REPUBLIC OF BULGARIA

COUNCIL OF MINISTERS

NATIONAL STRATEGY FOR INTEGRATED DEVELOPMENT OF THE INFRASTRUCTURE OF THE REPUBLIC OF BULGARIA AND ACTION PLAN FOR THE PERIOD 2006 - 2015

May 2006

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INTRODUCTION

The National Strategy for Integrated Development of the Technical Infrastructure summarizes the intentions, objectives and priorities of the Government's investment policy over the period 2006-2015.

The main objective is to establish a long-term framework for integrated development of the infrastructure.

The Action Plan for the implementation of priority projects reflects the political will of the Government to prepare and carry out specific projects conforming to the objectives and priorities as out in the Strategy, taking into account the existing opportunities for financing from various sources.

The main parameters ensuring the effective implementation of the National Strategy and the Action Plan on a medium-term basis are as follows:

Attainment of the Government's programmatic objectives in the field of the investment policy over the period 2005-2009;

Consideration of the new realities in identifying the major priorities for the development of the technical and social infrastructure, including those generated by Bulgaria's accession to the European Economic Area and the fulfillment of the commitments under the EU Accession Treaty;

Enhancement of the efficiency of budget investment costs;

Creation of the financial and organisational prerequisites needed for improved pipeline of projects and smooth implementation of national investment programmes and projects;

Realistic financial planning of capital costs from the perspective of the opportunities for budget financing, including lending from international banking institutions with sovereign guarantees;

Creation of the institutional, organisational and administrative prerequisites needed for promotion of the public private partnership in the investment sphere;

Improvement of the legal framework related to the implementation of investment projects.

I. TRANSPORT INFRASTRUCTURE

I.1 Introduction

The development of the transport sector in Bulgaria should create the necessary conditions for the economic and social development of the country, provide efficient and sustainable transport, support the balanced regional development, and speed up the country's integration into the European economic area.

In view of the preparation of the Republic of Bulgaria for membership of the European Union and the integration of our transport system into the pan-European one, considerable efforts have been made to introduce and ensure the European standards for the establishment of modern environmentally friendly and secure transport and for the harmonisation of the Bulgarian legislation with the *acquis*. Major structural reforms have been carried out, enhancing the competitiveness of the sector through change of ownership in the transport sector and entry of numerous private companies into the market of transport services, which has upgraded the quality of the service provided.

The development, modernization and maintenance of the transport infrastructure represent a major stage in this process. The insufficient investment in the transport infrastructure over the last decades and the increased demand for transport services call for a new long-term approach to its development, maintenance and modernization aimed at its successful integration into the European transport system.

The successful establishment of transport infrastructure facilities is related to the need for a clear long-term vision, financial resources, determination and commitment on part of all institutions and organisations involved in the implementation of specific projects. Very important is the ensuring of conditions and prerequisites for absorption of the substantial resources from the EU funds, for which the government has to prepare economically efficient and socially justified infrastructure projects and provide for their future co-financing from national sources.

The recurrent shortage of financial resources needs to be overcome by means of a new policy, procedures and conditions for strengthening the public private partnership, which will relieve the government from operational activities relating to the maintenance, completion and modernization of ports, airports and some roads within the national road network.

I.2 Analysis of the Condition of the Bulgarian Infrastructure

I.2.1 Railway Infrastructure

I.2.1.1 Condition of Railroads and Facilities

The railway infrastructure within the territory of the Republic of Bulgaria has a total length of 4,316 km. There are 39 km of railways per 1,000 sq km of the total area of the country. One could conclude that Bulgaria has rather high density of existing railroads compared to Eastern European countries. Most railways were constructed over 50 years ago, with geometric parameters, understructure and facilities for speed of up to 100 km/h. The sections doubled for the last 20 or thirty years have basic technical parameters which allow limited speed of movement. The total length of railways is 7,326 km, 7,000 out of which have track-gauge of 1,435 mm (see Table 1).

Table 1. Total Length of the Railway Networks

Total Length of the Railway Network	Length

	(km)
Single railroads with normal track-gauge (1,435 mm)	3 102
Doubled railroads with normal track-gauge (2 x 969 km)	1 938
Station tracks with normal gauge	1 960
Single narrow-gauge railroads (760 mm)	245
Narrow-gauge station tracks	51
Station tracks with wide track-gauge (1,520 mm)	30
Total	7 326

The railway system is not sufficiently interconnected with those of neighbouring countries. The main transitions are as follows: to Turkey via Svilengrad – Kapukule border transition; to Greece via Svilengrad – Dikea and Kulata – Promahon; to Serbia and Montenegro via Dragoman – Dimitrovgrad; to Romania via the only bridge over the river Danube in the Bulgarian-Romanian section at Ruse – Giurgiu and the land transition Kardam – Negru Voda (both in the eastern part of the country). The ferry in Varna provides opportunities for transportation of railway carriages via the Black Sea.

The railway network includes:

843 railway crossings;

147 tunnels with total length of 44,500 m along the railroads with normal track-gauge;

41 tunnels along the narrow-gauge railroads;

1,018 railway bridges with total length of 26,400 m;

over 8,000 switches.

The shortage of funds to maintain and repair railways and related facilities results in:

(a) poor condition of the infrastructure, which necessitates for speed limits along almost three-quarters of the railway network;

(b) longer overhaul intervals and hence substantial deterioration of their technical condition;

(c) critical condition of the operational aspects and limited capacity of the railway network.

The condition of the individual railway elements is the following:

- The railway bed has insufficient bearing capacity at some places;
- The network has over 700 thousand armoured concrete sleepers which are worn out;
- Elements of the clamp between sleepers and rails are worn out at some places;
- Considerable railway sections have largely worn out PAC 68I clamps;
- Mainly second-hand rails have been used since 1989;
- Since 1992 no new switches have been supplied and installed, except for the minimum amount of switches installed within the framework of the rehabilitation programme;
- Some railway sections have their security factor reserve almost exhausted; conditions occur there for faster worsening of the railway parameters and of the comfort of railway transport;
- The total quality index at these and other sections exceeds the threshold for the respective design speed which calls for train speed limitations;
- The major problems with steel railway bridges are the high corrosion levels, the leakage of lead under the bearings, structural cracks, weakened links and impaired waterproofing;
- The main problems in tunnels relate to the lack of waterproofing.

I.2.1.2 Condition of the Safety Equipment and Telecommunications

Safety Equipment

Two out of the existing railway stations are equipped with microcomputer centralized control devices, 213 have relay traffic interlocking central control, 50 have electromechanical central control and one has mechanical central control, 103 operate key-based relay devices and 40 stations are equipped with traffic lights with no safety equipment.

The shortage of financial resources for the maintenance and development of facilities leads to shorter life cycles which have long expired in many cases.

Most systems are worn out, which leads to frequent traffic disruptions and enhanced judgmental dimension of traffic control. 339 km of inter-station systems are equipped with automatic blocks, while 2,920 km have semi-automatic blocks. A few inter-station systems are secured with signal-free blocks and 781.5 km are equipped with axle counters and automatic blocks without crossing signalling. 302 out of the 843 crossings have automatic signalling, only 153 have electrical barriers and 83 have automatic barriers, i.e. more than a half (51.9%) of the crossings rely only on the human factor.

Telecommunications

Trunk line cables were installed over the period 1960 – 1990. The railway infrastructure has only 140 km of optical cables. Transmission systems are of the 12-channel analogue type; 23 telephone exchanges are digital and sixty are electro-mechanical. These and other elements of the telecommunication systems are at a very low technological level against the background of the development rates in this sphere and the existing new technologies.

Radio Communications

The railway transport network uses a system imported from Germany, which meets the UIC requirements. 400 locomotives and engine-driven sections have equipment on board and 2,500 km are covered by line equipment. It is urgent to undertake the renovation and rehabilitation of aerial transmission systems to maintain the technical parameters of the system and to provide normal voice communication.

Power Supply

There are 373 switchgears, 1.130 lighting piers, 2,290 heated switches and 169 km of mains, including those which supply power for lighting of platforms and adjacent areas. These facilities need to be maintained and there is also the need for reporting power consumption but the equipment for this purpose is obsolete and there are no devices (electric meters) to report the consumption by various carriers.

I.2.1.3 Condition of Power Equipment

Bulgaria occupies a leading position among Eastern European countries in terms of completed railway electrification. 4,882 km or 67% of the total length of the railway network are electrified railway lines.

Contact System

The condition of the contact system in terms of duration of operation is the following:

35 to 45 years	25%
25 to 35 years	22%
10 to 25 years	43%
up to 10 years	10%

At present, 1,400 km of the total length of the contact system need to be replaced.

Traction Substations

49 stationary substations and one mobile traction substation are located within the territory of the Republic of Bulgaria. The exist problems with the commuter equipment, batteries and other elements of low reliability, which do not comply with the remote control requirements and the European norms and standards.

I.2.1.4 Railway Lines and Combined Transport Terminals

The Bulgarian railway lines within the scope of the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) are as follows:

Ruse – Gorna Oryahovitsa – Dubovo – Dimitrovgrad **(310 km)**

Sofia – Mezdra – Gorna Oryahovitsa – Kaspichan – Varna **(543 km)**

Dragoman – Sofia – Plovdiv – Dimitrovgrad – Svilengrad **(382 km)**

Plovdiv – Zimnitsa – Karnobat – Burgas **(294 km)**

Vidin – Sofia **(279 km)**

Sofia – Kulata **(210 km)**

Furthermore, the European Agreement covers the following facilities:

the terminals within the territory of the Republic of Bulgaria which are important for international combined transport lines, including: Burgas, Dimitrovgrad-North, Filipovo, Gorna Oryahovitsa, Ruse, Sofia, Stara Zagora and Varna;

the border crossing points of the Republic of Bulgaria which are important for international combined transport lines, including: Dragoman, Ruse, Svilengrad, Vidin, Kulata;

railway-ferry points/ports within the international combined transport network – Vidin.

Container Terminals

There are **eight** inland specialised container terminals and **three** terminals at the Black Sea as follows:

railway container terminals at the stations of Sofia – Cargo, Plovdiv – Filipovo, Dimitrovgrad– North, Stara Zagora, Gorna Oryahovitsa (Chestovo - Cargo), Pleven-West and Vratsa (portal cranes are out of operation at the last three terminals);

specialised container terminals at sea ports Varna-East, Varna-West and Burgas.

The main facilities of domestic and international container transportation were built in the 1970's and the 1980's.

Conclusions about the Condition of the Railway Infrastructure

The national railway network substantially lags behind the standards of the networks in many European countries.

The policy pursued with regard to the railway infrastructure is aimed at renovation and/or repair of specific sections, which does not change the overall transport capacity of Bulgarian railways;

The programmes worked out for the maintenance and development of the railway infrastructure lack the resources needed for their implementation, which leads to lags in the repair works for the maintenance of the infrastructure;

The technologies applied are morally and physically obsolete, which generates high maintenance costs;

For the last ten years, only 806 km or 18.6 % of the total length of the railway network have been renovated and average repair has been carried out on 790 km of main railway lines and only 41 km of secondary lines, which is insufficient for the adjustment of the railway infrastructure to European standards;

The condition of the combined transport railway infrastructure does not meet the requirements of modern freight transportation services;

Terminals need equipment in accordance with the combined transport requirements and the infrastructure along the main lines should be modernized, including improvement of the technical condition of lines and facilities as parts of the pan-European transport network and provision of the gauge needed for combined transport along these routes.

Generally, the condition of the railway infrastructure calls for urgent measures to recover, improve and increase the technical and operational parameters of railways, the contact network, and the communication and safety equipment primarily along the railway lines within the framework of the pan-European transport corridors.

I.2.2 Ports

Ports are important centres for the development of the whole transport sector. They account for 60% of all freight imports and exports and thus they have a great impact on the overall economic development. The system consists of two types of ports: **river and sea ports**. Upon the accession of this country to the European Union, the Black Sea ports will turn into an eastern border of the EU. In future, they will perform mainly transit functions, serving to link the EU with countries in Central Asia, the Middle and Far East and the Black Sea countries.

I.2.2.1 Condition of the Port Infrastructure. Trends

The main infrastructure of Bulgarian ports was built basically 50 years ago, except for the port of Varna-West, the Varna ferry facility, and the RoRo terminals in Oryahovo and Ruse. The fright processing capacity is estimated at about 30 to 35 mn tons for sea ports and some 10 mn tons for the Danubian ports. Investments in the maintenance and development of ports have been insufficient over the recent years, affecting the adaptability of the port infrastructure to the market demand. There is a need to re-allocation of main port facilities. The port facilities in Varna (Varna-East terminal), Burgas (Burgas-East terminal and, generally, the whole port), Ruse and Svishtov, which were built in the beginning of last century, as well as those in Nesebar, Sozopol, Pomorie, Tsarevo and Ahtopol fall within the boundaries of the central urban areas, creating some urban development and environmental problems. In order to overcome these problems, investments in port development should focus on:

Re-allocation of port facilities for processing of bulk freight and other items causing environmental problems outside the boundaries of the wide urban centres;

Re-organisation of the port facilities situated in the wide urban centres mainly into ports serving passengers, sports and recreational and business areas;

Creation of opportunities for mooring of ships with greater loading capacity by means of deepening the waters and access areas, providing sufficient abutment bays and manoeuvring areas;

Improvement of the navigation conditions along the river Danube by removing bottlenecks;

Rehabilitation and strengthening of port equipment like wharf walls, breakwater facilities, port areas and other elements of the port infrastructure;

Specialization of port terminals, modernization of the loading and unloading equipment and improvement of the organisation of works;

Modernization of the security and safety systems of ports;

Adjustment of port facilities and systems to the international and national environmental requirements;

Provision of receptacles for the collection of treatment of wastes from shops and port operations.

The main parameters of public transport ports are described in **Appendix I.1.**

I.2.2.2 Sea and River Port Operations

The total freight transport at **sea** ports follows an upward trend. 23.5 mn tons of freight were handled in 2004, scoring a growth rate of 10% on a year-to-year basis, while in 2005 there were over 25 mn tons or 6.5% more than in 2004.

That growth was due mainly to liquid bulk freight increasing by 14.5% n 2005 compared to 2004 with a total growth rate of 32% over the whole six-year period (2000–2005). Container handling also developed positively with a growth rate of 5.3% in 2005 on a year-to-year basis and an overall increase of over two-and-a-half times over the period 2000–2005. There was a decline only in the handling of general freight by almost 4% in 2005 compared to 2004.

In 2005, the overall freight transport at **river** ports grew at accelerated rates of 22.7% on a year-to-year basis, the overall growth being over 85% for the six-year period under review (2000–2005).

Liquid bulk freight accounted for the major share of that growth, increasing seven time in 2005 on a year-to-year basis, together with coastwise transport which increased by 106% in 2005 compared to 2004. Over 50% of the growth of coastwise transport was due to the registration of new public transport ports of regional importance.

No containers were handled at sea ports during the period under review and solid bulk and general freight scored a slight decline of 6% and 3.5% respectively. There was a substantial decrease of almost 17% in the handling of RoRo items.

Although still having a small share, transit transport increased by 24.5% in 2005 on a year-to-year basis. Imports increased insignificantly by 1.4%, while exports decreased by 9.5%.

The positive growth of the Bulgarian economy produces direct impact on the development of Bulgarian ports through the increased freight imports and exports. The major industries influencing freight transport are the following:

Oil industries – import of oil and export of oil products;

Metallurgy – import of ore, coke and semi-finished metallurgical products and export of metallurgical goods and scrap;

Energy – import of coal;

Construction – export of cement, domestic transport and export of inert materials, import and export of building materials and structures;

Agriculture – export and import of grain and feeds;

Chemical industry – export and smaller import of fertilizers;

Light industries and other manufacturing sectors – import and export of various general and containerized freight;

Entertainment and tourist industries – provision of services to passengers and tourists.

Statistics reveals a trend towards changed structure of freight transport, in which the share of container and RoRo transport grows at the expense of bulk freight. Nevertheless, the global tendencies and Bulgaria's lagging behind in multi-modal transport call for even higher growth rates of container and RoRo transport at the expense of bulk and general freight after 2007.

The forecast growth of freight handling at sea ports will be achieved almost entirely through an increase of container and RoRo transport. Container transport is assumed to reach 220 thousand TEU in 2007 and 900 thousand TEU in 2015. RoRo transport is expected to follow the same trend, i.e. some 0.8 mn tons in 2007 and 4 to 5 mn tons by 2015.

These estimates are forecast on the basis of statistical extrapolation by types of freight and modes of transport and, in accordance with the forecast national economic development indicators, they point to the following volumes:

Table 2. Estimated Freight Volumes at Sea and River Ports

Year	Sea Ports, mn tons	River Ports, mn tons	Total, mn tons
2007	26.1	5.6	31.7
2015	34.7	8.3	43.0

The development of the land infrastructure should bring about substantial growth of RoRo transport between the Bulgarian Danubian ports and the ports located across on the Romanian coast. Statistics points to reduction of the number of vehicles handled in 2002 compared to 2001. In the following years, the transport flows stabilized at about 156 thousand vehicles annually.

After the setting into operation of the second bridge over the Danube, the transport across the river between Vidin and Kalafat and Oryahovo Beket is expected to decrease to 40 or 50 thousand transport units annually. The two ferries will remain as alternatives to the bridge, which are capable of attracting transport flows at competitive prices. On the other hand, one can expect increased flow between small Bulgarian and Romanian ports due to the easier customs clearance after the accession of both countries to the European Union. New RoRo lines and RoRo platform ports will be opened in most riparian cities, mainly Silistra, Svishtov, Nikopol and others.

It is important to note also the trends related to the accelerated growth of the share of tourism and light and food industries in the total revenues, as well as the development of some specific industries through which Bulgaria will find its place in the global economy.

As to the orientation of Bulgarian imports and exports, the main conclusions reveal reduced trade exchange with Russia, Ukraine and the other CIS countries. However, the structure of the Bulgarian economy will be decisive; the import of raw materials and the export of metals and semi-finished products will continue to rely on water transport, regardless of the destination.

Bulgaria's accession to the European Union will create conditions for new redistribution of trade flows along the following lines:

Increased flows via Bulgarian sea ports to Central Asian ports and the TRASECA corridor. It is only logical for Bulgaria to turn into a logistic centre for the Central Asian and Caucasian countries, encouraging the development of transit transport;

Increased flows, mainly ferries and passengers, to and from Romania;

Growing flows from and to Central Europe along the river Danube, mainly passengers and RoRo transport.

I.2.2.3 Development and Modernization of Freight Handling Technologies

The development and modernization of freight handling technologies are natural processes in the context of the global economic development. As a result, there is market supply of sophisticated and highly productive re-loading equipment specialised by freight types; communication systems and electronic equipment; modern software. The objective is to reach the following major results:

To enhance the productivity of the re-loading process and hence to reduce the time for stay of ships at ports;

To improve the quality of the port services offered. All ports must have obtained quality assurance certificate under BDS EU ISO 9001 – 2001 by 2007;

To upgrade the security of vessels and ports and the safety of ports through improved control of freight and passengers. The requirement to have an ISPS-Code certificate will be a must for all ports with international operations after 2007;

To introduce organisation and equipment for protection of the environment on port sites, including the collection and treatment of wastes from ships in accordance with the requirements of Directive 2000/59/EC and from port operations. The organisation in compliance with the Directive will become mandatory for all Bulgarian ports after 2007.

I.2.3 Airports

The air transport infrastructure includes the airport infrastructure (in terms of geographical location of airports and also in terms of the equipment available at each airport) and the infrastructure of the Air Traffic Control State-owned Enterprise ensuring the safety of flights. Since the latter is considered to be well developed and characterized by capital innovations and maintenance, it complies with modern requirements. For this reason, the Strategy reviews only the airport infrastructure.

The Republic of Bulgaria has **five operational international airports** for public transport and some 150 airfields for the needs of the agricultural aviation. The airports of Ruse and Stara Zagora (independent entities) and that of Turgovishte (registered in the capital of the airport of Burgas) are currently out of operation.

All international airports have a take-off and landing runway each and opportunities to handle aircraft code D[1], and code E[2] in Burgas. They are equipped with modern air navigation systems which enable their operation under weather conditions CAT I[3] (Plovdiv and Gorna Oryahovitsa), and CAT II in Sofia, Varna and Burgas.

Over the recent years, there has been observed keen interest on part of the private sector in certifying and using small agricultural airports (airfields)[4]. The length of their runways varies from 400 to 600 m and they can handle aircraft of up to 5,700 kg and 19 passenger seats.

[1] "D" – wing spread from 36 to 52 m and distance between the external wheels of the main undercarriage from 9 to 14 m.

[2] "E" – wing spread from 52 to 65 m and distance between the external wheels of the main undercarriage from 9 to 14 m.

[3] ICAO categories (I, II and III in ascending order) of airports and runway systems in accordance with their light equipment, meteorological and air navigation equipment and management.

[4] Airfields are intended for aviation operators performing specialised flights (including air chemical works) and other types of air navigation activities.

The main passenger flows (almost 99%) are oriented to the airports of Sofia, Varna and Burgas. For the last five years, the total passenger flow at these airports has been growing by 16.8% p.a. on the average, reaching from 2,125,309 passengers in 1999 to 5,022,915 passengers in 2005.

The share of airports in the total passenger flows has changed, bringing Varna and Burgas close to Sofia, and the airport of Burgas ranking second.

Very typical is the marked seasonality of the operation of the airports of Varna and Burgas, where most of the flights are concentrated during the four simmer months. Similar is the situation with the airport of Plovdiv but its busiest season is during the four winter months.

I.2.3.1 Airport of Sofia EAD

The airport of Sofia is the largest and best equipped airport in the country. It accounts for 37% (2005) of all passengers using air transport. The existing infrastructure and buildings at the airport are in unsatisfactory condition. The passenger terminal has limited capacity and equipment, which produces an adverse impact on the quality and efficiency of services. The condition of the runway and the platform does not meet modern standards.

The airport reconstruction and modernization project is intended to overcome the existing weaknesses by setting into operation:

A new passenger terminal and adjacent infrastructure – Lot B1, with capacity to serve:

2.6 mn passengers a year; (2005 – 1,855,832 passengers);

500 passengers at peak hours;

20 aircraft movements[5] at peak hours;

26,000 tons of cargo exchange annually (2005 – 14,725 tons of cargo and mail).

A new runway system – Lot B2 with the following parameters:

a new runway for take-off and landing (3 600 m x 45 m plus safety side strips; currently – 2 800 m x 45 m), with capacity to handle the largest modern aircraft;

new aircraft taxiways;

ground lighting of the flying area, modern navigation devices (ICAO category II);

fire and emergency safety sub-station;

anti-icing site, service roads, drainage system.

The completion of this extension is expected to resolve the problems of the airport for the period until 2015. According to the current forecasts, the expected passenger flow is estimated between 2.7 and 3.7 mn passengers per annum. The use of the existing passenger halls may continue in the case of more intensive passenger traffic and serving of low-cost air carriers.

