulgaria's energy sector has impeded the process of securing funding for environmental investments. A cost assessment for compliance with the 2001 amendment to the directive will be completed by the end of 2002 but the implementing costs are expected to be at least two times greater since the improvement measures will have to cover all 36 existing LCPs.

The Seveso II requirements aim at the prevention of major industrial accidents, and also include measures for accident response. The institutional framework for implementation of Seveso II requirements will be set up in 2002. The MOEW has already identified how many installations fall within the scope of the Directive (67 installations: 35 top tier and 32 lower tier). The financial implications of implementing the Seveso II requirements in Bulgaria have not yet been assessed.

Major Challenges

There is a need for providing information to industry, perhaps through a BAT Centre, on the technologies that are considered to comply with the IPPC requirements.

Likewise procedures should be prepared for co-ordinating how the RIEWs, River Basin Directorates, the EEA and the MOEW will be involved in the permitting process.

The action planning for implementing the IPPC directive is to be strengthened. This includes the establishing priorities among industrial sectors for phasing in integrated permitting.

Finally there is a challenge in setting up a system of financial incentives or a financing mechanism such as an industry-oriented environmental credit scheme, to support the necessary retrofitting of industrial facilities.

4.6 Chemicals Control

The EU requirements with respect to chemicals control are aimed at facilitating trade in chemicals and chemical products through mutual recognition of safety tests, harmonised labelling and packaging standards, and other measures to minimise risk to health and the environment. If the proposed EU Strategy for a future Chemical Policy goes into effect, thousands of chemicals already in use within the EU will undergo review and assessment, a burden that the new Member States will be expected to share.

[5] *World Bank Dual Challenge Study 2001*

Like the other CEC Candidate Countries, Bulgaria lacked similar marketplace controls during its socialist period. Large and significant gaps therefore exist in Bulgaria's regulations concerning chemicals safety, and it still has much to do to establish the new administrative structures and analytical capacity required to implement the various EU directives and regulations in this sector.

Status of Transposition

Bulgaria's framework Law on Protection against Harmful Impact of Chemical Substances, Preparations and Products was adopted in 2000 and entered into force in February 2002. The legal basis for implementing the EU framework law for this sector was completed in 2002 with the adoption of three additional regulations: the Regulation on the Notification of New Chemical Substances; the Regulation on the Classification, Packaging and Labelling of Chemical Substances, Preparations and Projects; and the Regulation on Evaluation and Control of the Risks of New Substances.

Further transposition of the Animals in Scientific Experiments Directive awaits a regulation expected by the end of 2002. Transposition has not started for the Asbestos Directive, other than the setting of limit values for asbestos emissions. The Regulation on the Permitting of Biocide Products was recently adopted, which will help to complete transposition in this area.

Bulgaria has ratified the Vienna Convention on the protection of the ozone layer and also the Montreal Protocol on substances that deplete the ozone layer.

With respect to the EU requirements on genetically modified organisms (GMOs) and genetically modified micro organisms (GMMs), the 2002 Regular Report notes that Bulgaria failed to meet its scheduled aim of transposing EU GMO law by the end of 2001. The draft law on GMOs is still awaited.

Status of Implementation

Bulgaria has indicated that it will have fully implemented the chemicals acquis by 2002. This appears unrealistic, even though the MOEW has received significant technical assistance in this area.

The Commission noted in its 2002 Regular Report that "further progress has been made with the adoption in July 2002 of implementing legislation on import and export of certain dangerous substances and on risk assessment of new chemical substances to human health and the environment. Guidance to exporters on their obligations under the laws on import and export of dangerous substances will be issued in the framework of a Phare Twinning Project. However, there still remain other implementation measures to be completed. Nor have implementation measures been taken yet on the Risk Assessment Regulation."

The above-mentioned Phare Twinning Project started up in September 2001 with partners from the German Ministry of Environment and the Austrian Federal Agency of Environment. The objectives for the project included completing the

transposition of the legislative acts of the EU in the field of chemical substances and the first steps in the implementation of their requirements. Amongst other activities, the project involved: developing a detailed phased programme for the implementation of the regulations under the Law on Chemicals; analysing the current situation with the Bulgarian administration; developing training programmes for Control Authorities, and developing a project for Pilot Notification of new chemical substances. One of the main results of this Twinning Project is expected to be the formulation of a detailed Implementation Plan for this sector.

The bulk, if not all, of implementation measures are still to be taken with regard to the protection of Animals in Scientific Experiments Directive, the Asbestos Directive and the Biocides Directive.

The biocides requirements are particularly demanding. As an initial implementation measure, an Expert Team in the Ministry of Health has been given responsibility for issuing authorisations, setting down conditions of use, and labelling requirements. Bulgaria's 2002 Progress Report states the intention of preparing a detailed plan for the implementation of the biocides requirements, including strengthening of administrative capacity, by the end of 2003. Bulgaria aims to fully implement the biocides requirements by 2006.

Bulgaria has not yet fully implemented the EU requirements with respect to ozone depleting substances (ODS). Bulgaria's Law No 254 on Chemicals puts in place a system for permitting and controlling the import, export and transformation of ODS, and the intention is that this law will be amended in order to fully implement the EU requirements in this area. A partial framework is already in place for authorising the use of hydrochlorofluorocarbons. Bulgaria is developing, with DANCEE assistance, a National Programme to phase out ozone-depleting substances.

Implementation measures are lacking for the EU requirements with respect to GMOs. In 2001, the World Bank considered the costs of implementing the EU requirements for GMOs and for chemicals. It made the point that since one of the benefits of approximation will be easier access for Bulgarian chemicals and GMOs to the EU market, the richer producers will be more willing to accept the cost of the changes.

Major Challenges

The chemical sector requirements will require further development of the capacity to analyse substances for hazard characteristics and for carrying out risk assessment, if Bulgaria is to fully participate in the burden of review and assessment of the thousands of chemicals already in use. This capacity will also be important for taking the necessary regulatory decisions on any new substances that may be notified to Bulgarian authorities. Implementation of the EU biocides

requirements will require similar skills. Bulgaria's current institutional framework for control of chemicals may need review and consolidation, as part of the additional measures needed to prepare for the EU requirements in this sector.

4.7 Radiation Protection

The EU requirements on radiation protection are aimed at providing the public and workers with sufficient protection from radiological sources. Bulgaria's nuclear power industry is one potential source, but medical exposures and consumption of foodstuffs are other areas regulated under EU law.

Status of Transposition

Bulgaria has now fully transposed the requirements of the Basic Safety Standards Directive through the Basic Norms of Nuclear Safety, adopted in 2000, and amendments to the Law on the Safe Use of Nuclear Energy.

In April 2002, the government adopted the regulation on the maximum allowable radioactive contamination for agricultural products and the regulation on the requirements to limit the radioactive contamination of foodstuffs. Governmental Orders are now being drafted to assist in transposition of the EU requirements with respect to medical exposures, information to the public and outside workers by 2003. Work has not yet commenced on transposition of radioactive waste shipment requirements.

Status of Implementation

At least three ministries have a stake in the radiation protection issue – the MOEW, the Ministry of Health, and the Ministry of Energy and Energy Resources - and they have had difficulty agreeing on which agency will be responsible for the various requirements with respect to radiation protection. Though there is progress in this sector, lack of clarity concerning competence for key EU obligations continues to pose obstacles. For example, the list of authorities involved in providing information to the persons organising emergency assistance in the event of a radiological emergency is long. On the energy side, the former Committee for the Use of Atomic Energy for Peaceful Purposes (CUAEPP) has recently been transformed into a Nuclear Regulatory Agency and the NRA is expected to play a major role in radiological safety measures.

The Directive on health protection of individuals in relation to medical exposure is expected to pose significant costs to Bulgaria's medical and dental practices. The EU requirements include mandatory diagnostic reference levels for examinations using radiological equipment and establishes dose constraints for individuals helping to support those undergoing medical exposure, as well as acceptability criteria for radiological installations. Much of the radiological equipment currently in use by dentists and hospitals will need replacement to meet these standards.

According to the Environmental Protection Act, the Executive Environment carries out radiation monitoring of the environmental components through its radiation-monitoring network. The radiological parameters of the air, water and soil are monitored regularly. At the same time, the Executive Environment Agency administrates the national automated system for permanent control of the radiation gamma font. The system consists of 26 local stations covering the territory of the whole country and ensuring reliable information in case of increase of gamma radiation within the territory of Bulgaria or in case of trans-boundary pollution. Eight more stations, situated at a distance of about 2km from the Bulgarian nuclear power plant "Kozlodui", are included in the national automated system. The system ensures real time data for the State Civil Protection Agency and the Emergency Centre at the Nuclear Regulatory Agency and therefore assures due implementation of environmental and population protection measures in case of radiation accident.

Major Challenges

On the institutional side there is a need for clarification of the allocation of competencies between the MOEW, the Ministry of Health and the NRA for the Basic Safety Standards Directive, information to the public in the event of a radiological emergency and other requirements in this sector. Also, the NRA is not adequately staffed to meet its obligations with regard to radiological safety.

Regarding investments the needs at the immediate level are to replace out-of-date radiological diagnostic equipment in dentists' surgeries and hospitals.

4.8 Noise

Most of the EU's current requirements in this sector are product standards, although the newest EU directive in this area addresses ambient noise as well. Bulgaria is still at the beginning in its approximation of the EU product standards with respect to noise, having taken few steps to transpose these requirements.

Bulgaria's 2002 Progress Report indicates that all of its awaited laws in this sector will be based on the EU framework directive on noise from outdoors equipment.[6] It plans to issue a Law on Technical Requirements to the Products to transpose the requirements, and to introduce thirteen national standards in conformity with the EU product requirements.

With regard to noise from household appliances, requirements are intended to be introduced into Bulgarian law by a regulation based on Article 7 of the Consumers and Trade Rules Protection Act.[7] The intention is that this regulation will be adopted by the end of 2002.

Status of implementation

Bulgaria has much to do to implement the EU requirements. An implementation plan for achieving compliance with the EU requirements for noise from household appliances will be issued by the end of 2003.

[6] *Directive 2000/14/EC of the European Parliament and of the Council on noise emission in the environment by equipment for use outdoors.*

[7] *Additional information provided by Bulgaria.*

Concerning the requirements for noise from equipment used outdoors, the Chairman of the State Agency for Standardisation and Metrology will issue authorisations to carry out conformity assessments. This State Agency will also be responsible for market surveillance.

Major Challenges

The major challenge in this sector will be to develop accredited laboratories with capacity for testing noise levels emitted by products according to the methodologies required under the EU laws. It will also be important to be sure that all Bulgarian producers have information about the EU requirements, and sufficient time to make the technical changes to their products needed for compliance. Since compliance with the EU standards is an essential prerequisite for placing products on the internal market, Bulgarian producers will need to meet these standards if they are to remain in operation.

4.9 Horizontal Measures

The EU horizontal requirements include such measures as access to environmental information and environmental impact assessment (EIA) of proposed development projects and current big polluters. The EU has placed great emphasis on the need to set these procedures in place as quickly as possible, not least of all because EIA with public participation is a fundamental pre-condition for eligibility of infrastructure projects for EU funding.

The Ministry of Environment and Waters has given priority to informing the public about environmental matters and attracting the attention of various groups to environmental concerns. It co-operates closely with a number of non-governmental organisations (NGOs) on various activities, including programmes »For Clean Environment«, »Driving with unleaded fuel«, »European Day without cars« and a »National Week for Clean Environment«. The tool of environmental assessment has been used actively in Bulgaria since the coming into force of the Environmental Protection act in 1991.

Status of Transposition

In September 2002, Bulgaria adopted the Environmental Protection Act, which – as the 2002 Regular Report notes - provides the "necessary legislative framework for further progress on environment impact assessment and access to information".[8] It has a specific Chapter on Public Access to Environmental Information, which according to the MoEW "fully complies" with the new Directive on public access to environmental information and to the Aarhus Convention principals. Though Bulgaria has not yet ratified the Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters, it is taking steps to ratify this convention in 2003.

Bulgaria's EIA requirements have been modified over the years to take into account Bulgarian EIA practice and experience of EU Member States. The 2002

[8] *Commission Regular Report 2002 on Bulgaria*

Environmental Protection Act repealed Bulgaria's existing legislation and set in place provisions fully in compliance with the EU requirements. The Act also encompasses transboundary EIA, in line with Bulgaria's ratification in 1995 of the UN ESPOO Convention on Environmental Impact Assessment in a Transboundary Context. The MOEW intends to transpose the more recent EU legislation on strategic environmental assessment (SEA) by the end of 2003.

Status of Implementation

Environmental information is one of the key responsibilities of the Executive Environmental Agency (EEA) under the MOEW. The EEA co-ordinates Bulgaria's environmental monitoring system and issues information on the state of the environment in the form of a monthly report and an annual report on the State of Environment. The monitoring information can be accessed on the MOEW website, (www.online.bg), which has a "Dialogue with the Public" option. The EEA is actively seeking support from donors for improving its capacity to ensure public access to environmental information, including establishment of a Public Information Centre at the premises of the EEA and production of brochures for the public on their Aarhus Convention-related rights.

Responsibility for implementing the EIA directive is shared between the MOEW and the Regional Inspectorates for Environment and Waters. Bulgaria has carried out EIA procedures since 1991, and most of the systems and measures required for implementation of the EIA directive are in place. Public participation is an important part of the EIA procedure. Public hearings are conducted and EIA reports are made available at least one month prior to those hearings. A consultative process is in place to ensure that any member of the public and any concerned environmental authority can express their opinion on the information supplied by the developer. The decisions are published. Further consultation and public information requirements will be introduced in 2003 on the basis of the provisions laid out in the new Environmental Protection Act.

In 1999, an inter-ministerial commission on EIA was established with the MoEW involving representatives from the MH, MAF, MRDPW and national experts. A Dutch financed project has helped the MoEW with its implementation of the EIA plans and programmes, and improvement of inter-institutional co-ordination. Norway has provided assistance in a 2002 project to create and purchase technical equipment for 6 information and public relations centres in six Ministry regional inspectorates.

Like many Member States, Bulgaria is still in the early stages of implementing the more recent EU requirements with respect to strategic environmental assessment (SEA). Currently, the only programmes, which are subject to SEA, are protected area management plans and territorial development plans. One of the challenges for Bulgaria will be how to ensure public debate on a project, plan or programme during EIA or SEA process.

Major Challenges

The immediate challenge lies in developing further administrative capacity for improved dissemination of information to the public and for responding to requests for information from the public.

There is also a need for further development of best practices concerning how to foster better public participation in the process of considering the environmental impacts of proposed projects. Lastly strategic environmental assessment with respect to plans and programmes in other sectors is yet to be introduced.

4.10 International Conventions

The responsible body for international and bilateral co-operation in the field of the environment in Bulgaria is the Directorate on Strategies, European Integration and International Co-operation of MOEW. As the following table indicates, Bulgaria is on par with the other CEC Candidate Countries in terms of its accession to the major international environmental instruments.

State of play of selected multilateral environmental agreements (September 2000)

Convention	*CBD*		*CITES*		*CMS*		*BASEL*		*OZONE*		*UNFCCC*		*UNFCCD*		*RAMSAR*	
CEC Country	***R***	***A***	***R***	***A***	***R***	***A***	***R***	***A***	***R***	***A***	***R***	***A***	***R***	***A***	***R***	***A***
Bulgaria	X			X		X		X		X	X				X	
Czech Republic	X		X			X	X		X		X			X	X	
Estonia	X			X				X		X	X				X	
Hungary	X			X		X	X			X	X			X		X
Latvia	X			X		X		X		X	X				X	
Lithuania	X							X		X	X				X	
Poland	X		X			X	X			X	X					X
Romania	X			X		X		X		X	X			X		X
Slovak Republic	X		X			X		X	X		X				X	
Slovenia	X			X		X		X	X		X				X	
European Union	X				X		X		X		X		X			

* R= Ratification, acceptance, approval or succession; A= Accession

Bulgaria has followed up on many of its international convention obligations by putting national action plans in place. In 1999, the Council of Ministers adopted

a National Strategy for Biodiversity Conservation 1999 – 2003 as required by the Convention on Biological Diversity. In accordance with its commitments from the Montreal Protocol, Bulgaria has put in place a National Programme on ozone depleting chemicals.

In 1998, Bulgaria ratified the VOC Protocol to the UNECE Convention on Long-range Transboundary Air Pollution, and in 1999, the Danube Convention. In addition, Bulgaria is one of the few countries to have ratified the Basel Convention Export Ban Amendment.

From a regional point of view, Bulgaria is one of the six countries bordering the Black Sea, one of the world's most remarkable regional seas for its isolation (only the Bosphorus Straits as outlet) and for the size of its drainage basin (almost one-third of continental Europe). The Convention for the Protection of the Black Sea against Pollution was signed by Bulgaria in 1992, and ratified in 1993. Bulgaria has also ratified the Convention's three Protocols (control of land-based sources of pollution, dumping of waste and joint actions in case of accidents e.g. oil spills). It participates actively in the various regional projects and programmes of the Black Sea Environmental Programme, including the current Global Environment Facility (GEF) Black Sea Ecosystem Recovery Project.

Bulgaria has also concluded bilateral environmental agreements with almost all its neighbours, including Romania, Greece, Macedonia and Turkey. Bulgaria also has environmental co-operation agreements with Italy, Ireland, Slovak Republic, Denmark, Austria, Germany, Czech Republic, Hungary, Russia, the Netherlands, and Poland.

4.11 Climate Change

Bulgaria ratified the United Nations Framework Convention on Climate Change (UNFCCC) in March 1995 and so far has complied with its requirements. In accordance with the international efforts to reverse global climate change, Bulgaria ratified the Kyoto Protocol to the Convention on 17 July 2002. Achievement of its Kyoto target will require Bulgaria to conduct an active policy to reduce greenhouse gases (GHG). During the First Commitment Period (2008-2012), the expected yearly average amount of the total aggregated emissions is expected to be under the commitment made to reduce its total emissions by 8 per cent from the base year of 1988.

The National Climate Change Action Plan (NCCAP) adopted in 2000 sets forth the national GHG mitigation policies and measures by sector. The responsible body for the realisation of the plan is the Inter-ministerial Committee on Climate Change. The NCCAP also promotes the participation in the Kyoto Protocol Mechanisms,

namely Joint Implementation (JI) and International Emissions Trading (IET). The Bulgarian Government gives high priority to participation in both mechanisms.