I.2.3.2 Port of Varna EAD

Generally, the airport infrastructure meets the requirements for an international airport for public use. It has:

a take-off and landing runway – 2 500 m x 45 m;

a traffic control centre – ICAO Category II;

well developed road network connecting the airport to the area;

[5] „total aircraft movements" means all take-offs and landings of commercial flights, as well as general flights, training flights, technical stop-over, and trial flights, except for flights with state-owned aircraft – Additional provisions, § 1, subpara 7 of Ordinance № RD-08-20 of 14 January 1999 concerning the collection of statistical data on civil aviation in the Republic of Bulgaria.

very rapid growth of air traffic over the last few years;

aircraft movements – 1999 – 9,030; 2005 – 13,616, i.e. 59% increase;

passenger flow – 1999 – 511,819 passengers; 2005 – 1,546,925 passengers, i.e. three-fold increase.

The fact that almost 99% of the passenger flow consists of tourists coming during the four summer months of the year is the precondition for the major problem of the airport, i.e. the lack of sufficient areas to handle passengers and cargo during this period.

I.2.3.3 Airport of Burgas EAD

The airport infrastructure meets, in principle, the requirements for an international airport for public use and has the following parameters:

a take-off and landing runway – 3 200 m x 45 m;

a traffic control centre – ICAO Category II;

well developed road network connecting the airport to the area.

For the last few years, air traffic has increased very quickly and the growth rates are much higher at the airport of Burgas compared to those of the airport of Varna as follows:

aircraft movements – 1999 – 6,148; 2005 – 12,496, i.e. doubled;

passenger flow – 1999 – 339,297 passengers; 2005 – 1,555,630 passengers, i.e. a 4.5 times increase.

The passenger flow consists mainly of tourists coming during the four summer months of the year and the major problem of the airport is the lack of sufficient areas to handle passengers and cargo during this period.

The investment policy for the development of the airports of Varna and Burgas is oriented to public-private partnerships.

I.2.3.4 Airport of Plovdiv EAD

The airport of Plovdiv has the status of an international airport. The land and the runway for take-off and landing are state-owned property in the public domain managed by the Ministry of Defence. The airport is categorized in conditional group II, together with the airport of Gorna Oryahovitsa.

The runway for take-off and landing at the airport of Plovdiv is 2,500 m long, and the platform has eight places. The handling capacity of the airport is 150 passengers per hour. For the time being, the passenger terminal does not offer the required standards for passenger service. Cargo flights are also handled, currently at the level of some 4,500 tons annually.

The traffic at the airport of Plovdiv has grown rapidly for the last two years. The data are the following:

aircraft movements – 1999 – 1,348; 2005 – 1,598, i.e. 18.5% increase;

passenger flow – 1999 – 38,811 passengers; 2005 – 66,168 passengers[6], i.e. 70% increase.

[6] The 2005 data include 980 aircraft movements and 1,971 passengers of non-commercial flights, which are quite substantial for the airport of Plovdiv.

I.2.3.5 Airport of Gorna Oryahovitsa EAD

The airport of Gorna Oryahovitsa has the status of an international airport. The land and part of the facilities are state-owned property in the public domain managed by the Ministry of Defence. The airport has a take-off runway which is 2,450 m long, a taxiway, five aircraft places and lighting system Category I for night-time and day-time take-off under conditions of reduced visibility. The passenger terminal is in good shape but it has been built and equipped to serve domestic flights.

The traffic at the airport has increased for the recent years:

aircraft movements – 1999 – 1,494; 2005 – 3,842, i.e. increase by 157 %;

passenger flow – 1999 – 167 passengers; 2005 – 331 passengers, i.e. 98% increase.

There is a trend towards increased aircraft movements of initial training flights for which no landing fees are paid under the Law on Civil Aviation (LCA). This affects the economic efficiency of the company operating the airport.

I.2.3.6 Airport of Ruse EOOD

The airport is out of operation. It has no Operational Fitness Certificate. It is fully owned by the state. In accordance with protocol of Delivery and Acceptance dated 7 April 2005 and pursuant to Order No. R-85 of the Minister of Defence, the state ownership of the airport in the public domain has been transferred and accepted for management by the Ministry of Transport. Conditions have been created to give a concession on the operation of the airport. The airport has the potential to handle charter flights (passengers and cargo), general flights and low-cost carriers.

It is located at the point of intersection of trans-European Transport Corridors Nos. VII and IX.

I.2.3.7 Airport of Turgovishte

The airport of Turgovishte has been out of operation since 1991. It has no Operational Fitness Certificate. At present, it is included in the registered capital of the Airport of Burgas EAD which provides only its guarding.

The airport is located 10 km to the east of the city of Turgovishte and some 110 km from the city of Varna. It is in the vicinity of Hemus motorway which is under construction. This fact (about one-hour drive to Varna) and the abilities to serve the three regions of Turgovishte, Razgrad and Shumen in the north-eastern part of the country underpin its future development potential.

I.2.3.8 Airport of Stara Zagora EOOD

The Airport of Stara Zagora EOOD is 100% state-owned and its principal is the Minister of Transport. The airport has been out of operation for some two decades and has no Operational Fitness Certificate. The flight area and and part of the facilities are state-owned property in the public domain managed by the Ministry of Defence. It is located at some 170 km away from the city of Burgas.

I.2.4 Roads

The total length of the national road network of motorways and roads falling into Classes I, II and III was **19,276 km** as of 31 December 2005, distributed into grades as follows:

Motorways	-	331 km
Roads Class I	-	2,961 km
Roads Class II	-	4,012 km
Roads Class III	-	11,730 km
Road connections at junctions and crossroads	-	242 km

Paved national roads account for 98.4% of all roads, whereby 92.5% of the pavement is asphalt covering and 82.8% have bearing capacity of 10 т/axis. The length of unpaved roads is 272.1 km or 1.41% of the total length. At present, only 12 settlements are not connected to the road network (61.2 km).

Local (municipal and private) roads have a total length of over 24 thousand km. Additionally; the street network in settlements is over 60 thousand km long.

The overall density of the whole road network is 0.39 km/km², which is lower than the EU-15 average (about 0.51 km/km²) but higher than the density in countries like Poland, Slovakia and Turkey and at the same level as that of Latvia, Lithuania, Romania and Slovenia. In terms of density of the national road network (0.171 km/km²), Bulgaria is above the EU-15 average (0.09 km/km²) and that of all "new" EU Member States, except Hungary and the Czech Republic, lagging substantially behind in terms of the motorway density. Taking into account the fact that some 40% of the territory of Bulgaria is mountainous and therefore sparsely populated, the density of the road network is generally well developed. The classification of national roads is administrative and it does not reflect the technical features of the road and the traffic intensity, except for motorways. In 1999, when the new classification was approved, roads of Class IV were excluded from the national road network. 5,256.6 km out of them were re-classified from Class IV into Class III. The main idea was to keep the routes ensuring the transport connections between municipal centres and groups of smaller communities in the respective municipalities within the national road network. Those roads were designed and built in accordance with the requirements for Class IV and, for this reason, they do not meet the requirements for Class III at present. Some of them are in extremely poor repair.

In this sense, the main road network of the country, i.e. roads with the most intensive traffic, includes motorways and some roads of Classes I and II and even Class III.

A sizeable portion of national roads has not been repaired for more than 15 to 20 years, although the standard is 5 to 7 years for regular repair and 12 years for overhaul. Most re-classified roads need reconstruction in order to be adjusted to the standards for Class III.

The coverage of the national territory with motorways and four- and three-lane roads is uneven. The east-west directions are better developed than the north-south directions and the service to peripheral areas along the southern border, the Danube and between pan-European Corridors Nos. IV and IX has deteriorated.

Due to the recurrent shortage of resources for maintenance purposes and the delayed repair works, the condition of the national road network is unsatisfactory. The main indicator is the condition of the pavement which is assessed in accordance with the existing methodology for measuring and evaluation of damages to road pavements, taking into account the type and quantity of existing damages measures and evaluated in comparison to the total area of roads, as follows:

Good condition – pavement damages below 10 %;

Average condition – pavement damages from 10 % to 30 %;

Poor condition – pavement damages over 30 %.

Statistics shows that since 1990 planned road repair works have been reduced and the condition of road pavement has started to worsen. This has taken shape as a long-term trend which continues to date.

The condition of the road pavement of the national road network as of 31 December 2005 is described in Table 3.

Table 3. Condition of Road Pavement

Paveme	M	Cla	Class	Class	Road	Total	%

nt Condition	W	ss I	II	III	Connections		
Good	232	1503	1461	3185	156	6537	34 %
Average	88	562	1170	3810	71	5702	29 %
Poor	11	896	1381	4735	14	7037	37 %
TOTAL	331	2961	4012	11730	242	19276	100 %

Statistical data show that the length of roads in good condition continuously decreased. The most substantial deterioration of road pavement was observed from 1992 to 1997.

At present, over 12,000 km or more than 60% of national paved roads need reconstruction, overhaul or regular repair.

It should be noted on the basis of the socio-economic data on the development of the country

On the basis of the socio-economic data on the development of the country one should note the fact that the development of the market economy and the accession to the European Community increase foreign investment, which will bring about substantial increase of the needs of road traffic in the next 10 to 20 years. In this sense, areas which lag behind in their development are expected to change their course of development. The analysis of the penetration of motor vehicles in the country for the last few years is an indicator to assess the need for measures aimed at improving the road infrastructure.

At present, the motor vehicles fleet in the country includes some 3,000,000 automobiles, out of which 75% are light vehicles. The penetration of motor vehicles in the country has been growing steadily for the recent years at 3.5% annually. The distribution is uneven throughout the country. For instance, Pleven, Veliko Turnovo and Ruse account for 9% of the automobile fleet, whereas Sofia and Varna account for 33% .

The inflow of foreign tourists has recently been growing, too, at some 15% per annum. 74% of them visit the country with automobiles. A major problem in the development of automobile tourism is the condition of the road network.

The expected accession of this country to the European Union in 2007 will speed up tourist inflows and hence increase the requirements on the road network.

The development of road repair works in areas with lower automobile penetration rates, where wages are lower and unemployment rates are higher than the average for the country, would reduce unemployment and increase revenues from the tourist industry, i.e. the labour market would improve substantially.

Larger investments in the road sector should be planned for these areas, as this sector is crucial for socio-economic development.

The main priority of the road policy is to develop the road network in the context of the international commitments undertaken by the Republic of Bulgaria (international and regional programmes and initiatives for road infrastructure development).

The main conclusions on the condition of the road infrastructure are as follows:

The shortage of financial resources prevents the observance of the statutory repair intervals, which leads to multiplication of the ageing effect and considerable increase of costs for

current repairs and maintenance of pavements. For the same reason, available technical projects, especially for rehabilitation purposes, need to be re-worked;

The interval between the preparation of projects and their implementation is too long and often accompanied by changes in the legal framework, i.e. expiration of the validity terms of documents relating to the expropriation of sites for construction purposes, EIA reports and decisions, etc.;

The tendency towards overall worsening of the condition of national roads persists. In 2004 and 2005, the length of roads in good condition decreased by 1444.6 km and 700 km respectively;

The condition of Class III roads, which are very important for local communities, is extremely poor and most of them have not been repaired for over twenty years;

It is necessary to complete and reconstruct the busiest sections of the national road network whose throughput is either depleted or close to depletion;

Ring roads are needed and connections along the north-south direction need to be established in the main roads network, laying the emphasis on the roads in the TEN-T network.

I.2.5 Geostrategic Analysis

The favourable geographical location of the Republic of Bulgaria provides great opportunities for its transformation into a transport bridge between Western and Central European countries, the Middle East, Western and Central Asia and along the north-south direction. Furthermore, the better connection to the transport systems of neighbouring countries provides substantial opportunities for Bulgaria to supplement and change routes and thus optimize the transport traffic.

The European transport policy presented in the White Paper *European Transport Policy for 2010: Time to Decide* focuses on the interrelation and equal treatment of the various types of transport and the need for striking a balance in transport so that to reach greater efficiency, come closer to the dynamism of market relations and comply with the modern requirements for security and protection of the environment.

Member States should focus their efforts on the improvement of the European transport system along the following major lines:

Development of the Trans-European Transport Network (TEN-T);

Transfer/re-allocation of freight from road transport to railway, sea and inland water transport;

Development of modern public transport with a view to reducing the use of private vehicles and decreasing carbon oxide emissions;

Increased share of private capital in transport development schemes.

Pan-European Transport Corridors

The favourable geographical location of the country is materialized in the fact that five pan-European transport corridors cross the territory of Bulgaria: IV, VII, VIII, IX and X – **Appendix No. I.2.** This is as positive as demanding because it calls for huge investment primarily in the improvement and maintenance of the existing infrastructure and the construction of lacking infrastructure. In this sense, the proper identification of short-, medium and long-term priorities is of paramount importance for the attainment of the expected benefits. The identification of these priorities should take into account the policy of EU Member States with regard to the **Trans-European Transport Network** and the policy of neighbouring countries in the region.

The five transport corridors crossing the territory of Bulgaria as defined by the pan-European Conferences of Ministers of Transport in Crete (1994) and Helsinki (1997) are as follows:

Pan-European Transport Corridor IV

Dresden/Nuremberg – Prague – Vienna/Bratislava – Budapest – Arad – Bucharest – Constanta/Craiova – **Sofia – Thessaloniki/Plovdiv – Istanbul**

Pan-European Transport Corridor VII

The river Danube

Pan-European Transport Corridor VIII

Bari/Brindisi – Durres/Vllora – Tirana – Kafasan - Skopje – **Sofia – Plovdiv – Burgas/Varna with:**

Byala/Gorna Oryahovitsa – Pleven-Sofia, linking it to Corridors IV and IX

Pan-European Transport Corridor IX

Helsinki – Saint Petersburg-Moscow/Pskov – Kiev – Lyubashevka – Cishineu - Bucharest **Dimitrovgrad – Alexandroupolis**

Branch A: Odessa – Lyubashevka/Razdelna

Branch B: Kiev – Minsk – Vilnius – Claypeda/Kaliningrad

Pan-European Transport Corridor X

Salzburg – Lyubliana – Zageb – Belgrade – Nis – Skopje – Veles - Thessaloniki

Branch A: Graz – Maribor - Zagreb

Branch B: Budapest – Novi Sad - Belgrade

Branch C: **Nis - Sofia (Dimitrovgrad – Istanbul along the route of Corridor IV)**

Branch D: Veles – Prilep – Bitolja – Florina – Via Ignatia - Igoumenitsa

TINA Network

The project for the **Transport Infrastructure Needs Assessment (TINA)** plays an important part in the general coordination and development of links among corridors in the EU accession countries. TINA is a project of the European Commission with the ultimate goal to establish an extended trans-European network, including the transport networks of the 12 (as the case was in 1997) accession countries from Central and Eastern Europe. The elements of the TINA network are defined as follows:

Backbone network (main network) identical to the links and junctions of the ten multi-modal transport corridors within the territory of TINA countries;

Additional elements of the network as proposed by the three regional TINA sub-groups after the assessment of the proposals of each country in accordance with the concept of the trans-European transport networks and on the basis of costs assessment.

The additional elements of the TINA network within the Bulgarian territory are the following:

railway connection Mezdra – Pleven – Gorna Oryahovitsa;

railway connection Ruse – Kaspichan – Sindel;

road connection Botevgrad – Pleven – Byala;

road connection Svilengrad – Burgas.

Main Development Axes of the Trans-European Transport Network and Its Connection to Neighbouring Countries

In the course of the identification of priority directions, the process of development of the Trans-European Transport Network is of the greatest importance. In 2003, **the High Level Group Van Miert** for the updating of the development guidelines for the Trans-European Transport network specified two priority axes for the EU territory to cross the territory of Bulgaria: **Vidin-Sofia-Kulata (Corridor IV) and the river Danube (Corridor VII)** with the following priority projects: **Modernization of the Vidin-Sofia-Kulata Railway Line and Improvement of the Navigation on the River Danube.** A financial memorandum has been signed within the framework of the ISPA Programme for technical assistance to the modernization of the Vidin-Sofia railway line. The preparation of the project for **improvement of the navigation on the River Danube** has been proposed for funding under the new technical assistance instrument of the European Commission, the European Investment Bank and the European Bank for Reconstruction and Development JASPERS.

At the end of 2004, the European Commission established **High Level Group II chaired by Ms Loyola di Palasio** to identify the extension of the main trans-European axes to countries and regions neighbouring the European Union and to identify the priority projects for their development. Five main transport axes have been approved: Northern, Central, South-eastern and South-western, as well as the Main Sea Lines.

The territory of Bulgaria is crossed by **the South-eastern main axis** connecting the European Union via the Balkans and Turkey to the Caucasus and the Caspian Sea, as well as to Egypt and the Red Sea. Connections are envisaged with Albania and Macedonia, Iran, Iraq and the Persian Gulf. The main multi-modal connections via the territory of Bulgaria are as follows:

Pan-European Transport Corridor X – Branch C, connecting Belgrade – Nis – Sofia and from there along the route of Pan-European Transport Corridor IV – Istanbul - TRASECA;

Pan-European Transport Corridor VIII: starting from the Italian ports of Bari/Brindisi and going via Durres/Vllora – Tirana – Skopje – Sofia – Burgas /Varna;

The river Danube – the river Sava.

The main **sea lines** are those in **the Black Sea and its connection to the Mediterranean**, including: the links of the ports of **Varna and Burgas to the ports in Ukraine, Russia, Georgia and Turkey.**

The outline of the process of development of the trans-European network and its connections to neighbouring countries and regions lead to the following conclusions about the priority of the **main axes, corridors and connections** across the Bulgarian territory:

<u>Priority 1:</u> The Most Important Development Axes of the Trans-European Transport Network:

Vidin – Sofia – Kulata from Pan-European Transport Corridor IV;

Pan-European Transport Corridor VII: the river Danube.

<u>Priority 2:</u> The Most Important Axes Connecting the Trans-European Transport Network to Neighbouring Countries and Regions:

Pan-European Transport Corridor X – Branch C, connecting Belgrade – Nis – Sofia and from there along the route of Pan-European Transport Corridor IV – Istanbul - TRASECA;

Pan-European Transport Corridor VIII: Durres – Tirana – Skopje – Sofia – Plovdiv - Burgas /Varna;

Sea Lines; the links of the ports of Varna and Burgas to the ports in Ukraine, Russia, Georgia and Turkey

Priority 3: Pan-European Corridors Which Are Not Covered by the Main Axes:

Pan-European Transport Corridor IX: Bucharest – Ruse – Dimitrovgrad – Alexandroupolis.

Priority 4: Additional Connections in the TINA Nework:

the railway connection Mezdra – Pleven – Gorna Oryahovitsa;

the railway connection Ruse – Kaspichan – Sindel;

the road connection Botevgrad – Pleven – Byala;

the road connection Svilengrad – Burgas.

These axes corroborate the great importance of Bulgaria for the development of the Trans-European Transport Network and for its extension towards neighbouring countries and regions. The connection **Belgrade – Sofia – Istanbul – TRASECA** has taken shape as a priority axis supported by the traffic forecasts and the willingness of all countries involved to develop it within short time limits. The railway projects proposed by Turkey and Serbia, together with the ongoing and planned projects within the Bulgarian territory **(doubling and electrification of the Sofia-Plovdiv and Sofia-Dragoman sections)** will create conditions for high-speed long-distance railway transport along the route Western Europe – Hungary – Serbia – Bulgaria – Turkey – TRASECA.

Bulgaria is interested in the development of these transport connections. The development of the related transport infrastructure will create political and economic prerequisites for commercial and industrial prosperity and democratic market-oriented development of the countries in the region. Taking into account the fact that the European Commission will concentrate its resources on the development of the main axes as defined by the two High Level Groups, Bulgaria will focus its efforts on the preparation and implementation of projects along these axes.

I.3 SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats)

<table>
<tr><th colspan="2">NATIONAL TRANSPORT SYSTEM</th></tr>
<tr><th>Strengths:</th><th>Weaknesses:</th></tr>
<tr><td>Crossroad location of the country, enabling it to develop transit transport along pan-European transport corridors;
Politial stability in the country;
Traditionally competitive transport system;
Liberalized transport market;
High level of availability of transport infrastructure;
High degree of harmonisation of the transport legislation with the acquis;
Ongoing projects for development and modernization of the transport system.</td><td>Unsatisfactory technical condition and level of maintenance of the available transport infrastructure, obsolete transport schemes and technologies;
Low traffic failing to provide resources for the standard maintenance of the existing infrastructure;
Existence of “bottlenecks” in the transport infrastructure;
Insufficient coordination among the various types of transport;
Relatively closed transport system;
Recurrent shortage of investment, leading to safety problems and accident hazards.</td></tr>
<tr><th>Opportunities:</th><th>Threats:</th></tr>
<tr><td>Macroeconomic stability and sustainable growth of the economy and investments;
Increased EU resources for development and modernization of the transport infrastructure after the accession;
Integration into the single European market of transport services;
Attracting international transit traffic for full utilization of the crossroad location of the country;
Development of multi/intermodal corridors and logistic chains;
Speeding up of the processes of restructuring of the sector through privatisation and public-private partnership.</td><td>Delayed accession of the country to the European Union;
Delayed implementation of priority infrastructure projects;
The Republic of Bulgaria being circumvented by international traffic flows;
Delayed reforms, restructuring and modernization of the sector or some of its elements.</td></tr>
<tr><th colspan="2">RAILWAY TRANSPORT</th></tr>
<tr><th>Strengths:</th><th>Weaknesses:</th></tr>
<tr><td>High level of availability of the railway infrastructure, electrification and density of railway lines;
Stable market share in the transport of mass</td><td>Unsatisfactory technical condition and level of maintenance of the railway infrastructure;
Lack of railway lines allowing speed of 160 km/h for passenger transport and 120 km/h for</td></tr>
</table>

freight; Environmentally more friendly and safer than the other types of transport; High degree of harmonisation of the legislation concerning railway transport with the *acquis*.	freight transport; Failure to achieve the designed speed in most parts of the railway infrastructure; Use of technologies incompatible with those of the European Union.
Opportunities:	**Threats:**
Attracting foreign investors and operators; Provision of additional financing for the development of the railway infrastructure upon Bulgaria's accession to the EU; Modernization of the railway infrastructure and introduction of new technologies.	Delayed implementation of priority infrastructure projects; Bulgaria being circumvented by international traffic flows; Delayed introduction of new technologies and improvement of the technical condition of the railway infrastructure

SEA TRANSPORT	
Strengths:	**Weaknesses:**
High level of availability of port infrastructure; Good connections of the ports to the national road and railway network; Vacant capacity; Highly qualified personnel.	Unsatisfactory technical condition of port facilities and the re-loading equipment; Insufficient specialised terminals and shortage of modern logistic and information systems; Decline of transit freight transport; Insufficient security of ports; Limited draft in the access areas and the waters of the major Bulgarian ports. Limited abutment bay for the ships entering the Lake of Varna
Opportunities:	**Threats:**
Concessions on port terminals and liberalization of port services; Utilization of the vacant port capacity; Investment in regional and local infrastructure, providing access to the European infrastructure networks; Preparation of projects for financing under the EU Structural and Cohesion Funds; Increase of transit transport across the country; Modernization of the existing infrastructure and load handling equipment	Inefficient control of oil leaks; Insufficient receptacles for processing of oil products collected in accidents; Insufficient development of public-private partnership; Lack of investment interest on part of strategic investors; Recurrent shortage of financial resources for completion and maintenance of the existing infrastructure; Competition by the ports of Constanta and Thessaloniki.
INLAND WATER TRANSPORT	
Strengths:	**Weaknesses:**
High level of availability of port infrastructure; Existing good network of inland water transport ports; Good connections of the ports to the national road and railway network;	Unsatisfactory technical condition of port facilities and the re-loading equipment; Insufficient specialization of terminals; Shortage of modern logistic and information systems; Reduced parameters of the navigation route (guaranteed depths, widths and curve radius) in