Bulgaria expects that many of the measures it is taking to approximate to the EU acquis will help to reduce GHG. A regulation under the Clean Air Act scheduled for approval by the end of 2002 will define the competent institutions and procedures for gathering information on pollutants, including GHG emissions. New policies and regulations for liberalising the electricity and gas[9] markets will provide energy efficiency incentives by, *inter alia*, removing subsidies.

In addition, there is now a significant potential for emission trading should additional measures be implemented. According to the Third National Communication on Climate Change submitted to the UN in July 2002, the restructuring of the industrial and power sectors will result in 22-30 per cent lower CO_2 emissions for the period 1995 – 2015.

The possibility to reduce GHG emissions has been limited by lack of funding for energy efficiency improvements. Many of the most energy intensive enterprises became non-competitive and closed in the period 1998 – 2001. But privatisation has brought in new owners ready to implement low cost energy efficiency measures. As a result, national GHG emissions were reduced by 14 per cent in two years from 1997 to 1999.

Bulgaria has a big potential for emissions reduction through projects in the field of energy efficiency in the industry and building sectors, including development of the natural gas household network. Additional emission reductions in the amount of 10-15 million tons CO_2-equivalent are considered possible. Under the Kyoto Protocol's joint implementation (JI) mechanism, Bulgaria and other EIT countries may sell any "additional" reductions in emissions to other Annex I countries that may need to buy emission reduction units (ERU) to meet their climate change commitments. Bulgaria is therefore taking steps to attract investments in energy efficiency and other measures in the power, heating, transport and industrial sectors, through the JI mechanism.

Bulgaria has put in place procedures for evaluation of JI projects. A Steering Committee of representatives from all relevant ministries and organisations is authorised to present a final proposal for the approval of JI projects to the Minister of the Environment and Water. A Joint Implementation Unit in the MoEW was established on 1 July 2000 with support from the Netherlands. The staff of the JI-Unit assists in developing JI policy, co-ordinating joint implementation activities, negotiating on credit sharing, and communicating with the project developers.

[9] *Directive 98/30/EC of the European Parliament and of the Council concerning common rules for the international market in natural gas.*

A pilot JI project took place in 2001 in the City of Pleven, and Bulgaria has entered into a JI agreement with the Netherlands for future projects for co-operation in reducing emissions of greenhouse gases. This co-operation aims at the transfer of emission reduction units of an average of 3 Mt CO_2-equivalent per year during the commitment period 2008-2012. Decisions on the transfer are taken on a project-by-project basis by means of International Emission Reduction Unit Procurement Tender (ERUPT).

A host Country Umbrella Agreement between the Republic of Bulgaria and the International Bank for Reconstruction and Development, as trustee of the Prototype Carbon Fund was negotiated and will be signed by the end of November 2002. Two projects will be implemented in the areas of energy efficiency and biomass utilisation. Bulgaria has also signed a JI agreement with Austria, and is in different stages of negotiations with Denmark, Canada and Switzerland.

The MEW hopes to bring in other JI investments in energy efficiency and other measures and has expressed a particular interest in developing methane utilisation projects for the landfills that Bulgaria needs to develop to meet the EU Landfill Directive requirements. But to take full advantage of the JI opportunity, Bulgaria will need to develop its institutional capacity and legal framework by 2007, including finalisation of a national system for assessment of greenhouse gas emissions.

The challenges ahead for Bulgaria include setting in place the legal, administrative and practical instruments for carrying out more accurate assessment of Bulgaria's GHG emissions. The Ministry of Environment and Water, the leading player in developing and enforcing climate change policy, has insufficient capacity to develop policies and establish the different systems required under the Kyoto Protocol, particularly for participation in the flexible mechanisms. Establishment of the different systems needs to be co-ordinated with EU decisions and the necessary capacities must be established and developed. In particular, more staff needs to be allocated to climate change activities.

External assistance has been the main source of funding for climate-related activities. One of the possibilities to receive bilateral or multilateral support for strengthening of the institutional capacity is to follow Decision 3/CP.7, of the Marrakech Declaration, stating that capacity building should be a continuous process, country driven and supported by Annex II countries.

In order to fulfil the commitments under both the Convention and the Kyoto Protocol, besides the capacity building and the establishment of all necessary national systems, Bulgaria needs to develop a National Strategy on Climate Change and a detailed strategy on JI and emissions trading. Moreover,

administrative capacity for identifying, preparing and negotiating JI projects needs to be strengthened. Because of the technical difficulties in preparing JI projects that attract outside investment, there is expected to be a need for technical assistance in building the implementation structures for JI for some time to come.

5. Sectoral Integration Issues and their Relevance to EU Accession

The integration of environmental considerations into other policy areas, especially economically important sectors such as energy, industry and agriculture, is a legal obligation under the Treaty of Amsterdam (Article 6). The obligation stems from the recognition of the inadequacy of environmental policy for tackling the underlying causes of environmental deterioration.

Like most other Member States and Candidate Countries, Bulgaria still has much to do to take environmental concerns into account in developing policies in the energy, transport and agricultural sectors. Though the National Strategy for the Environment and Action Plan 2000-2006 addresses sectoral integration issues, it is a challenge of a different order to get decision-makers in other sectors to take environmental aspects into account in their policies and programmes. The 2002 Regular Report notes that some progress has been made in areas such as agriculture and transport, but generally the use of sustainable development approaches remains limited in other areas of economic interest.

5.1 Energy

The European Union is the largest importer and the second largest consumer of energy in the world. Thus energy is a key focus in the pre-accession preparations of the candidate countries. The EU's energy policies recognise the importance of a competitive and sustainable energy market. Priorities for integration of environmental considerations into this sector are therefore the improvement of energy efficiency, promotion of the use of renewable energy, and internalisation of environmental and other external costs. DANCEE has supported the introduction of biomass-fuelled district heating schemes as a demonstration project.

Bulgaria is also dependent on imports for its energy supplies. With virtually no supplies of oil and only small reserves of gas, Bulgaria has had to pay for energy in hard currency at world market prices, resulting in less reliable supplies. Bulgaria has historically followed a very energy-intensive development policy. The emphasis during the socialist period was on development of heavy industries with the energy for these industries largely imported at favourable prices from the former Soviet Union.

Today, energy use in support of the Bulgarian GDP is still significantly higher than for a comparable market economy. Energy intensity measured in terms of tonnes of oil equivalent (t.o.e.) per USD 1000 was 1.57 for Bulgaria in 1999, compared to 0.74 for Czech Republic, 0.49 for Hungary, and 0.15 for the European Union as a whole. The consumption of electricity by a Bulgarian

household is three times higher than that of a household in Romania, Slovakia and Lithuania.

The March 2002 *Energy Strategy of Bulgaria* notes the importance of reversing Bulgaria's overly high consumption of energy. It proposes to eliminate all subsidies currently paid by taxpayers to energy production by 2004, and to introduce differential pricing aimed at full cost pricing for those who can afford it but with special pricing packages for low-income households. This rollback of subsidies is likely to have a significant effect on reducing wasteful use of energy, along with the proposal to encourage introduction of energy metering at household level. But the energy strategy incorporates other environmental aspects only in a limited and inconsistent way, indicating that Bulgaria still has much to do to integrate environmental considerations into its plans for this sector.

The Energy Efficiency Agency under the Ministry of Energy and Energy Resources is working on an *Energy Efficiency Strategy for Bulgaria*, which is scheduled for release in 2003. A new Energy Efficiency Law is also planned to set in place a package of energy conservation measures, including financial mechanisms. Of these, a proposed National Energy Efficiency Fund deserves special management. The current plan is for this proposed fund to be used to guarantee loans for investments, and to be replenished partly by fees imposed on generators using fossil fuels.

Another major environmental concern with respect to energy is nuclear safely. Bulgaria has been a focus of EU attention in this respect because of its nuclear power facility, Kozloduy, located 200 km to the north of Sofia on the Danube River. Four of Kozloduy's six reactors were commissioned in the 1970s and early 1980s, and are considered to have inherently unsafe designs. Concern about the facility's safety record has led to calls for complete closure.

The country currently depends on nuclear power for 44 - 46 per cent of the total average annual generation of electricity, as well as on the export earnings it currently receives from the sale of some 15 per cent of electricity generated. In an understanding signed with the European Commission in November 1999, the Bulgarian Government agreed to early closure of Kozloduy's units 1 – 4. The deadline for closure of units 1 and 2 is the end of 2002. Towards that end, a special project management unit has been established in the Kozloduy nuclear power plant (NPP) for the purpose of overseeing the process of closing units 1 and 2, and then decommissioning them. The government is thus preparing to shut down the two reactors, though it has reportedly expressed a wish to wait until the end of the 2002-03 winter season before final closure so that proper fuel cycle management will ensure the avoidance of extra costs related to unused fuel. In 1999 the Bulgarian government also made a commitment to close units 3 and 4 by 2006, but there are still discussions about waiting until the end of the

reactors' design life before closure, *i.e.*, 2008 for unit 3 and 2010 for unit 4. The EU summit in Copenhagen reiterated the commitment to close Kozloduy reactor 1 – 4 and indicated that substantial financial assistance has already been granted for that purpose.