Alignment to the European system of river navigation canals; Sufficient storage facilities at the current levels of traffic	some navigation sections at low water structures; Insufficient maintenance of the port infrastructure; Obsolete navigation security technologies; Insufficient security of ports
Opportunities:	**Threats:**
Concessions on ports and services; Increased passenger and freight traffic via Bulgarian ports; Utilization of the vacant port capacity; Development of intermodal corridors and logistic; Preparation of projects to apply for financing under the EU Structural and Cohesion; Opportunities for connecting to the European system of inland waterways; Introduction of new technologies and transport services	Lack of investment in new infrastructure and port technologies; Climatic factors affecting the year-round use of the river Danube (ice-break and reduced level of the river); Insufficient development of public-private partnership; Delayed implementation of priority projects
AIR TRANSPORT	
Strengths:	**Weaknesses:**
Favourable geographical location of the airports of Sofia, Varna and Burgas within the continent; Servicing an ever increasing passenger flow at the airports of Varna, Burgas and Plovdiv; Favourable location of small non-operational airports (Turgovishte, Stara Zagora) in the vicinity of the Black Sea coast; Competitive prices of most aviation services provided in air navigation and on the ground; Good qualifications of the aviation personnel at the airports; High qualification skills of the technical and engineering staff for the technical maintenance of aircraft; Existing modern air traffic control centre; High qualification skills of the air traffic control personnel	Insufficient capacity of airport runway systems and platforms to accommodate larger and heavier aircraft; Insufficient capacity of passenger and cargo terminals; Market irregularity and seasonality in the operation of airports serving tourist flows – Varna, Burgas and Plovdiv; Lack of up-to-date Master Plans for the development of all airports; State ownership in the public domain of the airfields (Gorna Oryahovitsa, Plovdiv, Stara Zagora) managed by the Ministry of Defence; Unjustified high prices of some ground services, e.g. ground fuelling
Opportunities:	**Threats:**
Development of the existing airports (except Sofia) through concessions to operators; Transformation of the airport of Sofia (after its reconstruction) into a regional transit/transfer centre;	Insufficient guarantees for the protection of state interests and those of air operators in the airport concessions; Irregular construction works and increased hotel capacity, threatening with reduction of the tourist

Longer tourist season and development of convention tourism and hence creation of opportunities for year-round operation of the airports of Varna, Burgas and Plovdiv through the opening of regular flights; Potential for development of non-operational airports ((Ruse, Turgovishte and Stara Zagora) though concessions to operators, creation of conditions for their use by low-cost air carriers, *or*: Creation of opportunities for their operation pursuant to Art. 43, para 2, subpara 2 LCA, *or*: Change of the status of the airport of Stara Zagora on the basis of a tender and its use to build a technical base to serve Western aircraft	flow (and the passenger flow respectively) at the airports of Varna and Burgas; Volatile fuel prices, preventing the development of a stable and practictable price policy in the provision of ground services
COMBINED TRANSPORT (TERMINALS)	
Strengths:	**Weaknesses:**
National main railway lines are part of the AGTC network; Available facilities for the organisation of combined transport and lack of gauge limitations; Up-to-date legal framework for the organisation of combined transport; Environmentally friendly and less expensive transport which does not harm the condition of roads	Obsolete facilities at the terminals; Lack of resources to maintain the existing combined transport terminals and to build new ones; Lack of specialised rolling stock for combined transport; Destinations are covered only partially; Lower transportation speed
Opportunities:	**Threats:**
Educed idle stays at border crossings after the accession to the EU; Increased traffic in the region after the setting into operation of the tunnel under the Bosporus; Strategic cooperation with foreign railway operators and combined transport companies; Development of the railway network	Insufficient development of the connections to neighbouring countries; Delayed construction of cargo settlements and logistic cargo chains
ROADS	
Strengths:	**Weaknesses:**
The level of availability and density of the road infrastructure does not generate problems with the access to all settlements;	Lack of ring roads of settlements and existence of sections with different technical and operational parameters which do not guarantee comfort and safety of traveling in accordance with the European standards;

The main road network along the pan-European transport corridors has been rehabilitated under the Transit Roads Programme and meets the European standards; The harmonisation of the legislation in the roads sector with the *acquis* has achieved substantial progress; Very small share of the road network has limited traffic carrying capacity; Favourable geographical location	Insufficient number of road connections to neighbouring countries; Poor maintenance of the road network due to the limited financial resources for these activities; Need for reconstruction of road pavements for axle loads in accordance with the European statutory requirements; Lack of ways to provide resources beyond the budget for road construction and maintenance
Opportunities:	**Threats:**
The good geostrategic location, creating opportunities for development of the road transport sector and attracting foreign investors; The completion of the motorway network will increase the share of international transport and foster the development of tourism; Provision of substantial financing for development of the road infrastructure upon Bulgaria's accession to the EU; Integration with the road networks of neighbouring and European countries	Delayed implementation of priority infrastructure projects; Bulgaria being circumvented by international transit and passenger transport and traveling; Delayed introduction of new technologies and improvement of the technical condition of the road infrastructure; Existence of many "frozen" projects, leading to increased construction costs; Increased prices of oil, oil products and basic materials in road construction

I.4 Conclusions

I.4.1 Railway Infrastructure

The review of the condition of the railway infrastructure makes it possible to identify the problems related to the development of the infrastructure, the issues concerning its safety and reliable operation and the main guidelines for the implementation of the investment programme.

The main priorities and actions will focus on the following:

- Pre-investment feasibility studies should be prepared prior to the accession of the Republic of Bulgaria to the European Union with regard to:

the implementation of investment projects for the reconstruction of the routes of the main railway lines along the Main Axes of the Trans-European Transport System;

the development of combined transport which will create conditions for financing from the EU funds for specific projects.

The main task in the development of the railway sector is the introduction of the European technical standards and requirements for interaction and interoperability. The ensuring of technical compatibility and interoperability will be a long process (15 to 20 years) which will require substantial financial resources in order to modernize and reconstruct the existing railway

infrastructure and to build and equip new one, as well as to train the human resources employed in this sector.

At present, most of the revenues in the infrastructure management process come from infrastructure fees charged for the availability of the railway network, which calls for seeking additional opportunities to generate revenues. The major activities will be focused on:

Improved management of station areas and their adjustment to the European standards through the establishment of joint ventures of concessions;

Establishment of freight settlements/intermodal terminals and improvement of their management through joint ventures;

Establishment of a power distribution enterprise within the framework of the Railway Infrastructure Company on the basis of its power capacities licensed by the SEWRC;

Establishment of joint ventures or other forms of joint operations in the field of telecommunications and communications;

I.4.2 Ports

The port system of the Republic of Bulgaria is closely linked to national economy and especially the foreign trade exchange. The traffic of goods at Bulgarian sea and river ports has been steadily growing at rates of 4 to 7 percent for the last five years. However, transit transport and container transport at river ports lag behind substantially.

The development of water transport is related to the following major factors:

The favourable opportunities for development of water transport are related to:

(a) The integration of the Republic of Bulgaria into the European Union. The expected outcome is considerable increase of imports and exports, which will not lead to shortage of port capacity because it is commensurate to the existing potential of port facilities and can be accommodated through their increased load;

(b) The expected considerable development of transit transport after the EU accession, when conditions will be created in practice for increased traffic to the European transport corridors.

The unfavourable prospects and threats related to the development of the Bulgarian economy are as follows:

(a) Reduction of the output of Kremikovtsi Metallurgical Works. Kremikovtsi Metallurgical Works account for up to one-third of the traffic at Bulgarian sea and river ports;

(b) Restructuring of the Bulgarian economy towards high-tech industries which do not require the import or export of large quantities of raw materials and semi-finished products;

(c) Deviation of some traffic from Bulgaria in case that competitive logistic schemes are worked out or some emergency situations occur as was the case in 1995-1997. The unfavourable prospects and threats related to the volume of transit transport are the following:

- The active policy for expansion of the hinterland of Greek ports, including the modernization of the ports of Thessaloniki, Kavala, Alexandroupolis and others, opening of new road connections and modernization of the existing ones with Bulgaria;

- The delay in the port reform will bring about reduction of the necessary investment and hence limited suitability of Bulgarian ports to meet the European and global requirements, as well as loss of the advantages of the market economy in marketing and competition.

The main priorities and activities will be focused on attracting transit traffic by means of:

Construction of railway and road structures along the European transport corridors crossing Bulgaria;

Construction of container and RoRo terminals at Bulgarian ports equipped with modern loading and unloading facilities capable of receiving vessels with capacity above 2,000 containers;

Development of public-private partnership with operators of global container lines capable of providing transit transport;

Pursuit of active marketing policy and introduction of the principles of modern logistics, including the establishment of centres providing complete logistic services. The Port of Varna is intended to turn into such a logistic centre in the initial phase;

Launching of the projects Burgas – Alexandroupolis and Burgas − Vllora – the expected transit bulk oil transport may reach 35 mn tons;

State-by-stage construction of Corridor VIII, which is expected to attract substantial volumes of traffic from and to South-Eastern Europe via Albania, as well as from and to countries in the Black sea region.

I.4.3 Airports

The review of the condition of the airport infrastructure makes it possible to identify the problems and the main guidelines for further work as follows:

Airport of Varna EAD

Preparation of a Master Plan for the development of the airport;

Construction of a new terminal for handling passengers and luggage;

Construction of a terminal for handling cargo.

Construction works are envisaged to speed up with a view to the forecasts pointing to almost 2 mn passengers at the airport by 2015.

This is expected to be achieved through a concession given on the airport and the process is underway.

Airport of Burgas EAD

Updating of the Master Plan for the development of the airport;

Construction of a new terminal for handling passengers and luggage;

Construction works are envisaged to speed up. Forecasts point to the opportunity for reaching 2 mn passengers as early as 2010.

The concession procedure is underway for the Airport of Burgas, too.

Airport of Plovdiv EAD

Resolving of the ownership issues – with the Ministry of Defence and TADO AG;

Preparation of a Master Plan for the development of the airport (possibly by a concessionaire);

Attracting a strategic investor in the capacity of a concessionaire to complete the airport and be entitled to operate it, because the airport has the potential to handle tourist flows in the winter time and to serve as a stand-by airport of Sofia.

Airport of Gorna Oryahovitsa EAD

Resolving of the ownership issues – with the Ministry of Defence;

Preparation of a Master Plan for the development of the airport (possibly by a concessionaire);

Attracting a strategic investor in the capacity of a concessionaire to further develop and operate the airport which has the potential as a training airport and an airport for general aviation and possibly low-cost air carriers.

Airport of Ruse EOOD

Preparation of a Master Plan for the development of the airport (possibly by a concessionaire);

Attracting a strategic investor in the capacity of a concessionaire to further develop and operate the airport which has the potential to handle charter flights and to be used by the general aviation and possibly low-cost air carriers for regular flights.

Airport of Turgovishte

Deregistration of the airport of Turgovishte from the capital of the Airport of Burgas EAD; ЕАД;

Preparation of a Master Plan for the development of the airport (possibly by a concessionaire);

Preparation of a concession proposal, taking into account the opportunities to serve as an alternative to the airport of Varna (for low-cost air carriers), general aviation flights, training and other flights, as well as the need for substantial resources to recover its operational fitness.

Airport of Stara Zagora EOOD

Resolving of the ownership issues – with the Ministry of Defence;

Preparation of a Master Plan for the development of the airport (possibly by a concessionaire);

Attracting a strategic investor in the capacity of a concessionaire to further develop and operate the airport which has the potential to be used by the general aviation and possibly low-cost air carriers given its vicinity to the southern Black Sea coast and its location in a dynamically developing agricultural area;

Another alternative is to attract a strategic investor – a buyer or a partner in an appropriate form of public-private partnership (e.g. joint venture) and to turn the airport into a technological centre offering basic technical service to Western aircraft.

Activities for Resolving the Problems with Airport Infrastructure

The infrastructure issues at each airport are to be tackled by its future operator. This is definitely the State in the case of the airport of Sofia.

The State will prepare and carry out the concession process in accordance with the planned schedule. This process is a set of activities outlined in **Appendix I.5**.

The sequence of processes is presented in a linear chart – **Appendix I.6.** The implementation of the planned activities will ensure the rehabilitation and completion of the airport infrastructure in the country.

I.4.4 Roads

In accordance with the analysis of the condition of the road infrastructure. The tasks to be carried out in connection with the completion, modernization and maintenance of the road network in conformity with the requirements of the European standards by 2013 are as follows:

The preparation of investment projects for new construction, reconstruction and rehabilitation of road sections along the pan-European transport corridors should continue at high rates pending the accession of the Republic of Bulgaria to the European Union;

Substantial improvement of the institutional organisation for the implementation and monitoring of projects financed from the EU Structural, Cohesion and other funds, loans with sovereign guarantees and the budget with a view to their proper and efficient use;

Improvement of the management system of the national roads network through the introduction of modern planning models to ensure the efficient maintenance and spending of financial resources;

Planned attainment of greater homogeneity of the road network along the pan-European transport corridors and the sections if the TINA network through adjustment of its technical and operational features to the European technical standards for traffic safety and comfort;

Currently, the main revenues in the management of the road infrastructure are revenues from vignette fees, frees for special use of roads, and the state budget. Increased financial resources for construction, reconstruction and rehabilitation, which will require seeking of additional opportunities to generate revenues.

I.5 Main Objectives, Priorities and Actions in the Development of the National Transport Infrastructure

I.5.1 Main Objectives

The analyses and conclusions make it possible:

To analyze and assess the condition of the transport infrastructure of the country at present;

To identify the main priorities with respect to the development, maintenance and modernization of the transport infrastructure and to map out measures for their attainment;

To specify the most important infrastructure projects with estimates of their approximate value, time limits for implementation and possible sources of financing as necessary steps towards the attainment of specific goals.

The Strategy defines the following major objectives to:

Build and develop the key transport infrastructure connections of national, cross-border and European importance and to improve the interoperability of the main railway lines;

Develop the national road infrastructure and to integrate it into that of the EU Member States;

Develop and improve the road network and to adjust it to the European norms and standards;

Optimize the capacity and efficiency of the existing and new infrastructure;

Modernize the infrastructure of the river Danube and sea waterways;

Improve the conditions for navigation and promotion of intermodal transport;

Develop and modernize airports and to adjust them to the requirements of the European Union in the field of the protection of the environment;

Promote public-private partnerships.

The attainment of these objectives over the defined programme period until 2015 will ensure the achievement of the following results:

Improved competitiveness of the Bulgarian transport system as a whole;

Creation of appropriate conditions for sustainable growth of domestic and international transport;

Integration of the Bulgarian transport system into the European one and promotion of its priority significance for the region;

Improved conditions for fair competition among the various types of transport;

Reduction of the negative impact of transport on the environment;

Enhanced energy efficiency of the transport sector;

High level of safety and security of the transport system;

Promotion of regional and social development and cohesion.

I.5.2 Main Priorities and Actions

I.5.2.1 Railway Infrastructure

I.5.2.1.1 Priorities

Priority No 1 Development of railway infrastructure

Priority No 2 Development of the infrastructure needed for intermodal transport

I.5.2.1.2 Main Actions for the Attainment of the Priorities

Priority 1. Development of railway infrastructure

This priority covers the objective to build and develop the key transport infrastructure connections of **national, cross-border and European importance** and to improve the interoperability of the main railway lines with the trans-European railway system, as well as to connect the main railway system of the Republic of Bulgaria to that of neighbouring countries.

The planned main actions under this priority are as follows:

Modernization, rehabilitation and electrification of railway sections along the pan-European transport corridors of national and European importance;

Construction, modernization, rehabilitation and electrification of railway sections connecting the main railway system of the Republic of Bulgaria to that of neighbouring countries;

Attainment and maintenance of the designed parameters of the rest of the railway infrastructure in the country.

Priority 2. Development of the infrastructure needed for intermodal transport

This priority covers the objectives related to the modernization of the existing infrastructure, the optimization of the capacity and efficiency of the existing and new infrastructure with a view to promoting intermodality.

The planned actions under this priority are as follows:

Improvement of technical, technological and operational parameters of terminals;

Establishment of new infrastructure (terminals and cargo settlements) and reconstruction of the existing intermodal transport infrastructure;

Modernization, rehabilitation and electrification of railway connections between sea and inland water port terminals.

The implementation of the priority infrastructure projects will enhance the capacity of the railway network, attain the required interoperability with the trans-European transport network and remove the bottlenecks along the main lines. All this will increase the designed speed and reduce the time for traveling.

The implementation of the projects will be in compliance with the existing national and European standards for protection of the environment, the requirements for high level of safety and security of the network, and the Bulgarian commitments under international conventions to which Bulgaria is a party.

I.5.2.2 Ports

I.5.2.2.1 Priorities in the Port Infrastructure Development Policy

Priority No 1 Updating of the master plans for the development of ports;

Priority No 2 Development of the main port infrastructure. Creation of conditions for better utilization of the existing port infrastructure;

Priority No 3 Creation of conditions for specialization of port terminals;

Priority No 4 Enhancement of the efficiency of port operations;

Priority No 5 Creation of conditions for adjustment of Bulgarian ports to the EU requirements in the field of the protection of the environment;

Priority No 6 Enhancement of the safety and security level of ports.

I.5.2.2.2 Main Actions for the Attainment of the Priorities

Priority 1. Updating of the master plans for the development of ports and their adjustment to the requirements of the reform process

This priority covers the objective to modernize the infrastructure of the river Danube and sea waterways.

The main actions under this priority are as follows:

Approval of a Master Plan for the development of the Port of Varna;

Master Plan of the Port of Burgas;

Master Plan of the Port of Lom;

Master Plan of the Port of Ruse;

Master Plan of the Port of Vidin.

Expected Results

Identification of the necessary port capacity and optimization of port operations, as well as assessment of the need for expansion of the port infrastructure as a result of a detailed study of regional and European traffic.

Resolving of urban development problems in accordance with the optimal opportunities for efficient development.

Creation of conditions for enhanced competitiveness of Bulgarian ports.

Promotion of public-private partnership.

Priority 2. Development of the main port infrastructure. Creation of conditions for better utilization of the existing port infrastructure

This priority covers the objective to modernize the infrastructure of the river Danube and sea waterways.

The main actions under this priority are as follows:

Extension and construction of main port infrastructure;

Rehabilitation and maintenance of the existing port infrastructure.

Expected Results

Enhanced operational fitness of ports for public transport of national importance.

Improvement of their main parameters ensuring highly efficient operation.

Promotion of public-private partnership.

Priority 3. Creation of conditions for specialization of port terminals

This priority covers the objective to modernize the port infrastructure, to improve navigation conditions and to promote the development of intermodal transport.

The main actions under this priority are as follows:

Creation of conditions for increased container and RoRo traffic at Bulgarian sea and river ports, including:

- Construction and re-equipment of port facilities into specialized terminals for handling RoRo freight;

- Creation of conditions for handling large-tonnage ships at the main Bulgarian ports. The main projects to be given priority are the following:

Dredging of the access and waters of the Port of Burgas;

Dredging of the access and waters of the Port Terminal of Rosenets;

Provision of maximum abutment bay for the vessels entering the Lake of Varna, which will make it possible for large-tonnage container ships to enter.

Expected Results

Enhanced competitiveness of Bulgarian ports in the Black Sea region.

Improved safety and security of the mooring of ships.

Priority 4. Enhancement of the efficiency of port operations

This priority covers the objective to improve navigation conditions.

The main actions under this priority are as follows:

Establishment of a Logistics Coordination Council. Development of a project on the basis of a study of international traffic and preparation of proposals for measures and priorities**.**

Modernization of the port operational technology. Improvement of the organisation of work of port operators.

Introduction of a recognised quality control system at all ports for public transport.

Expected Results

Enhanced productivity and efficiency through modernization of the equipment and technology of operations.

Improved quality of service, including the provision of new services related to grouping, re-packaging, intermediary handling, door-to-door logistics, and establishment of logistic transport junctions in the hinterland.

Priority 5. Creation of conditions for adjustment of Bulgarian ports to the EU requirements in the field of the protection of the environment

This priority covers the objective to improve navigation conditions**.**

The main actions under this priority are as follows:

Preparation of waste management plans of the ports for public transport of national importance in Varna and Burgas and making arrangements for the preparation of plans for the other ports, as well;

Development of an electronic database for wastes from ships, covering all ports;

Construction of incinerators – one at the ports of Varna and Burgas each (probably Varna-West and Burgas-West);

Modernization of the receptacle for oil-containing waste waters from ships at the port of Lom.

Expected Results

Ensuring the fulfillment of the requirements laid down in Directive 2000/59/EC, the Law on Wastes, MARPOL 73/78, the recommendations for prevention of the pollution of the waters of the river Danube from navigation adopted by the Danube Commission, Budapest 1997 with respect to navigation conditions.

Adjustment of the facilities for treatment of solid wastes from ships to the requirements of the MEW.

Priority 6. Enhancement of the safety and security level of ports

This priority covers the objective to improve navigation conditions.

The main actions under this priority are as follows:

Improvement of the admission and security regime of ports (introduction of audio-visual surveillance and control systems, electronic access systems, barriers, fences and enhanced level of physical protection).

Expected Results

Introduction of and adjustment of the Bulgarian norms and standards to the international and European port safety and security and environmental protection norms.

Improved enforcement on the basis of the ISPS Code to SOLAS, the Law on the Sea Space, Inland Waterways and Ports of the Republic of Bulgaria, and Ordinance No. 53 on the Terms and Conditions for Achieving Safety for Vessels and Ports.

I.5.2.3 Airports

I.5.2.3.1 Priorities in the Airport Infrastructure Development Policy

Priority No 1 Improvement of the airport infrastructure on a short-term basis – 2006;

Priority No 2 Updating of the existing master plans (airports of Sofia and Burgas) and preparation of new master plans for the development of airports;

Priority No 3 Enhancement of the safety and security level of airports;

Priority No 4 Creation of conditions for adjustment of Bulgarian airports to the EU requirements in the field of the protection of the environment

I.5.2.3.2 Main Actions for the Attainment of the Priorities

Priority 1. Improvement of the airport infrastructure on a short-term basis – 2006

The main actions for the implementation of this priority are as follows:

Completion of the construction and setting into operation of the new passenger terminal 9Lot B1) and runway system (Lot B2) of the airport of Sofia by August 2006 and October 2006 respectively;

Construction (adjustment of appropriate premises) of temporary terminals to handle passenger inflows and outflows during the summer season at the airports of Varna and Burgas – May 2006.