Bulgaria views its exports of energy as important for its economic future, and its nuclear power facility is part of its generation capacity. In recent years it has invested millions of Euro of donor and own funds in safety modifications. The modifications to units 3 and 4 were recently reviewed by an expert group from the International Atomic Energy Agency (IAEA) and declared safe. In support of continued operation, the government cites a marked improvement in safety at Kozloduy due to training, the new investment, and an increase in employee morale.

The EU considers the closure commitments made in 1999 to be non-negotiable. The closure of the four older reactors would reduce the overall proportion of Bulgaria's nuclear-generated power by half, but would not eliminate Bulgaria's capacity to export electricity, particularly if Bulgaria reduces its internal needs for electricity through energy efficiency measures.

A special Peer Review on nuclear safety carried out under the auspices of the European Council led to a June 2002 Status Report which concluded that Bulgaria had accepted all recommendations contained in a June 2001 Report on Nuclear Safety in the Context of Enlargement. It recommended that the new Law on the Safe Use of Nuclear Energy would be implemented as soon as possible and that special attention be given to the funding of a radioactive waste storage programme. It reaffirmed the importance of Bulgaria's commitment to close Units 1 – 4 of the Kozloduy NPP at the earliest possible date.

In June 2002 Bulgaria adopted the law on the Safe Use of Nuclear Energy, which transforms the Committee for the Use of Atomic Energy for Peaceful Purposes (CUAEPP) into a Nuclear Regulatory Agency. This step is expected to improve Bulgaria's nuclear regulatory capacity. The NRA is to have its own budget supported via an annual contribution from the State budget and also from the licensing of nuclear energy activities. In order for the law to have full effect in the coming years, 22 related regulations still need to be developed and implemented. A May 2002 decree provides for an increase of staff from 80 to 102 people. However, salaries of Bulgarian officials are low, and it is difficult to find and retain competent officials for the NRA at the current levels of compensation.

The EU has agreed to assist Bulgaria, both technically and financially, in the early closure of units 1 - 4. Additional Phare funding of 200 MEUR has been committed over the period 2000-2006 for the Kozloduy International Decommissioning Support Fund, managed by the EBRD. The EU has also

granted an Euratom loan for the modernisation and safety upgrading of units 5 and 6, which may come to at least 540.0 MEUR. However, the EU has made further assistance to the later nuclear plants, including the Euratom loan, conditional upon the closure of the older units. The EU has also granted support for projects designed to support efficiency measures in the energy sector in Bulgaria, including the rehabilitation of the Sofia District Heating network - a project in which other international institutions also participate.

The Bulgarian Government is asking for additional funds from the EU and other donors (The Danish Ministry of Environment has contributed 1.5 MEUR) to cover closure and decommissioning costs, in addition to the 135 MEUR set aside from national funds. The European Commission cites the availability of cost-effective methods of nuclear power plant decommissioning, e.g. a method known as "safe enclosure". This consists of postponing the "Regulatory Control" from NRA, reaching a "safe storage configuration", waiting 5 years to unload the core, and then waiting for another 30/40 years before further steps to dismantle the contaminated part of the plant. However, there is not much experience to date in Europe or elsewhere from which to draw best practices or reliable information on costs related to NPP decommissioning.

Major Challenges

Major challenges for Bulgaria's energy sector include, therefore, building the institutional capacity of the Nuclear Regulatory Agency *inter alia* by increasing its funding, including for officials' salaries, perhaps through self-financing mechanisms, so that it can serve as a strong independent regulatory agency.

Another challenge will be how to meet the commitments made in 1999 to close units 1 and 2 by the end of 2002, and units 3 and 4 by 2006, and to carry out cost-effective decommissioning after the closures take place.

Finally, there is still much to do to integrate environmental considerations into Bulgaria's energy sector. The development of a separate *Energy Efficiency Strategy for Bulgaria* is an important step, but in addition, energy efficiency goals and concrete measures for achieving the targets should become an explicit part of the *National Energy Strategy.*

5.2 Industry

In order to cope with market forces within the EU upon accession, the CEE Candidate Countries all need to put in place policies to enable their industries to achieve a certain level of competitiveness by the time of accession. At the same time, CEE industries must take the measures necessary to comply with the EU standards regarding environmental protection.

Bulgaria's transition to a market economy has taken its toll on many Bulgarian industries, but this has been to the benefit of the environment. Overall pollution from industries has been reduced since 1989 as a result of the:

- Restructuring of the national economy, with a concomitant decrease in industry's share in the structure of the economy;
- Decrease in the share of industries that pollute the environment in the total volume of industrial production;
- Measures undertaken to improve the environment (replacement of technologies, introduction of treatment installations).

The decline in industrial output has played the largest role in reducing pollution levels, but the procedure to carry out environmental assessment of enterprises introduced into Bulgaria's privatisation process has also contributed to this pollution reduction trend.

On the basis of these pre-privatisation environmental assessments, carried out since 1995, the MOEW has required new private owners to take specific measures to achieve compliance with Bulgaria's environmental standards, as a condition for continuing their operations. The MOEW then co-ordinates with Bulgaria's privatisation agency to draft programmes for bringing ongoing enterprise operations into compliance with national environmental standards into the privatisation contract. The state takes over responsibility for financing actions to clean up past environmental damages.

Today the privatisation process is almost complete for large enterprises in most industrial sectors. Despite this progress, pollution from industry remains unacceptably high in some areas. While some branches of heavy industry have succeeded in achieving renewed viability, delays in privatisation of other branches have slowed industrial restructuring. Some problems remain with post-privatisation control (e.g. non-compliance with contractual obligations by new owners) and the viability of several management-buy-out companies.

Good housekeeping and low-cost investments are widely regarded as the most practical and cost-effective means of reducing industrial pollution levels, considering the severe financial problems that many Bulgarian enterprises face. The Clean Industry Centre at the Bulgarian Industrial Association is an important source of information and technical support for Bulgarian industries wishing to learn more about how to reduce the impact of their activities on the environment. Pilot programmes supported especially by bilateral donors such as USAID and The Danish Ministry of Environment have demonstrated the effectiveness of, and

potential economic returns from, a cleaner production approach. Bulgaria's efforts to set in place the framework for the EU's voluntary environmental management and audit scheme (EMAS) should also support this trend.

Major Challenges

As in many Western European countries, industrial policies largely ignore environmental considerations, and there is much that remains to be done to integrate environmental concerns into Bulgaria's industrial restructuring. Major challenges ahead for Bulgaria if it is to succeed in achieving integration of environmental considerations into its industrial activities include:

- Development of programmes in "hot spot" areas involving enterprises, local government and the public aimed at improving local environmental conditions.
- Ensuring sufficient support for promoting good housekeeping in industrial management, including environmental audits to identify low-cost solutions for environmental improvement;
- Training to improve capacity on the part of both government and enterprises for environmental auditing and environmental management;
- Improved co-ordination between the MOEW and the relevant ministries involved in industrial policy formation, including those governing privatisation and economic development programmes, to promote "win-win" strategies such as cleaner production.

5.3 Agriculture

The agricultural sector is important for the Bulgarian economy accounting for 13.8 per cent of the GNP in 2000. The sector is even more vital when measured against employment as agriculture accounts for 26.7 per cent of total employment.[10] However some aspects of 'hidden unemployment' should be taken into account when comparing the weight against other sectors.

The latest EU Regular Report (2002) concludes; " Bulgaria has made considerable progress in adopting the legislation and steady efforts to organise its administrative structures (…) Substantial efforts will be necessary to develop the administrative, inspection and control mechanisms".

The process of restitution of ownership of agricultural land has been completed, while about 90 per cent of woodlands and forests have been restituted. The preparation of a national cadastre and property register is in progress. Cadastral maps have been prepared for 90 per cent of the territory in connection with

[10] *Eurostat figures*

restoration of private ownership. However the property register does not yet provide the necessary legal certainty.

The government has prepared a draft national strategy for development of the agricultural sector and rural development. The overall aim is to achieve a level of production and development that will facilitate integration into the European Union. Three priorities relate to preparation for the common market: i) efficient management of land and forest resources and development of market structures, ii) enhancement of the competitiveness of the farming and processing sector and creating conditions for export oriented agriculture and iii) preparation for meeting the general conditions for receiving EU subsidies as laid down in the Common Agricultural Policy. In addition, two main priorities relate to the integration of social and environmental protection interests into the agricultural policy. These are: i) sustainable development of rural areas and improvement of the living conditions for employees in agriculture and forestry and ii) environment-friendly sustainable management of forest and hunting resources and protected wilderness tracts.

A law has been adopted on organic farming aiming at implementing the acquis on production, marketing, labelling, inspection and import of organic products. A Commission on Organic Farming has been put in place and a department on agro-environment is formed in MOAF with four persons. While the de facto area of land farmed under organic principles at present is substantial, the land certified as organic farming is very small, probably only amounting to 500 hectare.

MOAF is partly accredited to operate the SAPAARD programme according to the principles of extended decentralisation implementation system (EDIS), and a full accreditation is expected within a year. At that time the ministry will be authorised to manage the environmental component. As discussed later in the report the SAPARD allocation to specific agro-environment purposes is quite small.

All farms applying for SAPARD support will in future have to adhere to the codes of good agricultural practices including restricted distribution of fertiliser etc. Also the programme may allow for providing additional support to farms located in vulnerable zones or territories of special environmental interests. Co-ordination has already been established with MOEW. Such initiative may be of particular importance when management plans for Special Areas of Conservation under the law on biodiversity are to be developed.

With regards to forestry, MOAF and the Ministry of the Interior have just signed a memorandum laying down the principles of the most urgent measures for forest fire prevention. During the recent years severe forest fires have hit Bulgaria and the memorandum is a step in the direction of preparing for better prevention and protection against forest fires.

Animal waste is a particular problem where significant further efforts are needed. Systems for collection of animal waste need to be expanded to cover the whole territory. The waste management system should be modernised by separating collection for the processing of risk materials, and there is a severe shortage in processing plants.

Further Challenges

The engagement of MOAF in setting up the regulation for environment-friendly farming and forestry practices is at a high level compared to agricultural ministries of many other accession countries. By establishing a dedicated unit for agro-environment and by being able to implement decentralised management of the SAPARD programme the ministry holds most of the instruments for implementing cross cutting environmental concerns. The ministry has also benefited form substantial international assistance.

A general challenge lays in implementing environment-friendly farming and forestry practices by setting up demonstration projects and training the extension officers situated in the extensive network across the country.

More significant the farming practices for ecological vulnerable zones need to be strengthened and this should be co-ordinated with the efforts to register and protect special areas for conservation under the biodiversity act. Imposing legal binding restriction of land use for such zones in combination with compensation schemes and development of management plans are likely to form main instruments.

5.4 Transport

The transport sector is a main contributor to air pollution and road construction may conflict with the conservation of nature values. The implementation of EU fuel quality and car emission standards are expected to achieve a significant reduction of the pollution load from the transport sector. In the short run though the pollution pressure is likely to increase as more second-hand cars are imported to the country. The public transport systems, which have been quite well developed, are showing signs of deterioration. The tram systems in the bigger towns lack modernisation and the restructuring of the railway company BDZ is progressing at a slow level.

However, the conclusions of the last EU regular report says: " Bulgaria has made steady overall progress, in particular in the fields of road and railway transport… Bulgaria has also gradually started to reinforce its administrative structures".

The main efforts are presently concentrated in developing the transnational road and railway network. An ambitious Euro 4.2 billion programme has been drafted for the period 2003 – 2005. The ISPA programme is planned to be a

main contributor providing half its allocation to the transport sector. The priority projects are linked to the EU programme on developing a Trans-European Transport Network where the national transportation network is connected and transactional transportation corridors are strengthened.

All transport infrastructure projects are already subject to Environmental Impact Assessments. These are not expected to cause problems, as most projects would be based on existing traces. However, practical experience indicates that environmental impacts can be significant and that the current practices of incorporating environmental impact assessment in technical feasibility studies need to be upgraded. The EU regular report concludes: "More attention should be given to ensuring that feasibility studies for construction work comply with EU environmental rules, notably the preparation of sound and complete Environmental Impact Assessments, a necessary condition for any Community funding for a construction project".

Further Challenges

While the air emissions are dealt with in a comprehensive manner by the air quality directives, there is a need for preparing overall transport development plans that promote resource efficient mechanisms through strengthening of public transport.

There is also a need to integrate more effectively the strategic environmental impact assessments in the plans for the transport sector. Further efforts are needed for applying environmental impact assessment to concrete infrastructure development projects.

6. Financing Environmental Investments

This chapter discusses the issues faced by Bulgaria in relation to the financing of the investment needed by Bulgaria in order to achieve full compliance with the environmental acquis. The investment needed to achieve compliance with the EU environmental acquis is a major challenge for Bulgaria, as it is for all other Candidate Countries. The EU's 2002 Regular Report recognises the importance of this issue:

"Significant investments are needed to ensure the implementation of the environment acquis."

The chapter will quantify the need for investment, identify the sources of capital, and examine the extent to which this is 'affordable' by Bulgaria.

The Need for Investment

Estimates of the level of investment needed in individual sectors have already been presented. However, it is instructive to examine the different estimates of overall levels of investment needed in Bulgaria, which have ranged from Euro 7,457 to 11,401 million. Please see Table 7.1. The most recent World Bank study is broadly consistent with others, and has been widely used. However, it does not include industrial pollution control – although upgrading of power plants is included in the air sector. In contrast, the TME study identifies the investment needs for compliance with the IPPC Directive alone as Euro 3,261 million.

Table 7.1: Estimates of Environmental Investment Needs in Bulgaria (million Euro)

Year	*Source*	*Water*	*Waste*	*Air*	*Industry*	*Other*	*Total*
1997	Compliance Costing for Approximation (EDC Ltd)	Not known					15,000
1999	Development of Implementation Strategies for Approximation (DISAE)	3,513	921	3,022	N/a	N/a	7,457
1999	European Environmental Priorities (various)	Not known					11,400
2000	Study (TME Ltd)	2,056	2,477	3,607	3,261	N/a	11,401
2001	Bulgaria: The Challenges of Complying with EU Environment Directives (World Bank) – Maximum figures	3,582	1,150	3,260	N/a	30	8,022

Sources: Studies listed in the table.

There is some consistency within recent studies that the total investment needed by Bulgaria to comply with the EU environmental acquis is around Euro 11,000 million. Another key conclusion from the analysis is that the investment needs are spread across the four main sectors, and that they are likely to be approximately equally divided between public and private sectors.

Cost and Affordability

By any standards the making of this level of investment is a major challenge for Bulgaria, with problems at three separate levels:

- Raising the capital for investment
- Repaying the capital (and interest)
- Meeting the related operating and maintenance costs

If the investment needs identified in the World Bank Study were implemented in full by 2015, this would represent an annualised investment cost over 20 years of Euro 942 million, and also generate an ongoing operating and maintenance cost of Euro 749 million. The total is Euro 205 per capita per year, which is broadly in line with the figures for Candidate Countries such as Poland, the Czech Republic and Hungary. However, the GDP of those countries is much higher than that of Bulgaria, where this level of investment represents 6.7 per cent of the projected GDP for 2015 compared to a more usual figure of 1.5 per cent to 2.5 per cent in most other Candidate Countries.

The situation is exacerbated by two further factors. Firstly, the high level of indebtedness of Bulgaria and the controls imposed by the International Monetary Fund reduce the flexibility of the government in identifying funding options and sources. The IMF sets limits on the percentage of GDP that can be used by the state to fund investment projects, and on the amount of government borrowings including sovereign guarantees. Similarly cautious economic policies are likely to continue at least until accession, based on the Currency Board Arrangement CBA that has contributed to Bulgaria's macroeconomic stability and sustained economic growth since 1998. Secondly, the high level of poverty in Bulgaria, estimated at 36 per cent calls into serious question the ability of the population to meet the higher charges for environmental services that will result. These costs might represent up to 24 per cent of the household budget in urban areas and 18 per cent in rural areas.

This issue of 'affordability' is significant. Not only can the Bulgarian state or local authorities not 'afford' to borrow the capital needed for investment, users cannot even afford to pay the full economic cost of the services that are provided. Experience elsewhere in the Candidate Countries indicates that these facts will both decrease payment rate and reduce demand. This has led to many plants being oversized, and clearly inhibits any private investors from realising an acceptable return on their investment.

This level of investment is an exceptionally demanding challenge for Bulgaria, representing as it does an annualised cost of 6.7 per cent of GDP. It is not yet clear how this unsustainable level of investment can be realised without placing unacceptable burdens on both state and citizens. There is a need for more work in this area, both to establish what level of investment would be economically and socially as well as environmentally sustainable, and to develop economic instruments and charging structures that will help to address these issues.

The Effects of Transitional Periods

Bulgaria has requested transitional periods for eight directives. Together, they account for an estimated minimum of Euro 6,321 million of investment or 58 per cent of the total investments. The key directive for which a transitional period has not been sought is the Drinking Water Directive, for which investment estimated at Euro 1,463 million will be required.

The most relevant issue here is that none of the dates requested for transitional periods are beyond 2015, which is the date by which the World Bank study assumes that all the necessary investment will have taken place. It follows that the transitional periods, even if granted at for the full period requested, would not materially affect the annualised investment costs identified above.

However, the EU has emphasised the need for more coherent financial planning in general, and for the preparation of comprehensive directive-specific implementation and financing plans for those directives for which transitional periods have been requested. The 2002 Regular Report states that:

"Bulgaria should focus on planning, identification and availability of financial resources…Equally, efforts to continue preparation and development of directive-specific implementation plans, including financing plans, require close attention." (Regular Report 2002)

Sources of Funding for Environmental Investments

In the late 1990s the actual level of expenditure on environmental projects in Bulgaria averaged Euro 114 million. It is recognised that annual expenditure has increased significantly since them, but at that rate of expenditure it would take no less than 72 years to achieve the level of investment identified in the World Bank report. However, the National Development Plan for the period 2000 to 2006 assumes that average investment will increase to Euro 412 million, which would allow the investment to be completed in less than 20 years.

Investments in air, water and waste alone are expected to total Euro 2,010 million over this seven-year period. The breakdown of funding sources for investment in these three sectors may be compared with the total environmental investment in 1997-98. Please see table 7.2. It is clear that this increase in environmental expenditure is an ambitious target. However, there would still be an average

shortfall of Euro 153 million per year compared to the level of investment needed to complete investment in these sectors by 2015.