Priority 2. Updating and preparation of master plans for the development of airports

The main actions for the implementation of this priority are as follows:

Updating of the existing master plan for the development of the Airport of Sofia;

Preparation of a concept for the future extension of the Airport of Sofia;

Updating of the existing master plan for the development of the Airport of Burgas – up to one year after the concession is given;

Preparation of master plans for the development of the airports of Varna, Plovdiv, Gorna Oryahovitsa and Ruse - up to one year after the concession is given;

Preparation of master plans for the development of the airports of Turgovishte and Stara Zagora – up to one year after the concession is given.

Priority 3. Enhancement of the safety and security level of airports

The main actions for the implementation of this priority are as follows:

Stage-by-stage supply, installation and setting into operation of new equipment and systems such as: X-ray machines 3rd generation (3D scanning); EDS (systems for inspection of checked-in luggage); EDDS (explosive detection systems); TDS (gas analyzers for plastic explosives); biometric access control systems;

Stage-by-stage supply, installation and setting into operation of equipment and systems ensuring higher categories for flights under reduced visibility – ILS, MILS, direct satellite weather information, GPS systems and devices, radar control of ground movement.

Priority 4. Creation of conditions for adjustment of Bulgarian airports to the EU requirements in the field of the protection of the environment

The main actions for the implementation of this priority are as follows:

Completion of the construction and setting into regular operation of the system for monitoring and control of noise and gas emissions from taking-off and landing aircraft at the airport of Sofia, together with the completion of Lot B2;

Stage-by-stage supply, installation and setting into operation of equipment and systems for monitoring and control of ground sources of environmental pollution and noise and gas emissions from taking-off and landing aircraft at the airports of Varna and Burgas.

I.5.2.4 Roads

I.5.2.4.1 Main Priorities

Priority No1 Completion of motorways in the Republic of Bulgaria;

Priority No 2 Reconstruction and rehabilitation of road sections along trans-European transport corridors;

Priority No 3 Ensuring improved and more homogeneous transport operational indicators of main roads in the national road network through reconstruction and rehabilitation

I.5.2.4.2 Main Actions for the Attainment of the Priorities

Priority 1. Completion of motorways in the Republic of Bulgaria

This priority covers the objective to develop the national road infrastructure.

The planned activities are related to:

The construction of Trakia Motorway;

The construction of Lyulin Motorway;

The construction of Maritsa Motorway;

The construction of Struma Motorway;

The construction of Cherno More (Black Sea) Motorway.

The priority includes the construction of 717.14 km of motor ways with total indicative value of EUR 3,305.20 mn and commencement date in 2006 (launch of Lyulin Motorway, Sofia Ring Road and completion of Struma, Trakia and Maritsa Motorways as follows:

Trakia Motorway – A1 (part of pan-European transport corridors Nos. IV, VIII and X) – total length of 360 km. 171 km are in operation, 73 km are under construction, and 116 km are to be completed;

Maritsa Motorway – A3 (part of pan-European transport corridors Nos. IV, IX and X) – total length of 112 km. 20 km of the left lane Lyubimets-Svilengrad are in operation. 20 km are under construction in the sections Harmanli-Lyubimets and Svilengrad-the border;

Struma Motorway - A6 (part of pan-European transport corridor No. IV) – total length of 156 km. The construction of the first 19 km from Daskalovo to Dolna Dikanya towards Dupnitsa has started;

TEM Kalotina – Sofia Motorway – Sofia Ring Road, Northern Arch – Hemus Motorway (Sofia Ring Road – Yana) (part of pan-European transport corridors Nos. IV, VIII and X) – lotal length of 82 km; 12 km in operation;

Sofia Ring Road, Southern Arch – total length of 28 km – 4 km in operation;

Lyulin Motorway - A5 (part of pan-European transport corridors Nos. IV and VIII) – total length of 19 km;

Hemus Motorway - A2 – total length of the motorway - 433 km. 146 km are in operation and 13 km are in the process of preparation. The motorway is of European and national importance, connecting the capital city with the largest Black Sea port of Varna and serving all regions in Northern Bulgaria. It is included in the Bulgarian proposal for the extension of the TINA network;

Cherno More Motorway - A4 (part of pan-European transport corridor No. VIII) – total length of 103 km, 11 km in operation.

Motorways are to be financed from the state budget, the EU Cohesion Fund, and within the framework of public-private partnership.

Priority 2. Reconstruction and rehabilitation of road sections along trans-European transport corridors

This priority covers the objective to develop and modernize the road infrastructure and to adjust it to the European norms and standards.

The following groups of activities are envisaged:

Projects along new routes and reconstruction of a total length of 175.5 km and indicative value of EUR 395.5 mn, the most important ones being:

- Road I-1 (E79), Vidin - Montana, Dimovo – Bela – Ruzhintsi section L = 20.5 km;
- Road I-5, Ruse – Veliko Turnovo – modernization of the existing road into a four-lane road with the technical parameters of a motorway; L = 107 km in two phases: Ruse-Byala and Byala-Veliko Turnovo;
- Road 5 Kurdjali-Podkova; L = 16,9 km and ring road of Kurdjali - L = 15 km;

Projects for further rehabilitation along pan-European transport corridors IV,VIII and IX with total length of 1453.8 km and indicative value of EUR 457.425 mn;

Projects for urban ring roads, whereby the first phase will cover ring roads with total length of 29.3 km and indicative value of EUR 80 mn for the following cities:

Montana – length of 11.2 km;

Vratsa – length of 6.5 km;

Gabrovo – total length of 24 km.

Construction works are planned to be financed from the state budget and the EU Cohesion Fund.

Priority 3. Ensuring improved and more homogeneous transport operational indicators of main roads in the national road network through reconstruction and rehabilitation

This priority covers the objective to develop and improve the road infrastructure and to adjust it to the European norms and standards.

The following groups of activities (programmes) are envisaged:

Rehabilitation, reconstruction and new construction of 5,638 km of roads of Class II and III with total indicative value of BGN 4,144 mn. These projects will be financed with resources from the Operational Programme Regional Development 2007 – 2013;

Project Transit Roads V – Programme for Comprehensive Homogeneity of the National Road Network (2007 – 2010), envisaging the rehabilitation and reconstruction of 1,421 km of

roads with total indicative value of EUR 507 mn. These facilities are to be financed with a loan from the European Investment Bank;

Project for the Rehabilitation and Reconstruction of Part of the National Road Network (Roads of Class II and III) 2007 – 2010 of 440 km of roads with total indicative construction value of EUR 112.4 mn. These facilities are to be financed with a loan from the World Bank.

I.6 Action Plan

I.6.1 Criteria for the Selection of Priority Infrastructure Projects

The following criteria have been identified for the assessment and prioritization of projects on the basis of the principles of planning and implementation of transport infrastructure projects and through the application of multi-criteria analysis:

Access of the Bulgarian national transport network to the EU transport network (priorities in the trans-European transport network, cross-border impact/effect);

Economic criterion (traffic forecasts, economic rate of return, contribution to the GDP/development of the region);

Social impact criterion (employment during and after the implementation of the projects, public support);

Environmental impact criterion (less need for land expropriation, reduced pollution of the environment);

Administrative criterion (level of preparedness for the project implementation, capacity and preparedness of the Managing Authorities, the Intermediary Bodies and the beneficiaries for the implementation of projects).

The priority projects planned for the period until 2015 have been selected and ranked by priorities in terms of their compliance with these criteria.

The multi-criteria analysis has been applied to each project proposal. Projects are evaluated on the basis of a score system for five criteria, each having different weight as set out in **Table 4**.

Table 4. Score System for Evaluation of Projects

Criteria	**Maximum Number of Scores**
1. Access of the Bulgarian national transport network to the EU transport network	**35**
Priorities in the trans-European transport network	20
Cross-border impact/effect	15
2. Economic criterion	**25**
Traffic forecasts	10

Economic rate of return	8
Contribution to the GDP/development of the region	7
3. Social impact criterion	**15**
Public support	7
Employment during the implementation of the project	4
Job creation	4
4. Environmental impact criterion	**15**
Reduced pollution of the environment	8
Less need for land expropriation	7
5. Administrative criterion	**10**
Level of preparedness for the project implementation	6
Capacity and preparedness of the Managing Authorities, the Intermediary Bodies and the beneficiaries for the implementation of projects	4
Total	**100**

In the course of the new programme period, the EC transport policy will lay the emphasis mainly on the construction and development of main transport corridors. This explains the weight of the first criterion, covering two aspects of the access of the Bulgarian national transport network to the EU transport network. The maximum score is awarded to projects along the higher priority trans-European transport corridors IV, VII, VIII and X and projects with clear cross-border effect.

Next is the economic criterion. The maximum score is awarded to projects oriented to routes with high traffic forecasts. The second most important aspect of the economic criterion is the estimated economic rate of return.

Scores are split equally between the social impact criterion and the environmental impact criterion. The high public support and the increased employment during and after the implementation of the future projects gain the maximum score under the respective criteria. As to the environmental impact criterion, the maximum score is awarded to projects involving the least need for land expropriation and the least harmful impact on the environment.

When the administrative criterion is applied, the maximum score is awarded to project proposals which were prepared with resources from the EU pre-accession programmes in 2005 and 2006. The capacity of the public administration and beneficiaries for management and implementation of projects is assessed from the perspective of the starting point of the projects and the expectations are that a later launch will enable the administration to gain more experience.

I.6.2 Priority Investment Projects of National Importance – Indicative Value and Sources of Financing

I.6.2.1 Railway Infrastructure

I.6.2.1.1 Ongoing Priority Investment Projects of National Importance

Project: Construction of a second bridge across the river Danube at Vidin – Kalafat

Importance of the project:

- The project provides the missing link along the route of Corridor IV;
- The project has great socio-economic importance for the region;
- The project is on the priority list of the Stability Pact for South-Eastern Europe;
- It is supported by the EC (PHARE and ISPA Programmes), the EIB, the Credit Institution for Reconstruction of the Federal Republic of Germany (KfW), and the French Development Agency (AFD).

Indicative value of the project: EUR 226 mn. Deadline – 2009.

Project: Reconstruction and electrification of the Plovdiv – Svilengrad railway line

Importance of the project:

Part of Pan-European transport corridors IV and IX;

Ensuring the railway connection between Europe and Asia;

Integration of the Bulgarian railway network into the trans-European transport network.

Indicative value of the project: EUR 340 mn. Deadline – 2010.

Project: Doubling and Electrification of the Karnobat – Sindel railway line

Importance of the project:

Part of Pan-European transport corridor VIII;

Ensuring the railway connection between Europe and Asia;

Integration of the Bulgarian railway network into the trans-European transport network.

Indicative value of the project: EUR 21.12 mn

Project: Modernization of the security and telecommunication equipment of the Blagoevgrad – Kulata railway line

Importance of the project:

Part of Pan-European transport corridor IV;

Attainment of technical interoperability between the railway infrastructure of the Republic of Bulgaria and the Hellenic Republic through modernization of the security and telecommunication equipment and introduction of modern technologies along the Sofia – Thessaloniki railway line;

Reduced traveling time and increased speed of passenger and freight trains between the border areas of Blagoevgrad and Seres.

Indicative value of the project: EUR 4.44 mn. Deadline – 2007.

I.6.2.1.2 Planned Priority Investment Projects of National Importance

The planned investment projects follow the development priorities which coincide with the pan-European transport corridors and axes crossing the territory of the country as formulated in the geopolitical analysis – Section II, point 4.

Priority 1: The most important axes for the development of the trans-European transport network:

Vidin – Sofia – Kulata of pan-European transport corridor IV

- Modernization of the Vidin-Sofia railway line (completion of Lot 1 Vidin-Brusartsi and partially Lot 2 Brusartsi-Mezdra);

Indicative value of the project: EUR 324.5 mn

- Modernization of the Sofia – Pernik – Radomir railway line;

Indicative value of the project: EUR 103 mn

- Modernization of the Radomir – Blagoevgrad railway line.

Indicative value of the project: EUR 4 mn

<u>Priority 2:</u> The most important axes for the connection of the trans-European transport network with neighbouring countries and regions:

Pan-European transport corridor X

Pan-European transport corridor VIII

- Electrification and reconstruction of the railway line from Svilengrad to the Turkish border;

Indicative value of the project: EUR 35 mn

- Doubling and electrification of the Purvomai – Yabulkovo railway line;

Indicative value of the project: EUR 23 mn

- Modernization of the Sofia-Plovdiv railway line (completion of Lot 1 Sofia-Elin Pelin and partially Lot 2 Elin Pelin-Belovo);

Indicative value of the project: EUR 128.8 mn

- Recovery of the designed parameters of the Plovdiv – Zimnitsa railway line;

Indicative value of the project: EUR 49 mn

- Renovation of sections along the Plovdiv – Burgas railway line;

Indicative value of the project: EUR 66.5 mn

- Doubling and electrification of the Karnobat – Sindel railway line;

Indicative value of the project: EUR 200 mn

- Modernization of the Sofia – Dragoman railway line.

Indicative value of the project: EUR 85.6 mn

<u>Priority 3:</u> Pan-European corridors which are not covered by the main axes:

Pan-European transport corridor IX

Recovery of the designed parameters of the Ruse – Gorna Oryahovitsa railway line.

Indicative value of the project: EUR 28 mn

<u>Priority 4:</u> Additional Connections in the TINA network:

The railway connection Mezdra – Pleven – Gorna Oryahovitsa;

The railway connection Ruse – Kaspichan – Sindel;

Renovation of sections along the Mezdra - Gorna Oryahovitsa railway line;

Indicative value of the project: EUR 166.9 mn

Recovery of the designed parameters of the Ruse – Varna railway line.

Indicative value of the project: EUR 47.5 mn

Projects of great national importance which do not coincide with priority axes:

Recovery of the designed parameters of the Sofia – Karlovo – Zimnitsa railway line;

Indicative value of the project: EUR 85.7 mn

Recovery of the designed parameters of the Gorna Oryahovitsa – Kaspichan railway line;

Indicative value of the project: EUR 82.3 mn

I.6.2.2 Ports

I.6.2.2.1 Ongoing Priority Investment Projects of National Importance

Project: New water break of the port of Burgas and bulk freight terminal

Importance of the project:

The project occupies a strategic place in the concept for the development of pan-European transport corridors;

It contributes to the establishment of good transport and communication links to the hinterland and serves the will developed industrial areas in Southern Bulgaria and the countries in the north-eastern part of the Balkan Peninsula.

Indicative value of the project: USD 198 mn. Deadline − 2007.

Project: Construction of a winter shelter for 39 vessels in the river Danube - Phase III

Importance of the project:

Improved efficiency and safety of navigation along the river Danube;

Improved quality of the water and micro-climate in the region;

Reduced unemployment in the region of Ruse.

Indicative value of the project: BGN 13 mn from the state budget. Deadline − 2007.

I.6.2.2.2 Planned Priority Investment Projects of National Importance

Taking into account the corridors and axes of priority for the EU, which cross the territory of Bulgaria, i.e. **corridor VII (the river Danube), corridor VIII and** the main **sea lines,** the following projects have been identified:

Improvement of the navigation in the Bulgarian-Romanian section of the river Danube from km 530 to km 520 – Batin and from km 576 to km 560 – Belene along pan-European transport corridor VII;

Indicative value of the project: BGN 146.6 mn

Establishment of a river information system for the Bulgarian part of the river Danube;

Indicative value of the project: EUR 5 mn

Information system for management of the traffic of vessels – phase 3;

Indicative value of the project: EUR 3.9 mn

The development of the port infrastructure is envisaged to be carried out on the basis of concession arrangements.

I.6.2.3 Airports

I.6.2.3.1 Ongoing Priority Investment Projects of National Importance

Project: Reconstruction, development and extension of the Airport of Sofia

Importance of the project:

The project is included in the National ISPA Strategy and it is the point of intersection of corridors IV, VIII and X;

The airport of Sofia will handle all classes of aircraft;

The capacity will increase to 2.6 mn passengers per annum and 26,000 tons of annual cargo exchange;

Reduced harmful impact on the environment;

Enhanced safety and security.

Indicative value of the project: EUR 210 mn. Deadline – 2006.

The main public investment projects in the railway, water and air transport are presented in **Appendix I.3.**

I.6.2.4 Roads

The period 2005 – 2009 covers the implementation of 14 projects

I.6.2.4.1 Ongoing Priority Investment Projects of National Importance

11 projects are underway as follows:

Trakia Motorway Project Lot 1 - Orizovo - Stara Zagora; L = 38.740 km; value EUR 84.858 mn and deadline 31 July 2007

Trakia Motorway Project Lot 5 - Karnobat – Burgas-West junction; L = 35.288 km; value EUR 79.444 mn and deadline 31 October 2006

Bulgaria – Transit Roads IV Project; L = 352 km; value EUR 97.200 mn and deadline December 2008

Construction of Lyulin Motorway; L = 19.125 km; value EUR 148.450 mn; commencement in July 2006 and deadline July 2009

Lot 1 – Rehabilitation, strengthening and improvement of road I-1 /E-79/, Daskalovo – Dupnitsa section; L = 40.00 km, including 18 km – motorway gauge and 22 km of rehabilitation; value EUR 54.0 mn and deadline 31 December 2006

Road I-1/E 79/ Construction of a scond tunnel pipe of the ring road of Dupnitsa; L = 0.270 km; value EUR 4.6 mn and deadline 11 July 2006

Construction of the Podkova – Makaza access road; L = 18.00 km; value EUR 25.941 mn and deadline 10 October 2006

Transit Roads III - Lots 3, 4, 8 and 9; L = 245.00 km (adjusted to a width of 7.50 m); value EUR 38.500 mn and deadline June 2006

Lot A – Rehabilitation and partial reconstruction of road II-19 Simitli - Razlog; L = 36.000 km; value EUR 10.178 mn and deadline 28 March 2007

Lot B – Rehabilitation of road II-19 Razlog – Bansko – Gotse Delchev - Sadovo; L = 58.000 km; value EUR 10.301 mn and deadline 28 March 2007

Construction of the access road from Rudozem to the border with Greece; L = 9*,600 km; value EUR 6.949 mn and deadline 20 June 2007

I.6.2.4.2 Planned Priority Investment Projects of National Importance

Road I-1(E79), Vidin - Montana, Dimovo – Bela – Ruzhintsi section; L = 20.5 km; value EUR 32.000 mn;

Road I-5/E85/ Ruse – Veliko Turnovo – modernization of the existing road into a four-lane one with motorway technical parameters; L = 107 km; value EUR 250.0 mn

Road I-5, Kurdjali – Podkova; L = 16,9 km and ring road of Kurdjali; L = 15 km; value EUR 32.000 mn.

The period until 2015 covers also the implementation of the other projects of the Sectoral Operational Programme Transport as follows:

Adjustment of the technical and operational features of the road infrastructure to the European standards for corridors IV, VIII and IX; L = 880 km as described in the Appendix; value EUR 407.625 mn

Transit Roas IV – second phase; L = 286 km as per the list attached; value EUR 49.800 mn

Road I-1 (E-79), Vratsa - Botvegrad - modernization of the existing road into a four-lane one with motorway technical parameters in the Mezdra – Botevgrad section; L = 31.5 km; value EUR 85.000 mn

Preparation of a project for the construction of ring roads under TEN-T- Phase I: for the cities of Montana L = 11.2 km; Vratsa L = 6.5 km; Gabrovo L = 24 km; value EUR 80.0 mn and deadline;

Adjustment of the technical and operational features of road I-3 (E-83) Botevgrad – Pleven – Byala to the European standards; value EUR 36.675 mn

Hemus Motorway – Yablanitsa – Koritna and Boaza road junction; L = 8.5 km; value EUR 30.000 mn

The main public investment road projects are described in **Appendix I.4.**

I.6.3 Time Schedule and Deadlines for the Implementation of Priority Investment Projects of National Importance

The time schedules for the design and implementation of priority investment projects of national importance (for the periods **2006, 2005-2009** and **2005-2015** respectively), including the ongoing projects, with their deadlines, indicative values and sources of financing are described in detail in **Appendices I.7**, **I.8** and **I.9.**

Appendix I.10 presents the linear time schedule for the implementation of priority investment projects in the transport sector until 2015.

Appendix I.11 contains the time schedule on a quarterly basis for the implementation of priority investment road projects until 2015.

I.6.4 Projects to Be Implemented through Public-Private Partnership (Concession) – Indicative Value and Deadlines

The Ministry of Transport will apply the concession procedure as a form of public-private partnership and efficient method for the completion, modernization and maintenance of the transport infrastructure with a view to upgrading the quality of the service, enhancing the reliability and security of operation of the infrastructure, and promoting its competitiveness. In this connection, specialized long-term programmes are being worked out for the development of ports and airports for public use. The main objectives of these programmes are to identify the policy and guidelines for accelerated development of these facilities of strategic importance for the economic development of the country. The public private partnership policy will be an integral part of these programmes.

The main argument to support the policy of promoting public private partnership is the fact that this is an alternative way to provide the financial resources needed for long-term development, reconstruction, modernization and maintenance of the transport infrastructure which suffers from recurrent shortage of financial resources.

Concession arrangements enable the government to retain its right to exercise control on:

The implementation of concession agreements by means of the contractual guarantees for the performance of obligations and application of the agreed penalties;

The activities related to safety and security;

The obligation to ensure equal access of the service users;

The guarantees for the national security and defence.

Expected effect

Accelerated macro-economic development;

Job creation through development also of ancillary activities;

Improved quality and capacity of the infrastructure;

Efficient operational management;

Improved quality of service;

Increased traffic and attracting transit transport.

Concession arrangements will be applied, while observing the main principles of openness and transparency, free and fair competition, and equal treatment of all bidders and participants.

I.6.4.1 Railway Infrastructure

In the context of the above considerations, the government investment programme envisages public-private partnership in the following projects:

Railway stations – in accordance with the schedule for priority infrastructure projects, the concession procedures for the central railway stations of Sofia and Plovdiv are expected to be opened in 2006;

Terminals – the project "Development of a Strategy for the Integration of the Bulgarian Railway Infrastructure into the European Intermodal Transport Network is underway. The project has to define the opportunities for application of public-private partnership with regard to intermodal terminals, which will produce positive impact on imports, exports and transit transport;

Other railway infrastructure facilities – the long-term prospect is to grant concessions on railway line sections and specific premises for such activities as handling luggage and freight, retail network, financial services, medical services, etc.

I.6.4.2 Ports

The objective is to use public-private partnership in order to have the port infrastructure completed, modernized and efficiently managed by operators who should introduce new technologies, marketing and management to attract traffic and to enhance the economic efficiency of the activities.

Expected effect

Improved quality and capacity of the port infrastructure;

Efficient port management;

Improved quality of port services;

Increased traffic and attracting transit transport.

The Ministry of Transport intends to grant concessions on 29 ports and port terminals of national importance in accordance with the programme for the development of ports in Bulgaria – Table 5.