Table 7.2: Sources of Funding for Environmental Investment in Bulgaria (million Euro)

Funding Source	*1997 & 1998 (Annual Average)*		*2000 to 2006 (Annual Average)*	
	M€	*%*	*M €*	*%*
State budget (including transfer to municipalities)	2.6	2.2%	12.0	4.2%
Municipalities (excluding transfers from state budget)	8.6	7.5%	5.6	2.0%
Environmental Funds (National Environmental Protection Fund)	11.4	10.0%	26.0	9.0%
EU programmes (primarily ISPA)	Not included in totals		52.0	18.1%
Companies/enterprises	91.5	80.3%	176.4	61.4%
Loans	Included in 'companies'		15.1	5.3%
Total	114	100%	287	100%

Source: National Economic Development Plan 2000 – 2006

Within this framework, it is clear that the three main providers of investment funds from within the Bulgarian public sector are:

The National Environmental Protection Fund raises funds primarily from taxes on fuels (77 per cent), from privatisation (18 per cent) and from a share of environmental charges (3 per cent), and allocates no less than 91 per cent of this to environmental investment projects through grants and zero-interest loans. The role of environmental funds in the Candidate Countries remains uncertain in the face of state aid legislation, and the NEPF has recently been merged into the state budget. However, the EC stated in its 2002 Regular Report: "The existing limitations as to the use of the National Environmental Protection Fund … should not hamper public co-financing."

The state budget already provides funding for environmental projects, and this contribution is expected to increase significantly. The MoEW is clearly the main actor here, together with its agencies such as the Regional Environmental Inspectorates, the Executive Environmental Agencies and municipalities. However, other ministries and state agencies also play their own roles in

investment management and the provision of finance. These include the Ministry of Agriculture and Forests, the Ministry of Regional Development and Public Works and the Ministry of Energy and Energy Resources.

Municipalities are key stakeholders in the environmental investment process, but have in practice only played a relatively limited role so far. Overall, there are 262 municipalities and 28 planning districts in Bulgaria, and the municipalities in particular have a key role in the planning and implementation of investment in the water and waste sectors. Many have Municipal Environmental Protection Funds linked to individual municipalities and raising funds from a share of environmental charges. However, the budgets are small.

The planned increase in investment will be difficult to achieve in practice, which makes it all the more important to have ready an appropriate, prioritised project pipeline and a clearly-defined financing strategy based at least in part on known, receptive funding agencies. In this context, it is particularly important to reinforce the role played by local authorities beyond project identification.

Training at all levels in the commercial aspects of project preparation, together with technical assistance in the preparation of prioritised regional investment plans will feed into the directive specific implementation plans. This should be implemented not solely through the MOEW but also through other relevant ministries and state agencies particularly the Ministry of Regional Development and Public Works.

It will include work to improve the capacity of experts and private sector consultants in Bulgaria in this field. Most of the 'local' training will inevitably need to be carried out by localexperts.

The Role of EU Programmes

European Union programmes already play a significant role in Bulgaria, both in funding investment in environmental projects and in providing related technical assistance. In general there are three different groups of EU funding programmes that can be considered:

- Pre-Accession Programmes, for which Bulgaria will only be eligible up to the point at which it becomes a member of the European Union;
- Post Accession Programmes**,** for which Bulgaria will only be eligible following the date of accession;
- Sectoral Programmes, for example relating to environment or energy, and for which Bulgaria may be eligible prior to accession (this has to be determined on a case-by-case basis) and will be eligible after accession.

There are three separate pre-accession programmes, Phare, ISPA and SAPARD, which together have an annual budget of around Euro 3,000 million per year.

However, the budget available to Bulgaria is to increase substantially. The roadmap for Bulgaria's accession implies that the budget will increase by 20 per cent in 2004, 30 per cent in 2005 and 40 per cent in 2005 as compared to the average level between 2001 – 2003.

EU funding programmes and particularly ISPA pre-accession and post accession funds will play a key role in Bulgaria's environmental financing strategy. However, at present it seems that Bulgaria's capacity to take-up the funds will be more of a barrier than the availability of funds. It is clear that there are both institutional and training issues to be addressed here. As programmes become more decentralised e.g. through EDIS, support will be needed to facilitate the efficient and effective management of pipelines and investment programmes.

The Role of the International Financial Institutions

Many international financial institutions (IFIs) are already active in financing environmental projects in Bulgaria. These include the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (IEB) and various members of the World Bank Group. Most IFIs provide 'soft' loans, which are particularly valuable where repayments can be deferred until the plant is operating and generating income through consumer charges.

The European Bank for Reconstruction and Development (EBRD) had invested Euro 394 million in Bulgaria by 31/9/01. The EBRD has a clearly defined strategy of supporting infrastructure projects in Bulgaria, including municipal/ environmental infrastructure, the power/energy sector and energy efficiency. In particular, it expects to be particularly active in the power generation, district heating, water and solid waste sectors. With the exception of district heating these are all areas where major investment will be needed to meet EU requirements, and the EBRD expects to co-fund projects in Bulgaria with the ISPA programme as it has in other Candidate Countries.

At the same point, the European Investment Bank (EIB) had invested Euro 909 million in 19 projects in Bulgaria, including the environment sector. Like the EBRD the EIB is specifically focused on energy and environmental protection, and expects this part of its business in Bulgaria to expand. The EIB also co-finances ISPA projects, and has also co-financed projects with the EBRD.

The World Bank Group has already committed over USD 1,500 million to 27 projects. The World Bank itself has funded a number of infrastructure projects in Bulgaria including a major project on wetlands restoration and pollution reduction. Key projects in Bulgaria include support for water companies restructuring and modernisation.

In many instances the IFIs have benefited from the pilot projects started by bilateral donors. This includes the DANCEE projects in the water and air quality

sectors. Often projects are prepared with bilateral donor assistance while the major part of the investment is provided by the IFI.

The IFIs will also play an important role in financing environmental investment projects in Bulgaria, particularly where co-funding is needed to complement grants from EU programmes such as ISPA. IFIs complain of the same problems and barriers to investment that have already been identified. There is a clear need for an 'honest broker' to act as a catalyst between IFIs, EU programmes and project proponent, with the objective of ensuring that requirements are harmonised and that they are understood and fulfilled by project developers.

The Role of Bilateral Donors

The main bilateral donors are Japan, the USA and the EU Member States, including Denmark, as well as Switzerland. In environment alone the Danish DANCEE programme has been one of the biggest bilateral programmes.

The main donors are listed in Table 7.3. Although these figures date back to the late 1990s, they still broadly indicate those European countries that are most active in Bulgaria.

Table 7.3 : Investment in Bulgaria by Bilateral Donors (million US$)

Country	***Investment 1995 to 1998***	***Country***	***Investment 1995 to 1998***
Austria	4.14	Netherlands	20.96
Belgium	4.00	Spain	1.16
Denmark	5.22	Switzerland	36.22
France	7.70	United Kingdom	16.75
Germany	47.86	USA	152.57
Greece	4.07	Other	2.07
Japan	146.40	***Total***	***450.09***

Source: UNECE Environmental Performance Review of Bulgaria, September 2000

When Bulgaria started a fast-track process of complying with the EU environmental legislation in 1999, the DANCEE strategy was revised with the aim of giving a high priority to assisting Bulgaria in meeting the associated legal, administrative and infrastructure requirements. Over the last ten years The Danish Ministry of Environment has supported 45 projects in Bulgaria, with a contribution of DKK 141 million towards a total project cost of DKK 246 million.

Switzerland is focussing on environment, local government, small and medium enterprises, social sector, the Netherlands is focussing on energy, social

transformation, regional co-operation, and the British Know-How Fund has priorities on public sector, civil society, financial markets, and social welfare. The Swiss support environmental projects focused on protecting biodiversity, making sustainable use of agricultural and forestry resources, optimising water management, and reducing polluting emissions and their effects. Germany has supported major planning initiatives, including the development of a manual for the assessment and remediation of past contamination.

The Japan International Co-operation Agency has supported a number of major environmental projects in Bulgaria, including the establishment of an Energy Efficiency Centre and a Master Plan Study on Integrated Water Resources Management covering the whole country. The former may be a stepping-stone for further work on the promotion of co-operation on climate change mitigation measures and the implementation of JI.

The US Agency for International Development has been active in Bulgaria since 1990 and has now committed over USD 420 million to the country. Key priority areas include environment and energy, but the environmental focus has primarily been on biodiversity and protected areas and on environmental trade links rather than the heavy investment directives. However, in the energy sector USAID has promoted investment in energy efficiency projects at local level, with a strong focus on commercial issues, proposal preparation and risk reduction.

In practice bilateral donors are likely to act more as facilitators than investors. In relation to climate change, energy efficiency and renewable energy, there will be opportunities for using Joint Implementation not only to implement 'complete' projects but also within a broader funding portfolio. Although this is not always in 'heavy investment' areas or driven by key directives, it will still help to free other funding sources for these areas.

The Role of the Private Sector

The key role of the private sector in funding environmental investment in Bulgaria, both now and in the future, has already been emphasised. In practice, there are three separate roles to be considered:

- Private sector funding of private sector projects for example, expenditure by industry to achieve compliance with the IPPC Directive;
- Private sector funding of public sector projects for example, a loan by a private bank to a municipality to finance investment in a wastewater treatment plant or landfill site;
- Private sector implementation of a 'traditional' public sector project for example, private development and operation of a landfill site;

- Joint public-private implementation of a 'traditional' public sector project for example, developing and operating the landfill site as a public-private partnership (PPP) project.

The first and second options are relatively straightforward, and constrained only by market forces, by interest rates and by EU state aid and/or competition law. One other relevant issue is the financial standing of the municipality (linked to its borrowing power) and the collateral that it can offer. For many municipalities there will clearly be issues relating to the balance between their borrowing powers and the projects that they need to invest in. These are not simply environmental projects, but also schools and other essential local services. Even within the environmental sector there can be problems, with for example investment in a new wastewater treatment plant implying that there is no longer any prospect of borrowing to fund a new landfill site – which may be more important from an environmental perspective.

These third and fourth options need to be considered much more carefully, since the approach used can have a profound influence on any grants that might be obtained from EU programmes such as ISPA. There will also be issues surrounding the implementation of PPP projects, of which there is very little experience in Bulgaria – particularly at the local level at which such projects will inevitably arise.

There remains a great deal of uncertainty over the funding regimes that can apply to PPP projects or to 'public' infrastructure projects implemented by the private sector. This is a complex area, and one in which clear guidance from the EU particularly relating to the ISPA programme is eagerly awaited. Although the issues identified above cannot be resolved by a third party, there is clearly an opportunity for providing clearer guidance on the mechanisms for implementing projects using PPP. This guidance needs to be disseminated at local level, where further 'hands on' support will also be needed.

Overall Financial Challenges

Overall, the key issue is undoubtedly the enormous scale of investment facing Bulgaria as it moves to comply in full with the EU environmental acquis. The total investment is likely to be more than Euro 10,000 million; leading to an annualised cost that represents 6.7 per cent of GDP if the investment takes place over the period to 2015. It is not yet clear how this can be realised without placing an intolerable economic burden on both institutions and citizens. Transitional periods will not impact significantly on this level of expenditure, because no periods beyond 2015 have been requested.

Current plans foresee a major increase in the amount of state funding, but this still accounts for only 15.2 per cent of the total. EU funds will provide 18.1 per cent, although this is likely to increase beyond 2004 and again on Bulgaria's

accession. The private sector is expected to account for well over half of the total, with 61.4 per cent as direct funding and a further 5.3 per cent through private bank loans. In practice, significant levels of co-funding should be obtainable from IFIs in the form of 'soft loans', and the possibility of limited funding from bilateral donors cannot be discounted.

Despite these problems, it is clear that the main barriers to investment are not financial but rather relate to project identification, development and preparation for submission to funding agencies. The phrases used to describe these problems are common to a range of different organisations on both sides of the funding 'fence'.

7. Conclusions and Perspectives

Bulgaria has achieved substantial progress in developing the legal framework on environmental protection during the last years. The country is likely to be able to meet its target of transposing all EU directives prior to 2000 before 2003. There is still a substantial part of the EU environmental regulation on industrial pollution control, chemicals control, genetically modified organisms and water quality management that needs to be introduced into national legislation. However, initiatives have been launched for developing the necessary legislation both with own and with international assistance from the EU Phare programme and with planned support from the Danish Ministry of the Environment.

Concerning the implementation of legal framework into practical administration carried out from national and regional executive bodies, Bulgaria has progressed. The Government recognises the demanding task of setting up systems for granting permits, monitoring inspection and enforcement of environmental regulation. A strategy for modernising the public administration strives to double the staff capacity at regional level already in 2003, and new units such as the River Basin Directorates are formed in line with EU directives. It should be noted that regulation of large industrial facilities according to the IPPC directive is not yet in place at field level. Also for other directives there is a need for substantial extra efforts before the practical regulation and enforcement is on par with that of the EU countries.

Thus, there is a demanding task ahead in developing the regulatory procedures, and forming and staffing the executive units. Bulgaria benefits from the 'best practice modalities' developed within EU countries and the professional networks that have been established in the development of monitoring and enforcement systems. There are no overall assessments of the effectiveness of the regulatory systems as of now, but it is found that without extraordinary activities it is less likely that the administration will be on par with that of other EU countries by 2007. There is a need for upgrading analytical apparatus, setting administrative practices in place and training of planners and inspectors. Also there is a need for an extra effort in linking Bulgarian inspection and monitoring bodies up to pan-European professional networks to ensure performance according to EU standards.

Bulgaria is going to spend a higher share of its national income on private and public investments on meeting the new and stricter requirements as compared to most other candidate countries. The public sector spending is estimated to amount to 6.7 per cent of the GDP if all investments are completed by 2015. The environmental investments are hampered by the public spending restrictions imposed by the currency board arrangement and by the low affordability to pay for the services by households of Bulgaria's regions.

Implementation of some of the directives requires substantial investments that will be impossible for Bulgaria to acquire within the coming four years. An agreement with the EU Commission has therefore been entered that allow for additional transitional periods until 2010 and 2015. The conditions are that Bulgaria presents action plans with realistic implementation plans and financing strategies. Transitional periods have been requested for the following directives:

- Sulphur content of liquid fuels
- VOC emissions from storage of petrol
- VOC emissions from solvents
- Packaging & packaging waste
- Landfill of waste
- Urban waste water treatment
- Discharge of certain dangerous substances
- Integrated industrial pollution prevention and control

Action plans are under preparation and implementation has started, but at an inadequate pace. As an example the target is to construct some 300 wastewater treatment plants, but during the last three years the construction of only ten plants has started.

The similar pattern is acknowledged for landfilling of waste. Some 14 facilities have either been constructed or are under construction currently compared with a target of at least 56 regional landfills for household waste. A plan for establishing a national and regional network of treatment and deposit facilities for hazardous waste has not been approved yet.

The Danish Ministry of the Environment and other bilateral donors have promoted the implementation of the directives by establishing demonstration facilities and preparing feasibility studies for the EU ISPA and other programmes. However, cumbersome procedures sometimes combined with changing priorities have delayed the use of these funds. After four years of operation the contractual arrangements are finally prepared for starting the construction work of the first ISPA project. There is therefore a further need to improve the planning of investment projects by setting up better project pipelines and to prepare the project technically through feasibility studies. The Bulgarian Government has addressed the issue by expanding the ISPA offices at the two responsible

ministries, but it is likely that further technical assistance in speeding their operations up is required from donors.

The private sector investments in industrial pollution prevention and control are also a major challenge. Three – four hundred larger industrial facilities are to be subject to integrated permits regulating emissions to air, water, and soil. Until now only five permits are prepared on a pilot basis, and a unit for issuing permits has just been formed. The challenge is to establish the full administrative capacity on the one side and on the other side to mobilise private sector investments into the required remediation activities. The Bulgarian Government and business sector is addressing the problems, but the compliance will be costly for many plants and even too costly for other plants. The national refinery, as an example, is going to be fully replaced if the stricter standards to sulphur content in fuels are to be implemented. The investments for this plant alone amounts to Euro 1.5 billion. It is therefore likely that the implementation of industrial pollution requirements will spur the phasing out of old industries causing both economic and social problems if not compensated.

The EU Commission's position is that transitional periods can only be granted if these are based on realistic action plans that take the availability of financial resources and implementation capacity into account. The Bulgarian Government is currently in the process of updating the cost estimates. However, there is an immediate need for preparing action programmes for the investment heavy directives with realistic financing and attainable goals. It is found that full compliance within a 12-year period requires effectively prepared projects combined with mobilisation of both national and international financing resources.

The horizontal planning at municipal and regional level needs also to be strengthened in order to promote local government and also to ensure better cross-sector prioritisation between different national action programmes.

The socio-economic standing of the country and especially the low capacity by domestic users to finance the investments has to be taken into account along with the relatively old stock of technologies in the manufacturing and processing industry. Therefore there is a need for promoting cost-effective technologies. Also, there is a need to turn the financial instruments such as ISPA into a more flexible instrument and to strengthen the planning and preparation of the concrete investments.

Several studies point to the fact that the cost of complying with the EU environmental legislation is a high burden on the Bulgarian economy compared with other accession countries. At the same time studies show that the environmental benefits are also among the highest. Therefore there is good

sense in placing many efforts in meeting the EU requirements from a Bulgarian perspective.

The present member states will also have a direct stake in Bulgaria's compliance with EU environmental requirements. The direct positive effects are related to reducing trans-boundary pollution. However, when Bulgaria enters into the EU it becomes part of the decentralised EU system for environmental protection management. There is a risk that lower *de factor* standards may emerge within the Union if Bulgaria will not be able to meet the stricter EU standards. This may in turn imply that Bulgaria will have to opt for lower EU standards given the potential backlog on environmental performance. Thus, there is an interest from member states to ensure and assist Bulgaria in being able to comply with the EU directives by the date of accession and with as few exemptions as possible.

It is foreseen that bilateral assistance during the remaining pre-accession period can continue to play a significant role. DANCEE and similar programmes have proven able to catalyse the process of reaching EU compliance by providing flexible and risk-based support that complements the large-scale support programmes provided by the Bulgarians themselves as well as the EU Commission and international financing institutions.