Table 5

Terminals at Ports for Public Transport of National Importance	Indicative Value of the Project (EUR '000)
Port terminal Balchik	1 773
New ferry terminal Silistra	2 811
Port terminal Lesport	65 821
Port terminal Somovit	3 571
Port terminal Svishtov	9 809
Port terminal Oryahovo	1 224
Container port terminal Varna-West	5 612
Bulk freight port terminal Varna-West	8 163
Port terminal Vidin-South	4 081
Ferry complex-Vidin	1 020
Port terminal Vidin-Centre	81
Port terminal Vidin-North	8 775
Passenger terminal Silistra	56
Port terminal Tutrakan	255
Multi-purpose port terminal Varna-West	10 204
Multi-purpose port terminal Varna–East	12 755
Port terminal Ruse-Centre	107
Ferry terminal – Ruse	196
Port terminal Ruse-East	11 719
Port terminal Ruse-West	1 020
Port terminal Ezerovo TPP – Varna	7 653
Container terminal on the northern coast of the Lake of Varna	15 306
Grain terminal on the northern coast of the Lake of Varna	10 204
Bulk freight terminal in Konstantinovo – southern coast of the Lake of Varna	12755
Ferry complex –Varna	5 612
Port terminal Petrol – Varna	12 755
Port terminal Rosenets - Burgas	12 755
Container terminal No. 4 – port of Burgas	5 102
Port terminal Lom	10 204

I.6.4.3 Airports

International airports for public use, handling passengers and cargo, are operated and management by five companies in which the sole owner of the capital is the state. It is possible to reconstruct, modernize and construct infrastructure facilities on the site of airports for public use by attracting private capital in the context of the constrained financial resources.

Expected effect

Improved quality and capacity of the airport infrastructure;

More efficient airport management;

Improved quality and diversity of airport services;

Increased aircraft traffic and passenger flows.

Concession arrangements are to be applied to airports for public use in accordance with the programme for development of airports for public use in Bulgaria, which is currently drafted. The concession procedures for the airports of Varna and Burgas are in their final stages.

Appendix I.12 outlines the facilities (draft proposals for the period 2006 – 2015) to be subject to concession.

I.6.4.4 Motorways

Over the period 2006 – 2015, the following motorways are planned to be completed, rehabilitated and maintained:

Trakia Motorway, total length of the section - 188 km, including:

Lot 2, Lot 3 and Lot 4 L=118 km;

Sofia Ring Road – Northern Arch section; L=22 km;

Kalotina Sofia Ring Road – Northern Arch section; L=48 km.

Total indicative value of the project EUR ..... mn

Maritsa Motorway; L=114 km

Total indicative value of the project: EUR 360 mn. Deadline – 2009

Struma Motorway with total indicative value of EUR 600 mn, including:

- LOT 1 Dolna Dikanya – Dupnitsa section; L=22 km
Total value of the project: EUR 88 mn

- LOT 2 Dupnitsa – Simitli section; L=37 km
Total value of the project: EUR 174 mn

- LOT 3 Simitli – Kresna section; L=30 km
Total value of the project: EUR 142 mn

- LOT 4 Kresna – Kulata border checkpoint section; L=49 km
Total value of the project: EUR 196 mn

Cherno More Motorway; L=95 km

Total indicative value of the project: EUR 196 mn

Appendix I.13 outlines the facilities (draft proposals for the period 2006 – 2015) to be subject to concession.

I.7 Institutional Organisation of the Implementation

Institutions Responsible for the Implementation of the Strategy in the Transport Sector

The Managing Authority in charge of the overall efficient, effective and proper management and implementation of the strategy in the transport sector will be the Ministry of Transport.

The Managing Authority will delegate specific tasks and responsibilities to the Intermediary Bodies for the implementation of transport projects.

The operational management of the strategy in the transport sector will be performed through **the Intermediary Bodies:**

Railway Administration Executive Agency;

Railway Infrastructure National Company;

Port Administration Executive Agency;

Port Infrastructure State-owned Enterprise;

Executive Agency for the Maintenance and Study of the River Danube;

Civil Aviation Administration Chief Directorate;

Roads Executive Agency.

The Monitoring Committee for the strategy in the transport sector should be set up within three months of the decision on its approval.

I.8 System for Monitoring and Evaluation of the Implementation – Indicators for Current and Periodic Performance Analysis and Updating

I.8.1 Railway Infrastructure

Main Indicators:

Performance Indicators:

Constructed new railway line sections (km);

Rehabilitated railway lines (% of the whole railway network);

Electrified railway lines (% of the whole railway network);

Doubled railway lines (% of the whole railway network);

Railway lines equipped with new safety systems, signaling and communication systems (% of the whole railway network);

Time saved in the railway transport (duration of traveling x volume of freight/number of passengers);

Number of new bridges and tunnels.

Impact Indicators:

Passengers served by railway transport;

Freight handled by railway transport;

Number of transit passengers;

Quantity of transit freight;

Gross added value (GAV) in railway transport;

Jobs – created or preserved as a result of implemented infrastructure projects.

I.8.2 Ports

Main Indicators – Annual Basis

Maintenance and development of the infrastructure – investments (BGN '000) by types of financing:

Total volume of investments;

Investments in dredging works;

Investments in port facilities and ground infrastructure;

Investments in modernization of technological processes.

Specific Indicators (number):

Terminals subject to concession;

Quality assurance certificates;

Security Assurance Certificates;

Receptacles built.

Activities of Sea Ports:

Growth of the total freight traffic - tons '000;

Growth of container traffic – number of TEU;

Growth of RoRo traffic – tons '000;

Growth of transit traffic – tons '000;

Growth of passenger traffic – number of passengers served.

Activities of River Ports:

Growth of the freight traffic (net of RoRo) - tons '000;

Growth of the international freight traffic (net of RoRo) - tons '000;

Growth of RoRo traffic – number of transport units handled;

Growth of passenger traffic – number of passengers served.

I.8.3 Airports

Main Indicators:

Performance Indicators:

Increased number of flights (aircraft movements).

Impact Indicators:

Passengers served by air transport;

Cargo handled by air transport;

Gross added value (GAV) in air transport;

Jobs – created or preserved as a result of the implemented measures.

I.8.4 Roads

Main Indicators:

Performance Indicators:

Constructed new road sections (km);

Reconstructed road sections (km);

Rehabilitated road sections (% of the whole road network);

Repaired road sections;

Number of new bridges and tunnels;

Condition of the pavement.

Impact Indicators:

Increased traffic volumes (number of motor vehicles/day over five-year periods);

Reduced number of traffic accidents (number/km and number of casualties/km on an annual basis);

Reduced time for closure of road sections – km and duration;

Jobs – created or preserved as a result of implemented infrastructure projects.

I.9 Conclusion

The forthcoming membership of the Republic of Bulgaria in the European Union and the process of preparation for the accession are catalysts of substantial economic, social, legal and political changes. The changing internal and external environment and the new opportunities for the country necessitate a new long-term approach to the development of the transport infrastructure.

The modernization of the transport infrastructure is indispensable for our successful integration into the European Union. Achieving a developed and modern infrastructure is a difficult and ambitious task, which requires the overcoming of problems piled over decades. It calls for time, long-term approach and availability of stable financial flows, as well as determination and full commitment on part of all stakeholders, institutions and organisations involved in the development of the infrastructure.

II. INFRASTRUCTURE RELATED TO THE PROTECTION OF THE ENVIRONMENT

II.1 Introduction

The Republic of Bulgaria is a country with underdeveloped environmental infrastructure. This limits the country's capacity to meet the challenges for the competitiveness of its economy after the accession to the EU. More often than not, the existing infrastructure for protection of the environment does not comply with the modern standards and statutory requirements. These circumstances contribute also to the reduction of the ability of the country to attract foreign investments to the economy, which produces an adverse impact in the overall development and the quality of life of the population.

Efforts are needed to attain the main objectives in the environmental sector as follows:

To improve the condition of water;

To supply water and to overcome the water use regime in a significant number of settlements;

To adjust the existing waste treatment facilities to the European norms and standards and to build new ones;

To build the infrastructure for disposal of hazardous waste at nationwide level;

To introduce systems for separate collection and re-use and recycling of household waste, etc.

II.2 Analysis of the Sector

Directive 91/271/EC on Urban Waste Water Treatment puts forward some very firm requirements related to the establishment of infrastructure for collection, treatment and disposal of waste water, as well as deadlines for meeting these requirements. The Republic of Bulgaria has negotiated the following transition periods for the implementation of Directive 91/271/EC on Urban Waste Water Treatment:

- construction of sewer networks and urban waste water treatment plants for settlements with over 10,000 equivalent inhabitants – until 31 December 2010;

- construction of sewer networks and urban waste water treatment plants for settlements with over 2,000 up to 10,000 equivalent inhabitants – until 31 December 2014.

The European Union (EU) has no specific directive to regulate the construction of water supply infrastructure, and therefore Bulgaria has not adopted and negotiated with the EU a separate implementation programme in this sphere. The requirements to the water supply infrastructure are laid down primarily in the national legislation.

The EU has stringent legislation in the waste management sphere, covering also the related infrastructure. Bulgaria has adopted and negotiated with the EU a separate implementation programme under Directive 1999/31/EC concerning the infrastructure needed for the landfill of waste.

II.2.1 Sewer Systems

Urban sewer systems provide for the collection, transfer and treatment of household, rain and industrial waste water and their disposal into the respective water body. They are very important for the maintenance of a favourable and healthy environment, for the protection of water resources against pollution and for the maintenance of the environmental equilibrium.

In terms of the availability of the sewer network and urban waste water treatment plants, **they substantially lag behind the development of water supply systems**. The country has a total of 9,013 km of sewer network and external collectors and 321,983 sewer branches for access of users and taking way of waste water. The Number of settlements with fully or partially completed sewer network is 277, 167 out of which are cities.

The share of cities and towns with sewers is 70.2 % and that of villages 2.1 %. The population covered by the sewer network is 3,800,216 inhabitants. The operational condition of the existing sewer systems is not good. I some smaller communities the sewer network was built with own resources, disregarding statutory requirements. Over 20 % of the existing sewer networks are physically and morally obsolete and need reconstruction or complete replacement in some cases. **The inefficient functioning of sewer networks leads to high level of infiltration and exfiltration, pollution of water bodies and emergency situations and floods at users.**

It is necessary to build adequate sewer systems and waste water treatment facilities and to rehabilitate water supply networks insofar as it is also a prerequisite for the sustainable development and growth of local communities in Bulgaria.

II.2.2 Waste Water Treatment Plants

The country has a total of 67 urban waste water treatment plants (UWWTP), out of which 14 apply only mechanical treatment and 53 have a biological step in the waste water treatment. They serve 71 agglomerations, including 54 settlements with a population of 3,342,075 inhabitants. The total number of equivalent inhabitants served by these plants is 5,648,184. **Many of the existing waste water treatment plants need extension, reconstruction and modernization** due to their work beyond the designed capacity and the inability to abide by the requirements for disposal into water bodies as specified in the disposal permits.

II.2.3 Dams for Drinking Water

Many settlements in the Republic of Bulgaria, which are located in mountainous and semi-mountainous areas, get their water supply from surface waters. Surface waters used for drinking water supply account for 52.3% of the total quantity of the water consumption.

The run-off of Bulgarian rivers is very uneven in seasonal terms and also over the years. The main river run-off is formed at the snow-melting time of the spring high water from the middle of March until the end of June. This period generates some 50% to 65% of the total river flow.

The water which is not used leaves the boundaries of the country by flowing into the river Danube, the Black Sea or going to the territory of neighbouring countries. The run-off is much smaller in the other seasons; it is 8 to 10 times less in the summer time. Since the water consumption reaches it peak in the summer season, **many settlements introduce regimes and water is not supplied at certain hours of the day**. In some cases regimes reach the extreme of supplying water only for two or three hours a day. As well as the seasonality of the flow, its uneven spread over the years is a problem. The climatic features of the geographical area in which this country is located form series of humid and dry years, whereby the annual differences in the run-off may reach two or three times. In dry years, there is shortage of water and severe water use regime in many settlements.

These problems can be resolved only by **construction of dams and regulation of the river run-off in their reservoirs.** The country has a considerable number of dams – over 50 large dams and more than 4,000 smaller ones used for power generation, irrigation and water supply.

11 dams for drinking water supply were build over the period 1950-1980, two out of which were designed for the city of Sofia. Since 1980 the construction of drinking water dams continued

but at much smaller pace and with repeated rescheduling of deadlines due to the shortage of financial resources. Construction works have stopped since 2001 and **substantial financial resources** have been invested and **"frozen"** there.

At the same time, the settlements for which these facilities are designed, suffer from acute problems with their drinking water.

II.2.4 Water Supply Networks

Water resources in the Republic of Bulgaria are generated from the run-off of internal rivers, ground waters and part of the water of the river Danube. Their protection and rational use and management are of vital importance for the sustainable development of the country. The Republic of Bulgaria is poor in water resources compared to other European countries. Depending on the humidity throughout the year, 9 to 24 bn cubic meters of water flow are generated annually. The average annual quantity per capita is 2,300-2,500 m^3 p.a. and the disposable portion is 800 to 1,000 m^3 annually. The use of accessible water is constrained by its worsened properties as a result of the pollution with household sewer and industrial waste water and from diffused sources.

The restructuring of the economic sectors (including the closure of water bodies and unprofitable industries) and the gradual increase of water prices, matched with draught processes maintain a trend of overall reduction of the water intake.

In 2003, almost 98.6% of the population of the country were connected to the public system of centralized water supply. The average daily water consumption per capita ranged within 90 to 99 l over the period 1999 – 2003 and came close to the minimum of 89 l (1997).

The average annual water consumption in the country is about 10-12 bn m^3 p.a. The sectoral distribution is as follows: drinking water supply - 8-10 %; irrigation - 5-35 %; industrial water supply - 20-26 %; power generation - 15-35 %. **Only some 8÷10% of the disposable water resources of the country are used for urban drinking water supply.** Most settlements have central water supply systems. The number of settlements with water supply systems is 5,031 or 84.6 %. In terms of percentage of settlements with central water supply systems, Bulgaria ranks among the first in Europe.

21.6 % of the population of the country do not have continuous access to water supply services (subject to regime), reaching 45.5 % in the most badly affected North-West planning region.

In 2004, water losses reached 61.6% in the national water transmission system and 62 % in irrigation systems. The water supply network is relatively obsolete.

There exist 13 state-owned water and sewerage single-member limited liability companies which are 100% owned by the state; 16 mixed limited liability companies with 51% state ownership and 49% municipal ownership, and 20 municipal companies fully owned by local governments. **The lack of criteria and principles for the ownership of the water and sewerage infrastructure creates extremely complicated problems in its operation and management,** as well as impossibility for depreciation allowances to be charged for its maintenance and renovation.

Given the tendency of water consumption to grow, the shortage of water will increase and turn into a very severe social, economic and environmental problem for the country. Therefore the waste water collection, treatment and disposal acquire paramount importance.

II.2.5 Waste

Over the period 1999 – 2003, the quantities of waste generated remained relatively stable - some 13,000 thousand tons p.a. with a trend of slight decrease until 2002 and increase in 2003

mainly due to industrial waste. Over the same period, the quantities of the household waste collected through systems for organised collection and transportation remained relatively stable 3,230 thousand tons p.a. Some 70 % were disposed at landfills serving a population of more than 20,000 inhabitants. The quantities of household waste compared to the number of the population served also remained relatively stable - approximately 500 kg per capita annually.

As of the end of 2002, the organised collection of household waste covered 80% of the population in the country. Household waste collection is organised in 1,377 settlements or 24.2 % of all settlements in the country. Although over 99% of the urban population is provided collection services, the rural population served is slightly above 33%. The collection of hazardous waste for re-cycling purposes is limited to the purchase of lead acidic batteries, exhaust oil and waste oil products.

Over the period 1999–2003, the quantities of recycled and re-sued industrial and hazardous waste tended to increase steadily. According to data from the National Statistical Institute, in 2003 enterprises reported 686 thousand tons of industrial non-hazardous waste delivered for recycling[7] or about 7.5 % of the total quantity generated (compared to 2000 when the quantity was 349 thousand tons). In 2003, the quantity of hazardous waste delivered for re-use amounted to 200 thousand tons (36 thousand tons more than in 2002).

Waste composting and incineration with energy recovery are still very limited practices in the country.

The existing waste recycling infrastructure is well developed on the basis of industrial capacities set into operation mainly in the 1970's and 1980's. The total capacity for recycling and re-use of paper and cardboard waste is estimated at the level of 200 thousand tons. The processing of plastic waste is concentrated in three main factories with a capacity of about 12,000 tons annually. Waste glass is recycled in six factories. The annual quantity of recycled glass waste does not exceed 15,000 tons.

Waste disposal at landfills continues to be the major method applied in the country.. As of 31 December 2002, according to data from the National Statistical Institute, the number of landfills serving settlements with organised waste collection was 663 with 3,199 thousand tons of disposed household waste. At present, 84 landfills are identified in the country for industrial non-hazardous waste, including 74 operational landfills and 10 landfills closed. 15 of the operational landfills are used for inert waste. Currently, there are 18 landfills for hazardous waste in the country but none of them is in compliance with the environmental legislation. Incineration is not widely practiced in the country. **Bulgaria has no incinerator for household waste for the time being.**

Many of the existing household waste landfills do not comply with the requirements of the national legislation and the *acquis communautaire.* Due to the potential risk associated with them, it is of major importance to rehabilitate them so that to ensure their further operation or to close them down and build new facilities. The programme for the implementation of Directive 1999/31/EC on the landfill of waste envisages closure of existing household waste landfills and subsequent reclamation with a view to recovering and protecting the environment.

There is a large number of unauthorised landfills and old contamination with waste in the country. This calls for urgent measures to gradually clean them up and to recover the

[7] Due to the lack of separate reporting of recycled household waste, the waste purchased from citizens and commercial outlets are reported all as industrial waste.

environment. In order to prevent repeated contamination, the closure of unauthorised landfills should be coordinated with the measures to expand the systems for organised waste collection and transportation and to build and set into operation the new regional household waste treatment facilities.

According to data from RIPEW and municipal administrations, 5,135 unauthorised landfills and areas contaminated with household waste have been identified throughout the country. Since the end of 2003 a total of 2,228 have been closed down (in 2002 – 551 and in 2003 г. – 1,677).

II.3 SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats)

Strengths	Weaknesses
Considerable number of dams for drinking water; High level of availability of the w ater supply network in the country; The national system of regional household waste disposal facilities has been launched; Existing national waste recycling capacities built in the 1980's	Insufficient and obsolete infrastructure for water collection, supply, disposal and treatment and inefficient use of water resources; Poor operational condition of the existing sewer systems. Part of the existing sewer networks are physically and morally obsolete and need reconstruction or total replacement in some cases; Need for construction of new waste water treatment plants. Many of the existing waste water treatment plants need extension, reconstruction and modernization; The construnction of dams for drinwking water is delayed – great number of "frozen" projects – construction in progress; Need for construction of new regional landfills. Underdeveloped systems for waste collection (including separate collection), transportation and waste treatment facilities; Lack of well developed administrative capacity, especially at the municipal level, for compliance with the environmental legislation and for programming, preparation, management and monitoring of investment programmes, plans and projects; Scarce financial resources for environmental investment and high compliance costs.

Opportunities	Threats
1. Achievement of accelerated economic growth and increase of national financial resources for environmental investment;	1. The global climate change, the location of the country in the draught area and risks associated with natural disasters (e.g.

2. Accession of the country to the EU and use of the EU financial instruments for resolving problems related to the protection of the environment in the country. Alternative financing of environmental activities through participation of Bulgaria in various global funds /projects; 4. Development of the institutional framework for informing and involving the citizens in the decision-making process with respect to environmental issues and involvement of businesses in the protection of the environment; 5. Restructuring of the ownership and management of the water sector; 6. Development of the system for separate waste collection through the statutory opportunities for businesses to engage in recycling and re-use on their own. This will reduce the waste flows for disposal at landfills and generate more raw materials for the national economy.	floods, accidents, draught); 2. Potential new costs to be borne by businesses and the public sector for compliance with the environmental legislation in connection with amendments to the *acquis communaitaire* in the field of the protection of the environment; 3. Negative public opinion on the construction of waste treatment facilities; 4. Insufficient mainstreaming of the environmental policy into the sectoral policies and their regulations; 5. Insufficient number of people trained to manage the great number of UWWTP and drinking water treatment plants (DWTP).

II.4 Conclusions

The following conclusions can be drawn from the analysis of the environmental sector and the strengths, weaknesses, opportunities and threats identified in the sector:

- Relatively low level of availability of urban sewer systems, which puts to question the ensuring of normal quality of water;
- Urban water supply systems are available but there are many incidents of breakdown, low efficiency of their operation and big losses due to leaks;
- The lack of technical opportunities for treatment and/or disposal of a considerable part of the hazardous waste generated in the country is a major factor for the unauthorised disposal of waste, its throwing into the sewer system and uncontrolled disposal at facilities which are not suitable for this purpose;
- **The closing down of the existing landfills will be associated with substantial costs.**

The SWOT analysis leads to the conclusion that the threats and risks concerning the quality of water is greater than the opportunities for improving the quality. In the field of waste management, except for hazardous waste, positive aspects and opportunities outweigh threats.

II.5 Main Objectives

The National Strategy for Integrated Development of the Technical Infrastructure in the Environmental Sector summarizes the long-term investment intentions, objectives and priorities over the period 2006-2015. The Action Plan for the implementation of priority projects is a reflection of the political will of the Government **to prepare and implement specific projects**

which conform to the objectives and priorities set out in the Strategy, taking into account the actual opportunities for financing from various sources.

The Strategy for the development of the infrastructure in the environmental sector builds on the analysis in the National Strategy for the Environment, the Strategy for the Management and Development of Water Supply and Sewerage in the Republic of Bulgaria, the National Development Plan of the Republic of Bulgaria, as well as the commitments undertaken in the course of the negotiations for EU accession, which directly or indirectly determine the development of the environmental infrastructure as a precondition for improved quality of the environment. With a view to attaining these objectives identified in the main national documents, there has been defined the following **strategic objective:**

Improvement and development of the environmental and water supply infrastructure.

In order to achieve this strategic objective, there have been identified the following main **goals:**

Improvement of the condition of water;

Supply of water and overcoming of the water use regime in a considerable number of settlements;

Adjustment of the existing waste treatment facilities to the European norms and standards and building of new ones;

Building of the infrastructure for disposal of hazardous waste at nationwide level;

Introduction of systems for separate collection and re-use and recycling of household waste, etc.

II.6 Main Priorities and Activities

The main priorities in the environmental sector are as follows:

Priority No 1 Establishment and development of the infrastructure needed for waste water collection, treatment and disposal;

Priority No 2 Completion and rehabilitation of the infrastructure for drinking water supply;

Priority No 3 Establishment and development of the infrastructure needed for waste treatment.

II.6.1 Priority No 1 Establishment and Development of the Infrastructure Needed for Waste Water Collection, Treatment and Disposal

The reduction of water pollution is directly related to the fulfillment of the requirements of Directive 91/271/EC which has been transposed into the Bulgarian legislation. The Directive sets out a package of requirements concerning the systems for waste water collection, treatment and disposal and the related deadlines. Their fulfillment is linked to the extension, reconstruction and modernization or new construction of sewer systems, including urban waste water treatment plants. All rivers or parts thereof within the territory of the country (except for the waters of the river Mesta) have been declared sensitive areas within the meaning of Directive 91/271/EC. Therefore waste water effluents from agglomerations with population of over 10,000 equivalent inhabitants

need to be subjected to further treatment for removal of biogenic elements before their disposal into water bodies declared to be sensitive areas.