8. Summary in Danish

Bulgariens bestræbelser på at imødekomme EUs miljøkrav

Bulgarien vil sammen med Rumænien søge optagelse i EU i en anden runde efter de første kandidatlande. Under EU-topmødet i København aftaltes en målsætning om, at Bulgarien opnår medlemsskab i 2007. Det giver yderligere fire år til blandt andet at indføre EUs miljødirektiver.

Under det danske EU-formandsskab blev en handleplan lagt på bordet for Bulgariens og Rumæniens afsluttende forberedelser til optagelse i EU. Planen fokuserer på generel styrkelse af administrativ og juridisk kapacitet samt på gennemførelse af økonomiske reformer. Miljøområdet er dog også udpeget som et indsatsområde i lyset af de store uløste problemer. Der lægges samtidig op til en gradvis forøgelse af EU-støtten med 20, 30 og 40 procent i de kommende tre år.

Miljøet er et af de vanskelige områder at leve op til for Bulgarien. En ny miljøforvaltning skal opbygges, og indførelse af miljøteknologi er dyr. I sammenligning med andre kandidatlande skal Bulgarien anvende en meget stor del af den nationale økonomi på private og offentlige miljøinvesteringer. Analyser viser imidlertid samtidig, at Bulgarien vil være det af ansøgerlandene, der vil få den største miljøgevinst ved indførelse af EUs krav.

Rapportens indhold er blevet efterspurgt af de bulgarske miljømyndigheder i et samarbejde med Miljøstyrelsen, som en form for afslutning på det dansk-bulgarske arbejde. Formålet er at vise status og påpege muligheder for løsningerne af opgaverne.

Første skridt er indførelse af EU-direktiverne i bulgarsk lovgivning. Her er man nået langt gennem en intensiv indsats. Målet er at indføre de gamle direktiver fra før 2000 allerede i 2003. På langt de fleste områder er den grundlæggende lovgivning allerede på plads. Der er begrundet forventning til, at EUs samlede miljølovgivning vil være på plads inden tidsrammens udløb. Der er dog betydelige lovområder, hvor lovforberedende arbejde stadig er nødvendigt, og hvor supplerende regulering skal forberedes. Det gælder inden for begrænsning af industriforurening (IPPC-direktivet), kemikalekontrol og regulering af genmodifiserede organismer. Der er dog allerede igangsat initiativer blandt andet med omfattende støtte fra EU Phare Twinning programmet.

Andet skridt er udmøntning af lovgivning i den praktiske forvaltning. Dette er ressourcekrævende og kræver betydelige ændringer i den eksisterende forvaltningskultur. Der er ikke tvivl om, at opbygningen af den nye miljøforvaltning skal foregå i et øget tempo, hvis Bulgarien skal være på niveau med medlemslandene inden for en kort årrække. Det er afgørende at opnå dette niveau, da administrationen af EU-miljøpolitikken netop foregår decentralt i medlemslandene.

Vandmiljø er et spydsspidsområde, hvor man blandt andet med bilateral støtte allerede er nået langt. Bulgarerne er i gang med at indføre nye principper om sammenhængende vandmiljøforvaltning på linie med medlemslandene. På andre områder er bulgarerne længere bagud. Specielt inden for begrænsning af industriforurening og kemikaliekontrol ligger der en stor opgave, der næsten ikke er påbegyndt. Andre store opgaver ligger i at opbygge EU-akkrediterede miljølaboratorier, styrke de centrale og regionale tilsynsmyndigheder samt sikre håndhævelse af krav og påbud.

De overordnede principper for forvaltning af miljøområderne skal være på plads inden optagelsen. Der er derfor øget pres på, at den nødvendige forvaltning opbygges på ganske få år. Den bulgarske regering anerkender behovet. En reform for modernisering af den offentlige sektor indebærer, at medarbejderstaben i den regionale miljøforvaltning fordobles allerede til næste år. Det vurderes dog, at der stadig er behov for at indføre systemer og styrke udnyttelsen af erfaringer fra medlemslandenes forvaltninger.

Tredje skridt i imødekommelsen af EU's miljøkrav er, at offentlige og private sektorer foretager de nødvendige miljøinvesteringer. Bulgarerne har på en række områder foreslået overgangsperioder frem til 2010 – 2015. Det drejer sig om:

- Svovlindhold i brændstof
- VOC-udledning fra opbevaring af brændstof
- VOC-udledning fra opløsningsmidler
- Emballagedirektivet
- Lossepladsdirektivet
- Udledning af farlige stoffer til vandmiljøet
- Begrænsning og kontrol af industriforurening (IPPC-direktivet)

Overgangsperioderne skal knyttes til realistiske planer, der kan anvise, hvordan investeringsmål kan opfyldes inden for en fastlagt tidsramme. Generelt skal planerne vise, at investeringstakten kan øges markant. Investeringsbehovene er store og kan illustreres ved et par eksempler. De seneste år er der igangsat byggeri af ti nye anlæg for byspildevandsbehandling, hvor målet er 300 nye anlæg. Tilsvarende er der påbegyndt anlæg af 14 kontrollerede lossepladser, hvor målet er 56 regionale lossepladser. Et system til behandling og deponering af farligt affald er ikke blevet igangsat, skønt det tekniske design har været på plads i flere år.

De offentlige investeringer er begrænset af en svag udnyttelse af EU programmerne, specielt ISPA-programmet. Først efter tre års virke står det første ISPA-støttede projekt foran praktisk gennemførelse. I en periode med besværlige EU-arbejdsgange har bilaterale donorer haft en vigtig rolle gennem etablering af demonstrationsanlæg og ved at yde teknisk bistand til forberedelse af projekter. Der er fortsat behov for bilateral støtte til styrkelse af planlægningsenheder i centraladministrationen og på kommunalt niveau. Der er også fortsat brug for pilotanlæg, der kan afprøve og demonstrere nye teknologier i landet. Det gælder blandt andet prisbillige miljøtekniske løsninger, der kan opfylde EUs miljøkrav.

De private investeringer i fornyelse af industrianlæg mv. er en anden stor udfordring. Mellem 300- 400 industrianlæg skønnes at skulle godkendes efter de omfattende regler i IPPC-direktivet. Hidtil er der kun gennemført fem godkendelser på et midlertidigt grundlag. En del anlæg vil uden tvivl være for dyre at modernisere, og der er dermed en risiko for, at miljøreglerne vil fremskynde afviklingen af en del af den forældede industri. Der kan derfor være behov for dels at støtte den miljømæssige omstilling i visse tilfælde og i andre tilfælde at yde hjælp til en erhvervsmæssig omstilling, hvor miljøinvesteringerne vil være for dyre.

De nuværende medlemslande vil have direkte interesse i, at Bulgarien gennemfører alle tre skridt for at leve fuldstændigt op til EU-miljøkravene. Begrænsning af grænseoverskridende forurening giver direkte miljøeffekter. Der kan også være en interesse i, at Bulgarien opbygger en effektiv miljøforvaltning på linie med de nuværende EU-lande. Et medlemskab på et for tidligt grundlag kan udgøre en fare for, at landet i realiteten kun vil efterleve lavere miljøstandarder. Dermed er der risiko for, at lavere miljøstandarder accepteres i en bredere kreds af medlemslande.

Bilateral støtte har hidtil spillet en væsentlig rolle. Miljøstøtteordningen for Østeuropa og tilsvarende programmer har vist, at de ved at yde fleksibel og risikovillig støtte, er i stand til at styrke processen hen imod imødekommelse af EUs miljøkrav. Med de store reformkrav og det store tidspres forventes der fortsat at være behov for en sådan støtte.

List of Abbreviations

BAT	Best available techniques
BATREF	BAT Reference Documents
CAP	Community programme on Agriculture
DANCEE	Danish Co-operation for Environment in Eastern Europe
EBRD	European Bank for Reconstruction and Development
EDIS	Extended decentralisation implementation System
EIA	Environmental impact assessment
EIB	European Investment Bank
ELV	Emission limit values
EPR	Emitted Pollutant Register
ETPR	Emitted and Transferred Pollutant Register
EU	European Union
GHG	Greenhouse gases
IAEA	International Atomic Energy Agency
IFI	International financing institutions
IPPC	Integrated pollution prevention and control
ISO	International Standardisation Organisation
ISPA	Structural Instrument for Pre-Accession
JI	Joint implementation
MEUR	Million euros
MoEW	Ministry of Environment and Water
MoF	Ministry of Finance
MoH	Ministry of Health
MoPWRD	Ministry of Public Works and Regional Development
NGO	Non-governmental organisation
OP	Operational Programme
SAC	Special areas of conservation
SAPARD	Special accession programme for agriculture and rural development
UWWTD	Urban Wastewater Treatment Directive
VOC	Volatile organic compounds
WFD	Water Framework Directive

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Abstract During the summit of the European Council in December 2002 in Copenhagen a major milestone was reached in completing the EU enlargement project. The summit also reaffirmed the irreversibility of the accession proces for Bulgaria. The aim of this strategic analysis is to identify the key problem areas and challenges to be addressed during the pre-accession phase relating to implementation of the EU environmental acquis and to environmental protection and sector integration in general.

Terms Environment, Central and Eastern Europe, DANCEE, Bulgaria, EU accession, enlargement, acquis

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PROJECT PAMPHLET

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