The types of activities in the scope of this priority include:

Development of new sewer systems, including urban waste water treatment plants for settlements with a population of over 10,000 equivalent inhabitants;

Reconstruction and/or extension and/or modernization of existing sewer systems, including urban waste water treatment plants for settlements with a population of over 10,000 equivalent inhabitants;

Development of new sewer systems, including urban waste water treatment plants for settlements with a population of over 2,000 - 10,000 equivalent inhabitants;

Reconstruction and/or extension and/or modernization of existing sewer systems, including urban waste water treatment plants for settlements with a population of over 2,000 - 10,000 equivalent inhabitants;

The interventions described above will be supplemented by the respective components aimed at improving the water supply network and the quality of the drinking water supplied (reconstruction, extension and modernization of urban water supply systems), including improvement of the reporting of the water quantities used. This will be carried out in the context of the requirements for an integrated approach to the problems and of water and sewerage sector and for supply of sufficient quantity and appropriate quality of the water for consumption by the population;

Development of facilities for treatment of the sludge from urban waste water treatment plants.

An important prerequisite for the successful implementation of these activities and objectives is the development and enforcement of adequate new legislation regulating the ownership of water systems and facilities. The latter is also a condition for implementation of various forms for providing the investment needed, including public-private partnership.

II.6.2 Priority No 2 Completion and Rehabilitation of the Infrastructure for Drinking Water Supply

The types of activities in the scope of this priority include:

Improvement of the quality of water supply services for the population as a major factor for urban development and better quality of life;

Upgrading of the quality of drinking water;

Development of water and sewage infrastructure in the tourist areas of Bulgaria;

Rehabilitation of the existing water supply systems.

II.6.3 Priority No 3 Establishment and Development of the Infrastructure Needed for Waste Treatment

The main tasks in relation to the waste management infrastructure are the following:

(a) Establishment of the infrastructure needed for waste treatment;

(b) Extension and modernization of the systems for organised garbage collection and transportation;

(c) Reduced generation of household waste, introduction of separate collection, implementation of activities aimed at re-use of waste;

(d) Management of infectious and other hazardous medical waste in the country;

(e) Liquidation and reclamation of unauthorised landfills and old waste pollution and reclamation of contaminated areas.

The objective of this priority is to ensure conditions for environmentally friendly treatment of household, construction and medical waste through improvement and extension of the infrastructure for their treatment and reduction of the quantities disposed.

The types of activities in the scope of this priority include:

Completion of the systems of regional facilities/installations for disposal of household waste with sufficient capacity to meet the needs of the 55 waste management regions 9e.g. regional landfills and re-loading stations);

Construction of preliminary treatment facilities, including composting, sorting and separation of waste, parallel to the setting into operation of new regional landfills;

Establishment of waste recycling, parallel to the setting into operation of new regional landfills;

Establishment of installations for utilization of the separated gas emissions (methane) from landfills through power generation;

Establishment of regional facilities for recycling of construction and demolition waste;

Introduction of systems for separate collection of waste, including biodegradable waste and some groups of common hazardous waste from households such as fluorescent lamps, batteries and accumulators, exhaust oils, paints and solvents, expired pharmaceuticals, pest and vermin control substances, etc.;

Establishment of regional disposal installations (incineration, autoclaving, microwave treatment) of infectious medical waste;

Gradual setting out of operation and subsequent closing down of all existing landfills which do not comply with the statutory requirements and the modern technical standards. Existing landfills in local communities will be closed down in accordance with the schedule for setting into operation of the respective new regional facilities/installations for treatment of household waste;

Reclamation of contaminated areas and closure and recovery of large facilities for industrial and hazardous waste, for which the State as the former owner is liable to pay damages in accordance with the "polluter pays" principle.

The potential sources of financing for these activities are the Cohesion Fund and the European Regional Development Fund of the European Union within the framework of Operational Programme Environment 2007 – 2013 and national funds (in the form of co-financing of EU funds and also as additional resources to cover investment needs beyond Operational Programme Environment 2007 – 2013), special central government subsidies for local communities, grants and interest-free loans from the Enterprise for Management of Environmental Protection Activities (EMEPA) and promotion of public-private partnerships in the sector, while creating the necessary legislative and regulatory mechanisms and applying best practices.

The financial resources needed for investment purposes in waste management will increasingly depend on the mechanisms for ever broader application of the principles "polluter pays" and "liability of the manufacturer" as laid down in the Law on Waste Management.

With a view to providing the necessary infrastructure for environmentally friendly waste management in the country and fulfilling the commitments of the Republic of Bulgaria undertaken in the accession negotiations process with regard to Chapter 22 Environment with the National

Programme for Waste Management Activities (NPWMA) (2003 – 2007) adopted by the Council of Ministers on 11 December 2003, measures and activities have been identified to implement priority investment projects for which substantial resources have been allocated over the recent years. The NPWMA implementation is supported and supplemented by the Programme for the Implementation of Directive 1999/31/EC on the landfill of waste.

The planning of the development of the waste treatment infrastructure for the period 2008 – 2013 will be carried out through the drafting of a new National Programme for Waste Management Activities, which will start in 2006. Its objectives and priorities in all spheres of waste management should ensure the implementation of an integrated and efficient waste management system at all levels. The action plan is intended to cover the completion of ongoing projects and the launch of a series of new investment projects which will bring waste management standards and practices in this country to the level required by the European Union with a view to the expected accession of Bulgaria to the EU in 2007.

II.7 Action Plan

II.7.1 Criteria for the Selection of Priority Projects

II.7.1.1 For Priority No 1 Establishment and development of the infrastructure needed for waste water collection, treatment and disposal and Priority No 2 Completion and rehabilitation of the infrastructure for drinking water supply

The selection of priority facilities in the sector of sewer systems and waste water treatment plants is based on the following main criteria:

Number of population vulnerable to health risk as a result of pollution of the water body with sewer sludge and industrial waste water, which takes place most frequenty in the case of:

(a) Disposal of waste water effluents in the vicinity of water intake facilities supplying drinking water;

(b) Disposal of waste water effluents in the vicinity of beaches along the Black Sea coast or other places where water is used for bathing.

Immission condition and category of the water body where waste water is disposed;

Location of the place for disposal of untreated waste water effluents, including:

(a) in areas with degraded environmental condition where the quality of water in the water body does not comply with the designed category;

(b) in the upper flow of the water body;

(c) in protected territories or areas of sensitive ecosystems;

(d) in sensitive areas within the meaning of Directive 91/271/EEC;

Number of equivalent inhabitants in the community where the plant will be established;

Level of availability and use of the existing sewer network and the collector to the future waste water treatment plant;

Level of availability of waste water treatment plants under construction;

International commitments of the country;

Availability of a UWWTP site and project preparedness;

Capital costs for state-by-stage and final setting into operation of the plant and comparison to the expected environmental effect;

Available sources of financing for the implementation of the project, opportunities for partial external financing;

Commitment of local authorities to the implementation of the project;

Clarity with regard to the ownership of water and sewer networks and facilities;

Reduced share of construction in progress on sites for drinking water supply;

Growing water consumption for intensively developing regions;

Potential for attracting the private sector in the construction of water facilities.

II.7.1.2 Priority No 3 Establishment and development of the infrastructure needed for waste treatment

Ensuring the fulfillment of the commitments of the Republic of Bulgaria undertaken in the accession negotiations process with regard to Chapter 22 Environment and, more specifically, the realization of the Programme for the Implementation of Directive 1999/31/EC on the landfill of waste;

Assessment of the progress in the preparation of each project and the preparedness for its implementation;

The conditions for enforcement of the requirements of the national and the European legislation in all waste management spheres.

II.7.2 Priority Programmes and Projects

II.7.2.1 Comprehensive Programme covering the objectives of Priority 1 Establishment and development of the infrastructure needed for waste water collection, treatment and disposal

The Programme for the Implementation of Directive 1999/31/EC underlying the Action Plan covers 436 agglomerations with over 2,000 equivalent inhabitants and sets the deadlines and resources needed for the construction of sewer networks and waste water treatment plants in accordance with consolidated indicators for each agglomeration.

The Programme envisages **the construction of 363 new UWWTP and the extension, reconstruction или modernization (ERM) of 40 existing ones.** 23 existing waste water treatment plants (WWTP) are considered to be in compliance with Directive 91/271/EEC**. As to the construction of sewer networks, 424 agglomerations are envisaged to have their sewer networks completed,** and 12 agglomerations are considered to have 100% of the networks available. The total costs for the implementation of the programme are about EUR 2.2 bn, out of which approximately EUR 1.3 bn until 2010 and about EUR 0.9 bn over the period 2011-2014. The completion, extension, reconstruction and modernization or new construction of waste water treatment plants need about EUR 0.9 bn and the completion of sewer networks requires some EUR 1.3 bn.

Waste Water Treatment Plants

59 WWTP were envisaged for new construction or completion during the period 2003-2005, including:

- Activities have started for 20 WWTP, including Sofia, Troyan, Plovdiv, Dulovo, Veliki Preslav, Tsarevo, Pernik, Srebarna, Beloslav, Sredets, Sliven, Samokov, Razgrad, Kavarna, Isperih, Varvara, Loznitsa, Kocherinovo, Sinemorets and Obzor-Byala;

- 24 WWTP were financed from EU pre-accession programmes – Pazardjik, Gorna Oryahovitsa – Lyaskovets – Dolna Oryahovitsa, Lovech, Blagoevgrad, Montana, Sevlievo, Asparuhovo-Varna, Popovo, Turgovishte, Meden Rudnik–Burgas, Balchik, Shumen, Zlatograd, Rudozem, Madan, Razlog, Haskovo, Stara Zagora, Dimitrovgrad, Smolyan, the reconstruction ofa WWTP Varna and rehabilitation of WWTP Sliven, Sofia and Kyustendil, out of which only 6 WWTP are under construction - Pazardjik, Gorna Oryahovitsa – Lyaskovets – Dolna Oryahovitsa, Blagoevgrad, Stara Zagora and Dimitrovgrad;

- For 18 WWTP the procedure for construction, extension or reconstruction has not started, including Hisarya, Radomir, Tryavna, Pleven, Devnya, Kazanluk, Pomorie, Ihtiman, Asenovgrad, Knezha, Panagyurishte, Aitos, Dobrich, Novi Pazar, Ahtopol, Bansko, Pravets and Nova Zagora;

- In the beginning of 2006, assistance of EUR 7.5 mn was requested from the ISPA Programme for the preparation of projects for construction or reconstruction of WWTP and improvements of water supply and sewer systems in the cities of Kurdjali, Yambol, Vidin, Pernik, Plovdiv, Dobrich and Veliko Turnovo. The decision on the financing is expected in April 2006.

The total value of the projects approved within the framework of the ISPA Programme for the water sector amounts to EUR 392 mn, out of which EUR 12 mn for technical assistance for the preparation of projects and the rest for investment projects.

Projects are in the process of preparation for the water sectors of the cities of Gabrovo, Vratsa and Sliven; they will be submitted for financing from the Cohesion Fund in 2007. The indicative value of the three projects is EUR 80 mn.

Projects for improvement of the water supply and sewer networks in Lovech, Montana, Sevlievo, Popovo, Turgovishte, Meden Rudnik-Burgas, Stara Zagora, Gorna Oryahovitsa, Lyaskovets, Dolna Oryahovitsa and Blagoevgrad are in the process of preparation with resources from the ISPA Programme. The investment measures will be financed from the Cohesion Fund. The resources for the preparation of these projects amount to approximately EUR 10 mn.

In connection with the programming for the purposes of Operational Programme Environment 2007-2013, expert assessments have been made, according to which, for the period 2007 – 2014, the residual value of the necessary resources is EUR 1.619 bn for the fulfillment of the commitments under the Programme for the Implementation of Directive 91/271/EEC. A considerable part of these resources is envisaged to be provided within the framework of Operational Programme Environment 2007-2013 (from the Cohesion Fund or the European Regional Development Fund). The precise percentage of coverage of the resources needed by the Operational Programme cannot be established now because of the unclear financial package for the Operational Programme (from the EU funds for Bulgaria) and the unclear size of the national co-financing.

The implementation of the priority investment projects for the periods **2005-2009** and **2005-2015** with the respective deadlines, indicative values and sources of financing are described in **Appendices II.1 and II.2.**

Appendix II.3 outlines the linear schedule for implementation of priority investment projects in the sector until 2015, and **Appendix II.4** presents maps of waste water treatment plants in the Republic of Bulgaria.

The potential risks related to the implementation are as follows:

- the ownership status of water supply and sewer systems, which makes it more difficult to implement some priority activities for the financing and construction of facilities in the water

sector. This problem is to be overcome through the adoption of the Law on Water and Sewerage Services and the Law on Water Management.

Summary of the Resources Needed for Priority Infrastructure Projects in the Environmental Sector for Construction of Urban Waste Water Treatment Plants and Sewer Networks – Table 6

Table 6

Priority Facilities	Resources Needed	Notes
1. Urban waste water treatment plants and sewer networks for settlements with over 10,000 equivalent inhabitants	EUR 822.658 mn	The proposed sources of financing are reflected in the tables attached to the Strategy - MEW – **Appendices II.1. and II.2.** for financing of projects in the public sector
2. Urban waste water treatment plants and sewer networks for settlements with 2,000 to 10,000 equivalent inhabitants	EUR 1, 250.586 mn	
TOTAL:	**EUR 2,073.244 mn**	

II.7.2.2 Comprehensive Programme covering the objectives of Priority 3 Establishment and Development of Infrastructure for Drinking Water Supply will be implemented with the following projects:

Construction of Dams for Drinking Water Supply

The investment projects planned by the Ministry of Regional Development and Public Works are oriented to improving the quality of water supply services for the population.

In this connection, efforts will be focused on the completion of unfinished dams for drinking water supply in accordance with the table given below.

Table 7. Dams for Drinking Water Supply under Construction

№	Facility	Progress	Total Hack Water Volume	Resources Needed for Completion as of 30 December 2001	Potential Number of Consumers
		%	mn m^3	BGN mn	Number
1	Kyustendil Dam for the city of Kyustendil	55	15.2	65	73,000 inhabitants

2	Indje Voivoda Dam for the southern Black Sea coast	20	20	25	60,000 inhabitants
3	Byala Dam for the city of Sevlievo	5	9	80	46,000 inhabitants
4	Cherni Osum Dam for the cities of Lovech, Pleven and Troyan	0	40	160	280,000 inhabitants
5	Rakochevitsa Dam for the city of Blagoevgrad	0	15.1	90	81,000 inhabitants
6	Plovdivtsi Dam for the cities of Madan and Rudozem and villages	65	2.8	30	52,000 inhabitants
7	Neikovtsi Dam for the city of Tryavna	65	4.8	20	15,000 inhabitants
8	Luda Yana Dam for the city of Panagyurishte	70	10.5	16	15,000 inhabitants
9	Rayantsi Dam	25	26.2	120	55,000 inhabitants
	TOTAL			**606**	

Kyustendil Dam

Kyustendil Dam is intended to supply water to the city of Kyustendil and six villages in the area. The total number of inhabitants who will have better water supply is 73 thousand.

The project was designed in 1973-1977.

The resources needed for the completion of the project amount to **EUR 32.7 mn,** including dam wall – EUR 20 mn; drinking water treatment plant – EUR 10 mn; mains to the city of Kyustendil - EUR 2.7 mn.

Indje Voivoda Dam

The purpose of Indje Voivoda Dam is to provide additional water to the Black Sea settlements to the south of Burgas. These areas develop very intensively and the shortage of water, especially in the summer time, becomes increasingly acute.

The original purpose of the dam was to supply water to the southern Black Sea coast and the Metallurgical Works in Debelt. For that reason, the design and exploration were carried out and financed together with the design of the metallurgical works in 1983-1985. The construction of the wall started in 1989. Construction works were stopped in 1991. Some 30% of the construction works have been completed. When the metallurgical works were privatized in 1998, Indje Voivoda was included in its assets. In 1999-2000, negotiations were held between the factory owners and the State for repurchase of the dam but no agreement was reached. Construction works can continue on the site after the ownership issue is sorted out.

The resources needed for completion of the facility amount to **EUR 12.5 mn**.

Byala Dam

The purpose of the facility is to supply water to the city of Sevlievo and local communities in the municipality of Sevlievo.

The design and exploration were carried out in 1979-1985.

Construction works started on the site in 1987 and stopped in 1995. Only 270 m of the diversion tunnel are available. Another 100 m will be needed to complete it and set it into operation. No construction works have been carried out for the dam wall.

The indicative cost of construction works is about **EUR 40 mn**.

Cherni Osum Dam

The purpose of the dam is to supply water to the cities of Pleven, Lovech and Troyan. No construction works have started. The work design was updated in 2003. The indicative value of the project is **EUR 80 mn**.

Neikovtsi Dam with a drinking water treatment plant

The purpose of the dam is to supply drinking water to the city of Tryavna, Gabrovo Region and the neighbouring villages. The area has the potential to develop tourism and has rich cultural and historical heritage. The total number of inhabitants who will have better water supply is 15 thousand.

The design and exploration were carried out in 1973-1979 and designs were partially updated in the course of construction works.

The resources needed for completion of the facility amount to **EUR 10.1 mn**, including dam wall and related installations - EUR 8 mn; drinking water treatment plant – EUR 2.1 mn.

Plovdivtsi Dam and drinking water treatment plant

The purpose of the dam is to supply water to the cities of Madan and Rudozem and 35 villages in Smolyan Region. The design and exploration were carried out in 1980-1985. So far the project has been financed from the central government budget and a total of BGN 21 mn has been invested.

The indicative resources for completion of the project amount to **EUR 15 mn**.

Luda Yana Dam and drinking water treatment plant

The purpose of the dam is to supply water to the city of Panagyurishte and 14 villages in the area. The design and exploration were carried out in 1982-1985. Cinstruction works started in 1986. In 2001, the design was updated in order to obtain financing. A new feasibility study was conducted on the whole water cycle of the city of Panagyurishte.

Indicative value of the project - **EUR 32.2 mn.**

Rakochevitsa Dam

The purpose of the dam is to supply water to Blagoevgrad. No design has been approved. Indicative value of the project - **EUR 40 mn**.

Rayantsi Dam

The purpose of the dam is to supply water to the cities of Pernik and Radomir. Some small construction works have been carried out. The design needs updating. Indicative value of the project - **EUR 62 mn**.

Before construction works continue on all these sites, designs should be updated, adjusting some technical parameters with a view to the current and future needs for water in the local communities. Thus it will be possible to change also some financial parameters of these facilities.

Establishment of Drinking Water Treatment Plants

The construction of drinking water treatment plants (DWTP) is particularly important for the improvement of the quality of drinking water. The following major facilities are planned until 2015:

Ticha DWTP- the main purpose of the facility is to treat water for the city of Shumen. Its operation will improve the quality of drinking water for 180,000 people. A concept has been drafted. Indicative value of the project - **EUR 12.5 mn**.

Dupnitsa DWTP - - the main purpose of the facility is to treat water for the city of Dupnitsa. Its operation will improve the quality of drinking water for 20,000 people. Construction works started in 1985 and stopped in 2000. Its completion rate is 50%. The working design was updated in 1995. Indicative value of the project - **EUR 5.5 mn**.

Sliven DWTP - the main purpose of the facility is to treat water for the city of Sliven. Its operation will improve the quality of drinking water for 106,000 people. Construction works started in 1988 and stopped in 1995. Its completion rate is 30%. The working design was updated in 2002. Indicative value of the project - **EUR** 3**.5 mn**.

Water and Sewerage Infrastructure in the Tourist Areas of Bulgaria

Water and sewerage infrastructure facilities are of special importance in the intensively developing tourist areas, including the Black Sea coast and national mountain resorts and communities.

Water supply, sewer system and WWTP for Slanchev Bryag (Sunny Beach) resort – the total costs for the completion of construction works is EUR 50 mn. For the purposes of covering the 2006 tourist season, it is necessary to give priority to the building of the water supply line from Kamchia diversion to Sunny Beach at a value of EUR 4.5 mn. The design and construction permit are available.

Kamchiiski Pyassatsi Water Supply Line – for the municipalities of Byala and Obzor. The total value of the project is EUR 30 mn. A working design is available.

Water supply, sewer system and WWTP for the city of Bansko – the urban infrastructure needs overall improvement. The indicative value of the projects is EUR 18 mn, which can be financed on a stage-by-stage basis.

Pamporovo Resort – the water supply system of Pamporovo should be completed, including new mains, water bodies and sewer system with a waste water treatment plant. The indicative value of the projects is EUR 12 mn, which can be financed on a stage-by-stage basis.

Zlatni Pyassatsi (Golden Sands) Resort – a new waste water treatment plant and a rainwater sewer system are needed. The designs are in the process of preparation now. The resources needed amount to EUR 10 mn for the WWTP and EUR 5 mn for the sewer system. Facilities can be financed separately.

Rehabilitation of the Existing Water Supply Systems

For the rehabilitation of the existing water supply systems in accordance with the Strategy for Management and Development of Water Supply and Sewerage in the Republic of Bulgaria until 2014, priority is attached to the rehabilitation of the water supply systems and the replacement of asbestos cement mains due to the high incidence of leaks which damage the pipes. Estimates point to investments of EUR 300 mn to be invested by commercial water companies.

Table 8. Summary of the Resources Needed for Priority Infrastructure Projects in the Environmental Sector for Water Supply

Priority Facilities	Resources Needed	Notes

1. Dams where construction works have started	EUR 178 mn	The proposed sources of financing are reflected in the tables attached to the Strategy - MEW – **Appendices II.1, II.2 and II.5** for financing of projects in the public sector. The option for some dams under construction to be financed with a loan from the World Bank with sovereign guarantee is being discussed.
2. New dams	EUR 125 mn	
2. DWTP	EUR 21.5 mn	
3. Water and sewerage infrastructure in tourist and resort areas	EUR 125 mn	
4. Rehabilitation of urban water supply systems	EUR 300 mn	
TOTAL:	**EUR 749.5 mn**	

II.7.2.3 Comprehensive Programme covering the objectives of Priority 2 Establishment and development of the infrastructure needed for waste treatment

Waste Treatment Facilities in Accordance with the Programme for Implementation of Directive 1999/31/EC on the Landfill of Waste

The commitments undertaken by the Republic of Bulgaria in the negotiation process for the accession to the European Union in connection with the implementation of Directive 1999/31/EC on the Landfill of Waste involve the establishment of a **system** of facilities to ensure environmentally friendly disposal of all the household waste generated in the country and closing down of all existing landfills which do not comply with the statutory requirements and the modern technical standards. In the context of these commitments, the National Programme for Waste Management Activities (2003 – 2007) provides for reconstruction of existing landfills and construction of new regional landfills (a total of 55 facilities for the whole country), as well as stage0by-stage closure of the existing landfills in the communities of a given region in accordance with the setting into operation of the respective new facility/installation for household waste treatment.

The deadline for the completion of the planned regional landfills and the closing down of the existing ones is 16 July 2009.

In order to ensure the practical implementation of the waste management hierarchy as laid down in the Law on Waste Management and the principle of their integrated management pursuant to Art. 25, para 3 of Ordinance No. 8/2004 on the Terms and Conditions for Construction and Operation of Landfills and Other Waste Disposal Facilities and Installations, there is a requirement for regional landfills to have also other waste treatment facilities and/or installations (e.g. for separation, recycling, composting, etc.) so that to implement the measures for gradual reduction of the quantity of biodegradable waste for disposal. All new projects for regional landfills meet this requirement. For example, the projects for regional landfills in the regions of Burgas, Provadia, Dobrich, Vidin, Pleven and Pazardjik, Varna, Stara Zagora, Veliko Turnovo, Borovo, Levski, Lukovit, Kostenets, Kocherinovo (covering 11 municipalities) and the projects for a Regional Waste Management Centre in Kurdjali (to serve 9 municipalities) envisage also the construction of installations for separation of recyclable waste and for composting of biodegradable waste.

The compliance with Directive 1999/31/EC on the Landfill of Waste, which requires preliminary waste treatment before disposal (as laid down in Art. 38 of Ordinance No. 8/2004) with effective date of 1 January 2007, creates the need for and constitutes one more prerequisite for the construction of a system of facilities for preliminary waste treatment, including composting, sorting

and separation of waste, as well as recycling centres, side by side with the setting into operation of new regional landfills.

Regional Landfills

In accordance with the Programme for the Implementation of Directive 1999/31/EC on the Landfill of Waste and the National Programme for Waste Management Activities (2003 – 2007), plans envisage the following:

Construction of new cells in order to expand and increase their capacity or reclamation of cells with exhausted capacity of six existing regional landfills (Varna – Vuglen, Plovdiv – Tsalapitsa, Oryahovo, Harmanli, Karlovo and Madan);

9 regional landfills are under construction – Sozopol, Silistra, Sevlievo and Pernik, Dobrich-Bogdan, Lovech, Razgrad, Yambol and Zlatista;

The projects for 24 regional landfills are in various stages of implementation, including:

- Six landfills in Dobrich, Pleven, Vidin, Burgas, Pazardjik and Provadia have their financing approved within the framework of the ISPA Programme at a total indicative value of EUR 72,336 thousand. Three of them (Dobrich, Burgas and Provadia) are in the process of implementation. Construction works for the six regions are expected to start in 2008;
- In 2003, there was approved financing within the framework of the ISPA Programme in the amount of **EUR 14,547 thousand** for the design and construction of the project for a Regional waste management Centre in Kurdjali. On 1 March 2006, the implementation of the design contract started. Construction works are planned for the end of 2007;
- Five landfills (Gabrovo, Smolyan, Kostinbrod, Botevgrad and Elhovo) at a total indicative value of the investment of **EUR 32,114 thousand** are in the process of design or issuance of an integrated permit and construction works are expected to start in 2006;
- Project for the Municipality of Plovdiv – The enterprise with a landfill for the treatment of household waste from the region of Plovdiv at the village of Shishmantsi **(EUR 18,973 thousand)** is waiting for the integrated permit and construction works will start in 2006;
- Seven landfills (Stara Zagora, Varna, Veliko Turnovo, Borovo, Levski, Kostenets and Lukovit) with a total investment value of **EUR 117,176 thousand.** Construction works for these seven regions are expected to start at the end of 2008 at the earliest;
- The preparation of the investment project for the regional landfill of Razlog **(EUR 4,671 thousand)** will be carried out within the framework of the project for stage-by-stage development of recycling in Bulgarian municipalities in accordance with regional specificities in the context of the Bulgarian-German environmental cooperation;
- The project for the construction of the regional landfill of Kocherinovo **(EUR 42,624 thousand)** is to be re-worked in connection with the comments and recommendations made by the EC after its assessment

SUMMARY BY ADMINISTRATIVE REGIONS

of the Current Condition of the Projects for Construction and Operation of the System of 55 Regional Landfills in the Country

№	Planning Region/Administrative Region	Number of Re-loading Stations Planned	Number of Regional Landfills					
			Completed and operational	Operational; the construction of additional cells (including additional construction works) continues in 2006	Operational; the reclamation of cells with exhausted capacity continues in 2006	Under construction which will continue in 2006	In the process of design or issuance of an integrated permit, the construction of which is planned for 2006	At various stages of preparation of the project
1	2	3	4	5	6	7	8	9
I	**NORTH WEST REGION**							
1	**Region of VIDIN**	-						**1** (Vidin – ISPA Technical Assistance Project)
2	**Region of VRATSA**	-	**1** (Vratsa)	**1** (Oryahovo)				
3	**Region of MONTANA**	-	**1** (Montana)					
II	**NORTH CENTRAL REGION**							
4	**Region of RUSSE**	-	**1** (Ruse)					**1** (Borovo*)
5	**Region of VELIKO TURNOVO**	-						**1** (V. Turnovo*)
6	**Region of GABROVO**	-				**1** (Sevlievo)	**1** (Gabrovo)	
7	**Region of PLEVEN**	-						**2** (Pleven - ISPA Technical Assistance Project, Levski*)
8	**Region of LOVECH**	-	**1** (Troyan)			**1** (Lovech)		**1** (Lukovit*)
III	**NORTH EAST REGION**							
9	**Region of VARNA**	-			**1** (Varna-Vuglen)			**2** (Varna*, Provadia - ISPA Technical Assistance Project)
10	**Region of TURGOVISHTE**	-	**3** (Antonovo, Turgovishte, Omurtag)					
11	**Region of SHUMEN**	-	**1** (Shumen)					
12	**Region of RAZGRAD**	-				**1** (Razgrad)		
13	**Region of SILISTRA**	-				**1** (Silistra)		

14	**Region of DOBRICH**	**1** (location not identified yet)				**1** (Dobrich, Bogdan)		**1** (Dobrich - ISPA Technical Assistance Project)

1	2	3	4	5	6	7	8	9
IV	**SOYTH EAST REGION**							
15	**Region of BURGAS**	**3** (Kiten, Burgas, Sungurlare)				**1** (Sozopol)		**2** (Burgas - ISPA Technical Assistance Project, Malko Turnovo**)
16	**Region of SLIVEN**	The municipalities of Sliven and Stara Zagora are included in the scope of the regional landfill of Yambol (Region of Yambol) which is under construction The municipality of Tvurditsa is included in the scope of the regional landfill of Stara Zagora (Region of Stara Zagora) which is in the process of preparation of the project The municipality of Kotel is included in the scope of the regional landfill of Omurtag (Region of Turgovishte) which is in operation						
17	**Region of YAMBOL**	-				**1** (Yambol)	**1** (Elhovo)	
V	**SOUTH CENTRAL REGION**							
18	**Region of PLOVDIV**	-		**1** (Karlovo)	**1** (Plovdiv, Tsalapitsa)		**1** (Plovdiv, Shishmantsi)	
19	**Region of KURDJALI**	**7** (Chernoochene, Djebel, Momchilgrad, Krumovgrad, Ivailovgrad, Ardino, Kirkovo)						**1** (Kurdjali - ISPA Technical Assistance and Construction Project)
20	**Region of HASKOVO**	-	**1** (Haskovo)	**1** (Harmanli)				
21	**Region of PAZARDJIK**	-						1 (Pazardjik - ISPA Technical Assistance Project)
22	**Region of SMOLYAN**	**3** (Chepelare, Luki and Banite)	**2** (Rudozem, Dospat)	**1** (Madan)			**1** (Smolyan)	
23	**Region of STARA ZAGORA**	**1** (Kazanluk) after feasibility study						**1** (Stara Zagora*)
VI	**SOUTH WEST REGION**							
24	**SOFIA-CITY**	-			**1** (Sofia, Suhodol)			**1** (Sofia)
25	**REGION OF SOFIA**	-	**1** (Gorna Malina)			**1** (Zlatitsa)	**2** (Botevgrad, Kostinbrod)	**1** (Kostenets*)
26	**Region of KYUSTENDIL**	**2** (Dupnitsa, Gorna Grashitsa)						**1** (Kocherinovo)- An application has been filed for ISPA financing, which will be transformed for the Cohesion Fund
27	**Region of BLAGOEVGRAD**	**1** (Blagoevgrad to the regional landfill of Kocherinovo)	**3** (Gotse Delchev, Sandanski, Petrich)					**1** (Razlog** – the project is to be prepared within the framework of the Bulgarian-German cooperation)
28	**Region of PERNIK**	-				1 (Pernik)		

	TOTAL:	**18**	**15**	**4**	**3**	**9**	**6**	**18**

Notes:

*Landfills for which applications have been filed for financing within the framework of the EU ISPA Programme with regard to the technical assistance for the preparation of projects to be implemented with resources from the EU Cohesion Fund.

** Landfills additionally submitted as pipeline of projects for financing within the framework of the EU ISPA Programme with regard to the technical assistance for the preparation of projects to be implemented with resources from the EU Cohesion Fund

Over the period 2006 – 2015, the stage-by-stage construction of household waste treatment facilities, the extension (capacity increase) through building additional cells of completed and operational regional landfills and the stage-by-stage reclamation of cells of operational regional landfills after the exhaustion of their capacity will continue, wile observing the following **operational plan and time schedule for implementation of priority infrastructure projects**, depending on the stage of preparation of each project and its readiness for implementation:

- **2006** – completion of the construction and setting into operation of 8 landfills (three with financing provided from the ISPA Programme – Sevlievo, Silistra and Sozopol and five in case of availability of co-financing from EMEPA or other form of state financing – Dobrich-Bogdan, Zlatitsa, Razgrad, Lovech and Yambol), one re-loading station (Kiten) and three additional cells of existing regional landfills (Harmanli, Karlovo and Madan), completion of the reclamation of cells with exhausted capacity of two existing regional landfills (Varna – Vuglen and Plovdiv – Tsalapitsa), as well as preparation of 3 projects for regional household waste treatment facilities (Burgas, Dobrich and Provadia) and re-working of 1 project for regional landfill (Kocherinovo) in connection with comments and recommendations made by the EC;
- **2007** - completion of the construction and setting into operation of 1 landfill (Pernik) and 1 additional cell of an existing regional landfill (Karlovo) and preparation of 3 projects for regional household waste treatment facilities (Pazardjik, Pleven and Vidin);
- **2008** - completion of the construction and setting into operation of 5 landfills (Plovdiv-Shishmantsi – Stage I, Smolyan, Elhovo, Botevgrad and Gabrovo), 3 re-loading stations (Chepelare, Luki and Banite) and preparation of 9 projects for regional household waste treatment facilities (Stara Zagora, Varna, Veliko Turnovo, Borovo, Levski, Kostenets, Lukovit, Razlog and Malko Turnovo);
- **2009** - completion of the construction and setting into operation of 10 landfills (Kostinbrod, Kurdjali, Kocherinovo, Sofia, Burgas, Dobrich, Provadia, Pleven, Vidin and Pazardjik), 12 re-loading stations (Chernoochene, Djebel, Momchilgrad, Krumovgrad, Ivailovgrad, Ardino, Kirkovo, Blagoevgrad, Dupnitsa, Gorna Grashitsa, Sungurlare, 1 RLS for the Region of Dobrich), completion of the extension of 4 operational regional landfills (Turgovishte, Sandanski, Troyan, Antonovo) and construction of a new landfill for the Region of Haskovo due to the exhausted capacity of the existing landfill;
- **2010 -** completion of the construction and setting into operation of 9 landfills (Stara Zagora, Varna, Veliko Turnovo, Borovo, Levski, Kostenets, Lukovit, Razlog and Malko Turnovo) and 2 additional cells of operational regional landfills (Madan and Gotse Delchev);
- **2011 -** completion of the construction and setting into operation of 1 additional cell of the regional landfill of Rudozem;
- **2015** - completion of the construction and setting into operation of 12 additional cells of operational regional landfills (Oryahovo, Vratsa, Omurtag, Dospat, Shumen,

Petrich, Plovdiv-Shishmantsi – 3 cells, Smolyan, Botevgrad and Gabrovo) and completion of the reclamation of the other 6 cells of the regional landfill of Plovdiv – Tsalapitsa due to their exhausted capacity.

The Appendix to the Strategy presents a linear time schedule for the implementation of priority infrastructure projects in the waste management field.

The indicative costs for the implementation of the ongoing projects during the period **2005 – 2009** amount to **EUR 126,699 thousand** with the following allocation of sources of financing:

State budget – EUR 82,050 thousand (EUR 15,844 thousand made available);

ISPA Programme – EUR 23,300 thousand (the resources are available);

EMEPA – EUR 11,581 thousand (EUR 2,392 thousand made available);

Cohesion Fund – EUR 9,767 thousand.

The indicative investment costs for the implementation of projects in the public sector during the period **2007 – 2015** amount to **EUR 411,637 thousand,** including EUR 160,546 thousand for the construction of waste treatment facility for Sofia (EUR 20,546 thousand for the landfill and EUR 140,000 thousand for a waste treatment plant) with the following allocation of sources of financing:

State budget – EUR 169,055 thousand;

Cohesion Fund – EUR 242,582 thousand.

In order for the commitments concerning the establishment of the system of regional household waste treatment facilities to be fulfilled in a timely fashion, it is necessary to take the following steps until the end of the term of office of the incumbent Government (2006 – 2009):

Priority has to be attached to the provision in 2006 from EMEPA or other form of state financing of resources in the amount of **EUR 8,479 thousand (BGN 16,584 thousand)** for completion and setting into operation of 5 regional landfills (Dobrich-Bogdan, Zlatitsa, Razgrad, Lovech and Yambol) and additional cells of existing regional landfills (Harmanli and Madan) which are under construction;

Provision from the state budget or EMEPA of the necessary resources in the amount of **EUR 4,696 thousand** for completion of the other transitional facilities for extension of regional landfills or reclamation of cells with exhausted capacity **(**Varna–Vuglen, Plovdiv-Tsalapitsa and Karlovo);

Provision of the necessary financial resources in the amount of **EUR 24,411 thousand** for completion of Stage I of the landfills whose construction is expected to start in 2006 г**.** (the enterprise with a landfill in the Region of Plovdiv at the village of Shishmantsi, Gabrovo, Smolyan, Kostinbrod, Botevgrad and Elhovo)**;**

Updating of the existing projects and preparation of new ones (the resources needed for this purpose amount to **BGN 640 thousand)** for absorption from the Cohesion Fund of the necessary resources in the amount of **EUR 16,279 thousand** for extension of operational landfills (Turgovishte, Sandanski, Gotse Delchev, Troyan, Antonovo) or construction of new ones (Haskovo).

The total amount of resources needed for the completion of the ongoing projects during the period **2006 - 2009 is EUR 53,865 thousand**, reaching to 45 out of a total of 55 planned regional landfills, which will be in operation at the end of the period (except for the landfill of Sofia in Suhodol which was closed down on 2 October 2005).

The remaining 9 (7 main and 2 back-up) regional facilities, the preparation of projects for which is intended to start in 2007 with technical assistance from the ISPA Programme, will not be completed and set into operation by 16 July 2009 in accordance with the commitments undertaken in the accession negotiations process. Given the technological time needed for preparation of the projects and the conduct of the related tender procedures, construction works cannot start earlier than the end of 2008 and will be completed at the end of 2010 at the earliest.

The following risks have been identified in connection with the implementation of the priority investment projects for the construction of regional household waste facilities:

Occurrence of difficulties in the concluding of a regional cooperation agreement with the other municipalities in the respective region due to the disagreement of some local governments with the scope of the facilities as outlined in the National Programme for Waste Management Activities (2003 – 2007) expressed in their demand for establishing new regions. Such problems exist in the regions of Kostenets (municipality of Samokov), Stara Zagora (Kazanluk, Pavel Banya, Muglizh, Gurkovo, Nikolaevo) and Kocherinovo (municipalities of Rila and Kyustendil);

Occurrence of difficulties in the identification of an appropriate site meeting the statutory requirements for a landfill in connection with financial and other constraints of local governments in undertaking the necessary geological, geo-physical, geo-engineering and hydro-geological studies in due course and at the required level of quality.

Actions Undertaken

Pursuant to the requirements of Art. 17 of the Law on Waste Management (LWM) (promulgated in The State Gazette, No. 86/2003), mayors of municipalities have to undertake actions to identify a new site and build new waste treatment facilities and/or installation or to make arrangements, together with other local governments, for waste treatment on a regional basis at least two years prior to the exhaustion of the landfill currently in operation. Although some municipalities have undertaken the necessary actions, due to the delayed launch of construction works of regional landfills by the Ministry of the Environment and Water (MEW), Consortium Geocomplex Sofia OOD, Sofia was awarded Public Procurement Contract No. 551 of 22 October 2004 to carry out comprehensive geological, geo-physical, geo-engineering and hydro-geological studies of the territory of the Republic of Bulgaria foe the identification of landfill sites for non-hazardous waste.

In 2004-2005, the company conducted pre-selection and short listing of potential sites suitable for the construction of 12 regional landfills (Borovo, Veliko Turnovo, Varna, Stara Zagora, Lukovit, Kostenets, Malko Turnovo, Dobrich, Provadia, Burgas, Pazardjik and Sofia) and for 7 of these regions (Borovo, Veliko Turnovo, Stara Zagora, Lukovit, Kostenets, Malko Turnovo and Sofia) carried out detailed land survey studies on two (or three) sites which local governments selected as compliant with the greatest number of criteria. The reports on the findings of the studies were submitted to the leading municipality in each region so that to

help the final selection of the site on the basis of the EIA procedure, for construction of a regional landfill in accordance with the National Programme. In 2006, works continued in the other regions, which will greatly facilitate local governments in the fulfillment of their obligations and speed up the process of preparation of projects for implementation.

Public disagreement in the communities where construction of regional landfills is envisaged ("Not in my backyard" or NIMBY syndrome)

There are protests and disagreement of the population of settlements neighbouring to the selected and/or potential landfills sites in Sofia and the regional landfills of Veliko Turnovo (Tserova Koria, Kapinovo, Mindya, Merdanya), Burgas (Karanovo, Malka Polyana), Yambol (municipality of Tundja and inhabitants of Yambol who do not want the landfill to have regional scope), Levski (Stejerovo), Pazardjik (municipality of Bratsigovo). The same negative attitude is displayed by the population also with regard to the investment initiative in the field of waste management not only in Bulgaria but in the other countries as well, known as the NIMBY syndrome or "not in my backyard"). As a result, the implementation of projects is delayed or inhibited, leading to a risk for the fulfillment of the commitments undertaken in the course of the EU accession negotiations.

In this connection, it is necessary to carry out a broad public awareness campaign to inform the population about the intentions to find a long-term solution of the waste management problem in the respective region and about the measures planned to minimize the unfavourable impact on human health and the environment. On the other hand, we find it appropriate with regard to infrastructure projects of regional and national importance to introduce legislative measures similar to those in the Netherlands, which would help overcome the problem.

Biodegradable Waste Treatment Facilities

In accordance with Directive 1999/31/EC on the Landfill of Waste, each Member State has to draw up a strategy to reduce the quantity of biodegradable household waste to be treated. The strategy has to ensure the attainment of the following objectives:

By 2010 – to have the quantity of biodegradable waste for treatment to be reduced to 75% of the total weight of biodegradable household waste generated in 1995;

By 2013 – to have the quantity of biodegradable waste for treatment to be reduced to 50% of the total weight of biodegradable household waste generated in 1995;

By 2020 – to have the quantity of biodegradable waste for treatment to be reduced to 35% of the total weight of biodegradable household waste generated in 1995.

In accordance with the draft Strategy for reduction of the quantity of biodegradable waste for treatment, 11 facilities should be established for mechanical and biological treatment of biodegradable waste and composting of mixed household waste in closed reactors, as w ell as 26 outdoor sites for composting of "green waste".

The Strategy envisaged the setting into operation of the first 4 facilities to start in 2010 and of the other 7 by 2015. Facilities are allocated, depending on the strategic planning regions with one facility in the North-West Region and two facilities in each of the other

regions. As to the outdoor sites for composting "green waste", the operation of 12 sites is expected to start in 2008, 6 sites by 2010, and the remaining 8 will be launched by 2015.

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR 45,095 thousand** distributed as follows by sources of financing:

- State budget – EUR 18,038 thousand;
- Cohesion Fund – EUR 27,057 thousand (Due to the continuously changing financial package for all operational programmes in the country and the lack of a fixed definitive percentage of national co-financing added to the EU resources, one cannot specify the involvement of the EU finds as financing elements. If this amount cannot be made available within the framework of the Operational Programme Environment 2007 – 2013, the difference should be transferred for financing by the state budget).

Closing Down and Reclamation of Existing Landfills

Directive 1999/31/EC on the Landfill of Waste introduces some requirements as to the preparation of plans for adjustment of existing landfills to the new standards within 3 years and the implementation of these plans within 10 years of the effective date of the Directive.

The plans for the existing landfills include measures for putting them out of operation and closing them in accordance with the requirements of Ordinance No. 8 on the Terms and Conditions for Construction and Operation of Landfills and Other Waste Disposal Facilities and Installations (promulgated in The State Gazette, No. 83 of 24 September 2004) transposing Directive 1999/31/EC with deadline on 16 July 2009.

The resources needed for implementation of the projects in the public sector over the period **2005 – 2009** amount to **EUR** 3**,837 thousand** distributed as follows by sources of financing:

- State budget – EUR 3,837 thousand (EUR 129 thousand are available).

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR** 89**,000 thousand** distributed as follows by sources of financing:

- State budget – EUR 34,922 thousand (EUR 1,129 thousand for co-financing of ISPA resources are available);
- ISPA – EUR 3,388 thousand (the resources are available);
- Cohesion Fund/European Regional Development Fund – EUR 50,690 thousand.

Except for the ongoing projects and those to be prepared within the framework of the technical assistance from the ISPA Programme, there is no project pipeline to apply for financing from the Cohesion and Structural Funds of the closing and reclamation of existing landfills or the existing projects need updating, which threatens the observance of the deadlines for fulfillment of the commitments.

Establishment of a National Hazardous Waste Treatment Centre

Bulgaria has not completed the infrastructure needed for hazardous waste treatment at the nationwide level, which leads to potential risk for human health and the environment due to the uncontrolled disposal and long-term keeping of hazardous waste in the country. In this connection, it is necessary to establish a National Hazardous Waste Treatment Centre to provide the necessary capacity for treatment of waste from municipalities and small sources of hazardous waste for which it is not appropriate to have own treatment facilities. In 2004, a project was prepared and submitted to the EC for the establishment of a National Hazardous Waste Treatment Centre. Currently, the project is being re-worked in accordance with the comments received from the EC after its assessment.

The resources needed for implementation of the project over the period **2008 – 2011** amount to **EUR** 56**,129 thousand** distributed as follows by sources of financing:

- State budget – EUR 22,452 thousand;
- Cohesion Fund – EUR 33,677 thousand (Due to the continuously changing financial package for all operational programmes in the country and the lack of a fixed definitive percentage of national co-financing added to the EU resources, one cannot specify the involvement of the EU finds as financing elements. If this amount cannot be made available within the framework of the Operational Programme Environment 2007 – 2013, the difference should be transferred for financing by the state budget).

Recovery of Contaminated Areas and Closure and Rehabilitation of Big Facilities for Industrial and Hazardous Waste for Which the State as the Former Owner is Liable for the Damage Caused

The results of Stage II (landfills and facilities for industrial and hazardous waste) of the National Programme for the Reduction of the Number and Risk of Landfills and Old Waste Contamination indicate that the risk of landfills for industrial and hazardous waste should not be ignored. They do not meet the modern technical requirements and create greater risks to human health and the environment. There are many places in the country where hazardous and harmful substances are stored or have been stored and the adjacent soils and surface or underground waters are contaminated due to the lack of security measures and poor management.

The Programme for the Implementation of Directive 1999/31/EC on the Landfill of Waste envisages closing down and environmental recovery not only for household waste landfills but also those for industrial and hazardous waste.

In the case of some privatized enterprises, the State has undertaken the financing and implementation of programmes for elimination of damage caused by old contamination. Nevertheless, in some cases the State as the former owner is still liable for the damage caused in accordance with the "polluter pays" principle. For various reasons, however, it has not fully stepped up its responsibilities related to the closing and recovery of big facilities for industrial and hazardous waste and contaminated territories.

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR 28,632 thousand** distributed as follows by sources of financing:

- State budget – EUR 28,632 thousand.

Other Waste Treatment Facilities in Accordance with the National Programme for Waste Management Activities

In 2006, a new National Programme for Waste Management Activities will be worked out to plan the development of the waste treatment infrastructure during the period 2008 – 2013. Its Action Plan will cover the completion of ongoing projects and the implementation of a series of new investment projects which will take waste management standards and practices to the level required by the EU with a view to Bulgaria's expected accession in 2007.

Facilities and Installations for Treatment of Infectious and Other Hazardous Medical Waste (Hazardous Waste Incinerators and Installations for Autoclaving of Infectious Waste)

The management of waste in human medicine is an integral part of healthcare; the threats resulting from mismanagement of this type of waste reduce the overall healthcare benefit.

There exists the potential risk of spread of infectious diseases among the people involved in the generation, collection, storage, transportation and treatment of hazardous waste, as well as among patients and the population as a whole. In this connection, it is necessary to complete the effective system of facilities and installations for treatment of infectious and other hazardous waste from medical establishments throughout the country.

The completion of the system of facilities and installations for treatment of infectious and other hazardous waste from medical establishments will create conditions for effective enforcement of the ban on the landfill of infectious waste in accordance with the national legislation and Directive 1999/31/EC on the Landfill of Waste (Art. 5, para 3c).

The resources needed for implementation of the ongoing projects over the period **2005 – 2009** amount to **EUR 7,205 thousand** distributed as follows by sources of financing:

- State budget – EUR 2,768 thousand;
- Swiss Government – EUR 2,500 thousand (the resources are available);
- EMEPA – EUR 1,937 thousand (EUR 937 thousand are available).

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR 16,000 thousand** distributed as follows by sources of financing:

- State budget – EUR 16,000 thousand.

Infrastructure Needed for Separate Collection of Various Types of Common Waste (Specific Waste Flows)

The establishment of a system for separate collection of specific waste flows, including the separate collection of hazardous waste in the overall household waste flow, includes the establishment of **facilities for separate collection of the various household waste fractions**. The purpose of this system is to reduce the amount of waste disposed and to

increase the share of re-used, recycled or recovered waste from the specific waste flows in accordance with the Sixth Framework Programme for the Environment. This will improve waste management practices as a whole and the management of specific waste flows in particular.

The establishment of a system of facilities for separate collection of specific waste flows will achieve:

Enforcement of the waste management legislation and fulfillment of the obligations derived from:

- Council Directive 91/689/EEC of 12 December 1991 on hazardous waste;
- Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste;
- Council Directive 75/442/EC, Council Directive 1999/31/EC, European Parliament and Council Directive 94/62/EC and the amending European Parliament and Council Directive 2004/12/EC on packaging and packaging waste;
- Council Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances, amended with Commission Directive 93/86/EEC adapting to technical progress Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances and Commission Directive 98/101/EC adapting to technical progress Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances;
- Council Directive 75/439/EEC on the disposal of waste oils, amended with Commission Directive 87/101/EEC, Council Directive 91/692/EEC standardizing and rationalizing reports on the implementation of certain Directives relating to the environment and Council Directive 96/59/EC on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT);
- Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment and Directive 2002/96/EC of the European Parliament and the Council on waste electric and electronic equipment (WEEE), amended with Directive 2003/108/EC of 8 December 2003.

Creation of conditions for implementation of the statutory requirements and measures to prevent and reduce waste, as well as to establish systems for separate collection and treatment of the various fractions in the household waste flow;

Prevention of the pollution of the environment from dangerous components of waste electric and electronic equipment, batteries and accumulators, fluorescent lamps and mercury-containing lamps, waste pesticides, biocides, chemicals, lacquers, dyes, solvents and other specific waste flows;

Separation of the various specific waste flows with a view to creating opportunities for their recycling and re-use.

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR** 37**,000 thousand** distributed as follows by sources of financing:

- State budget – EUR 8,552 thousand;
- PHARE Programme – EUR 28,448 thousand.

Regional Facilities for Treatment of Construction and Demolition Waste

The treatment of construction and demolition waste is an issue for which the country lacks well established practices and technical infrastructure yet. The current levels of generation of such waste are high and it is necessary to encourage re-use practices at the expense of their reduced disposal.

The introduction of new models of construction and demolition waste management will contribute to the reduction of the overall quantities of waste disposed, guaranteeing their environmentally friendly utilization. The recycling of this waste will make it possible for the quantities of the primary (natural) materials used in construction to be reduced.

The resources needed for implementation of the ongoing projects over the period **2005 – 2009** amount to **EUR** 6**,500 thousand** distributed as follows by sources of financing:

- State budget – EUR 1,577 thousand;
- EMEPA – EUR 1,023 thousand (the resources are available);
- Cohesion Fund – EUR 3,900 thousand.

The resources needed for implementation of the projects in the public sector over the period **2007 – 2015** amount to **EUR 20,000 thousand** distributed as follows by sources of financing::

- State budget – EUR 8,000 thousand;
- Cohesion Fund – EUR 12,000 thousand.

Investments Needed for the Construction of Waste Treatment Infrastructure

The resources needed for implementation of the ongoing projects for the construction of waste treatment infrastructure over the period **2005 – 2009** amount in total to **EUR 144,241 thousand (EUR 46,125 thousand out of which are available)** distributed as follows by sources of financing:

- State budget – EUR 90,233 thousand (EUR 15,973 thousand are available);
- EMEPA – EUR 14,541 thousand (EUR 4,352 thousand are available);
- ISPA – EUR 23,300 thousand (the resources are available);
- Cohesion Fund – EUR 13,667 thousand;
- Swiss Government – EUR 2,500 thousand (the resources are available).

The total amount of the resources needed to complete the financing of ongoing projects over the period **2005 – 2009** is **EUR 98,117 thousand**.

The resources needed for implementation of the projects in the pubic sector for the construction of waste treatment infrastructure over the period **2007 – 2015** amount in total to **EUR 703,493 thousand (EUR 4,517 thousand out of which are available)** distributed as follows by sources of financing:

- State budget – EUR 305,652 thousand (EUR 1,129 thousand for co-financing of the ISPA resources are available);
- Cohesion Fund/European Regional Development Fund – EUR 366,006 thousand;
- ISPA – EUR 3,388 thousand (the resources are available);
- PHARE – EUR 28,448 thousand.

The total amount of the resources needed to complete the financing of the projects in the pubic sector for the construction of waste treatment infrastructure over the period **2007 – 2015** is **EUR 698,976 thousand**.

The resources needed to complete the financing of the projects in the pubic sector over the period 2006 – 2015 amount in total to EUR 797,094 thousand distributed as follows by sources of financing:

- State budget – EUR 388,971 thousand (this amount includes the national co-financing equal to 40 % or EUR 252,093 thousand of the resources from the Cohesion Fund/European Regional Development Fund described in the item below, as well as co-financing (equal to 23.11% - EUR 8,552 thousand) of the PHARE resources);
- Cohesion Fund/European Regional Development Fund - EUR 379,673 thousand (out of which resources in the amount of EUR 359,280 thousand should be within the framework of the Operational Programme Environment 2007 – 2013);
- PHARE – EUR 28,448 thousand.

The allocation of the financial resources needed for investment in the waste treatment infrastructure among the commitments under the Programme for the Implementation of Directive 1999/31/EC on the landfill of waste as laid down in the National Programme for Waste Management Activities is as follows:

- The Programme for the Implementation of Directive 1999/31/EC on the landfill of waste - **EUR 714,848 thousand**;
- The National Programme for Waste Management Activities - **EUR 82,245 thousand.**

Total resources needed for preparation of projects for the construction of waste treatment infrastructure:

The resources needed for the updating of the existing projects for regional landfills with a view to their extension with resources from the Cohesion Fund over the period **2007 – 2009** amount to **EUR 640 thousand евро,** and they are to be provided from the state budget or EMEPA;

The resources needed for preparation of projects in the pubic sector for implementation with resources from the Cohesion Fund/European Regional Development Fund over

the period **2007 – 2015** amount to **EUR 28,255 thousand (EUR 10,185 thousand** out of which are available**)** distributed as follows by sources of financing:

- State budget or EMEPA – EUR 18,070 thousand (including EUR 8,027 thousand for the facility for Sofia. The amount does not include the national co-financing of the ISPA resources);
- ISPA – EUR 10,185 thousand (the resources are available).

These resources needed for the preparation of projects are based on expert estimates, depending on the specific features and scope of the project and also on whether a new project is worked out or an existing project is updated and they range between **2.5 and 10% of the indicative value of investment costs**.

The implementation of priority investment projects over the periods **2005-2009** and **2005-2015** with the respective deadlines, indicative values and sources of financing are described in **Appendices II.6**, **II.7, II.8 and II.9.**

Appendix II.10 presents the linear time schedule for the implementation of priority investment projects in the sector until 2015, while **Appendices II.11 and II.12** include maps of the waste treatment facilities to be established over the periods **2005-2009** and **2005-2015**.

Appendix II.113 presents the Programme for the Establishment of the Waste Treatment Infrastructure.

Summary of the Resources Needed for Priority Infrastructure Projects in the Environmental Sector for Waste Management – Table No. 9

Table 9

Priority Facilities	Resources Needed	Notes
1. Regional landfills	EUR 538.336 mn	The proposed sources of financing are reflected in the tables attached to the Strategy - MEW – **Appendices II.6, II.7, II.8 and II.9** for financing of projects in the public sector.
2. Installations for treatment of biodegradable waste	EUR 45.095 mn	
3. Closing down and reclamation of existing landfills	EUR 92.837 mn	
4. Establishment of a National Hazardous Waste Treatment Centre	EUR 56.129 mn	
5. Recovery of contaminated areas and closure and rehabilitation of big facilities for industrial and hazardous waste for which the State as the former owner is liable for the damage caused	EUR 28.632 mn	
6. Facilities and installations for treatment of infectious and other hazardous medical waste (Incinerators for hazardous waste and installations for autoclaving of infectious waste)	EUR 23.205 mn	
7. Infrastructure for separate collection of the various types of common waste (specific waste flows)	EUR 37 mn	

Priority Facilities	Resources Needed	Notes
8. Regional facilities for treatment of construction and demolition waste	EUR 26.5 mn	
TOTAL:	**EUR 847.734 mn**	

II.8 Public-Private Partnership

II.8.1 Waste Treatment Facilities

The public-private partnership in the environmental sector will be promoted along the following lines:

Establishment of facilities for treatment and utilization of construction and demolition waste

The National Programme for Waste Management Activities envisages the establishment of five facilities of this type to serve specific regions.

Feasibility studies and the initial intentions to attract the private sector reveal that these can be facilities and installations located in areas of intensive and large-scale construction works like Sofia, the big cities and resort areas, which will make the projects economically viable. The regions identified are Sofia, Varna, Burgas and Pleven.

The first regional facility for treatment of construction waste is in the process of preparation of the project in the region of Plovdiv, covering the municipalities of Plovdiv, Maritsa, Kaloyanovo, Stamboliiski, Rodopi, Perushtitsa, Suoedinenie, Krichim, Assenovgrad, Rakovski, Sadovo, Brezovo and Parvomai. The site will be in the village of Purvenets, municipality of Rodopi. The facility will include an installation for recovery of construction and demolition waste and a inert waste landfill.

Household Waste Treatment

The policy for involvement of the private sector in waste treatment depends entirely on the policy of individual local governments. Given the scarce resources for investment purposes in this sector, public-private partnerships are to be promoted. The main spheres of activity are as follows:

In the context of the waste management problem in **the city of Sofia** and the urgent need for overcoming it, taking into account the interest of many companies to take part in the project with their waste treatment technologies, the MEW finds it appropriate to establish a waste treatment facility for Sofia on the basis of public-private partnership.

Regional Landfills

The potential projects involving public-private partnership are the five regional landfills in **Gabrovo, Smolyan, Kostinbrod, Botevgrad and Elhovo at total value of the investment** in the amount of **EUR 32,114 thousand**. They are at the stage of preparation of

working designs or issuance of integrated permits. Construction works are envisaged to start in 2006.

- **Installations for Treatment of Biodegradable Waste**

In accordance with the draft Strategy for Reduction of the Quantities of Biodegradable Waste for Disposal, the projects which may be implemented on the basis of public-private partnership are the installations for mechanical and biological treatment of biodegradable waste or composting of mixed household waste in closed reactors. The allocation of the facilities is based on planning regions, with a facility in the North-West Region and two facilities in each of the other regions.

II.8.2 Public-Private Partnership in Water Supply

Opportunities exist in the water supply sector for PPP in the construction, maintenance and rehabilitation of the necessary infrastructure. This is particularly relevant to the infrastructure in tourist areas and also to the construction of dams for water supply and integrated water use.

Appendix II.5 presents the draft proposal for the construction of dams and water supply systems during the period 2006 – 2015 on the basis of concession procedures.

II.9 Assistance to the Enhancement of the Municipal Administrative Capacity for Enforcement of the Environmental Legislation and Absorption of the EU Financial Support

The MEW coordinates the implementation of several projects financed from ISPA and PHARE with the main objective to help local governments prepare for enforcement of the environmental legislation and absorption of the EU financial assistance.

Technical assistance for institutional strengthening for preparation and implementation of ISPA/Cohesion and Structural Funds in the environmental sector. Total budget: EUR 3,600 thousand.

The project is oriented to help the ISPA Executive Agencies at the MRDPW and MEW, municipalities, water companies and waste management businesses in the public sector, which are beneficiaries of projects within the framework of the ISPA Programme or the Cohesion and Structural Funds in future. **Main tasks:**

Assistance to the ISPA Executive Agencies at the MRDPW and MEW in the preparation of projects, the implementation of projects and the management of the whole ISPA roadmap in the environmental sector;

Assistance to the development of reliable institutional capacity in the administrations receiving resources from the ISPA Programme, which are directly involved in the programming and implementation of measures under the ISPA Programme in the water and waste sector in Bulgaria;

Support to initiatives intended to prepare the ISPA Executive Agencies and the end beneficiaries for the implementation of specific measures to be financed from the Cohesion and Structural Funds.

Technical assistance for regional and municipal planning of waste management with a view to fulfilling the statutory requirements in the sector. Total budget: EUR 1,300 thousand. Main tasks:

Collection and assessment of the available information;

Updating of municipal waste management plans and regulations;

Technical assistance in the implementation of the Municipal Waste Management Programmes in three pilot regions;

Establishment of the necessary regional waste management structures;

Training and development of training programmes.

Strengthening of the administrative capacity at the local level for the enforcement of the environmental legislation. Total budget: EUR 1,900 thousand.

Main tasks:

Analysis and assessment of the administrative capacity for the enforcement of the environmental legislation;

Development of a Strategy and implementation of programmes for strengthening of the administrative capacity for the enforcement of the legislation in the field of water and waste and environmental assessment of plans and programmes;

Programming of actions to improve the planning process at the municipal level;

Actions for the development of human resources at the municipal level;

Establishment of a pilot information system;

Public awareness campaign and dissemination of results;

Supply and installation of computers, telecommunication and office equipment.

Further development of the administrative capacity to meet the EU requirements in the environmental sector at the local and regional level. Total budget: EUR 2,000 thousand.

The project is in the initial phase of its implementation. The Terms of Reference and the specifications for the supply of equipment have been worked out. In accordance to the preliminary time tables, the two public tender dossiers should be submitted to the EC delegation by the middle of April 2006. The objectives of the project include:

Further strengthening of the administrative capacity at the local level for enforcement of the environmental legislation;

Assistance to local governments in the development and support of schemes for preparation and financing of municipal environmental projects;

Support for the implementation of a long-term strategy for the training of municipal environmental experts and specialists at the RIPEW in the field of investment programming and project preparation;

Dissemination of the EU experience in the planning of the protection of the environment, the development and application of various financing schemes and the implementation of projects;

Improvement of investment planning skills and training for the implementation of the Operational Programme Environment;

Improvement of the information system and data exchange at the local level on issues related to the environment;

Support for the introduction of best practices in the management of environmental activities;

Establishment of a centre for public awareness, consultations and specific environmental training;

Dissemination of the experience gained in the implementation of the project.

The main prerequisite for the successful absorption of the EU funds is the existence of a very good pipeline of projects. At present, the main source of funding for this purpose is the ISPA Programme. One should remember that its resources are used to prepare environmental projects but only in the water and waste sectors.

II.10 Summary of the Resources Needed for Priority Infrastructure Projects in the Environmental Sector

The estimated investment costs for the implementation of infrastructure projects in the fields of water quality and waste management amount to BGN 5,712.93 mn over the period from 2005 to 2015.

These resources have been justified by the MEW and they are directly related to the programmes for the fulfillment of the commitments derived from the implementation of the EU environmental directives.

The resources needed for the implementation of water supply projects proposed by the MRDPW amount to BGN 1,499 mn. Some of these resources, i.e. EUR 216 million, are envisaged in the Operational Programme Regional Development. Estimates point to the need for priority financing of projects which are not subject to concession due to the envisaged shortage of financial resources in the amount of BGN 1,076 mn. In this connection, it is necessary to undertake updating of the design and activities and studies with a view to exploring the opportunities for public-private partnership, seeking integrated use of water in dams.

In accordance with the indicative financial framework worked out by the Ministry of Finance, the amount of investments from all sources of financing in the environmental sector over the period 2007-2013 is BGN 3,831.38 mn. There is shortage of investment resources in the amount of BGN 2,957 mn, including BGN 1,881.55 mn for projects in the environmental sector.

II.11 Measures for Promotion of the Preparation of the Necessary Projects and Documents at the Municipal Level Ensuring Preparedness for Absorption of Resources from the Cohesion and Structural Funds of the European Union

Provision of resources to local governments for feasibility studies and work designs in order to have a pipeline of projects in due course and with the required quality and scope, which are eligible for absorption of the resources of the EU Cohesion and Structural Funds through the following measures:

Development of **a financial instrument for state assistance** to the preparation of environmental projects. We find the intervention of the state to be needed since the main beneficiaries of these projects are municipalities and currently they are not in a position to allocate sufficient resources for a high-quality pipeline of projects;

Change of the criteria and conditions for the financing of waste management projects by EMEPA in order to provide opportunities for receiving grants in the preparation of projects**.**

Enhancement of the administrative capacity at the municipal level for preparation, development, assessment, implementation and monitoring of projects for building the environmental infrastructure.

II.12 Institutional Organisation of the Implementation – Responsible Structural Units – Operational Interaction Coordinates

In accordance with the existing Law on Water, the policies related to the operation, development, reconstruction and modernization of sewer networks and urban waste water treatment plants are pursued by **the Minister of Regional Development and Public Works** in the cases when the facilities are owned by the State or by the mayors of the respective municipality when the facilities are municipal property.

The Waster Supply and Sewerage Directorate at the MRDPW performs the coordination and management of investment programmes for water supply and sewerage projects financed from the state budget through the MRDPW. It assists and coordinates water and sewerage projects financed within the framework of the PHARE Programme.

The ISPA Executive Agency Directorate – Public Works and Water and Sewerage Projects at the MRDPW manages and coordinates infrastructure projects financed through the EU ISPA Programme and by international financial institutions.

The PHARE Executive Agency Directorate at the MRDPW manages and coordinates water supply and sewerage projects in tourist areas.

The Programming of Regional Development Chief Directorate at the MRDPW prepares and coordinates projects to be financed from the EU Regional Development Fund.

The Water Directorate at the MEW monitors the construction and reconstruction of sewer systems and gives opinions on the priorities in the development of sewer systems in accordance with the National Programme for priority development of UWWTP for settlements with over 10,000 equivalent inhabitants and the Programme for the Implementation of Directive 91/271/EEC on the urban waste water treatment.

The Waste Management Directorate at the MEW monitors the construction of the necessary waste management infrastructure in the country and gives opinions on the specific investment projects in accordance with the National Programme for Waste Management Activities and the Programme for the Implementation of Directive 1999/31/EC on the landfill of waste.

The EU Environmental Funds Directorate performs the functions of the ISPA Executive Agency at the MEW, as well as the PHARE National Programme Executive Agency.

In connection with the resources from the EU Cohesion and Structural Funds, the Ministry of the Environment and Water through its Environmental Cohesion Policy Directorate **will perform the functions of a managing authority for the Operational Programme Environment 2007 – 2013. The Managing Authority will be responsible for the overall management and implementation of the Operational Programme in accordance with the principles of good financial management. For this purpose, the Managing Authority will delegate certain implementation tasks to the Intermediary Body. The Intermediary Body for the Operational Programme Environment 2007 – 2013 is the EU Environmental Funds Directorate at the Ministry of the Environment and Water.**

Enterprise for Management of Environmental Protection Activities (EMEPA)

EMEPA has the status of a state-owned enterprise within the meaning of Art. 60 of the Law on the Protection of the Environment. It is the major national source of funds for environmental projects and for co-financing of projects together with international financial institutions. Experts from the enterprise take part in the control of the implementation of projects throughout their life cycle through the mechanisms of monitoring and control of investment projects.

II.13 System for Monitoring and Evaluation of the Implementation – Indicators for Current and Periodic Performance Analysis and Updating

A system for monitoring and assessment is envisaged in order to establish the degree of attainment of the objectives set out in the National Strategy for Integrated Development of the Infrastructure, which will use analytical indicators.

II.13.1 Indicators for the Construction and Development of the Infrastructure Needed for the Collection, Treatment and Disposal of Waste Water

Length of the existing sewer networks (km)

Constructed/reconstructed urban waste water treatment plants (number)

Existing facilities for treatment of the sludge from urban waste water treatment plants (number)

Amount of investments in:

the construction of sewer networks (BGN '000);

the construction/reconstruction of urban waste water treatment plants (BGN '000);

the construction of facilities for treatment of the sludge from urban waste water treatment plants (BGN '000).

II.13.2 Indicators for the Monitoring of the Construction and Development of the Infrastructure Needed for Waste Treatment

1. Regional household waste facilities:

completed and operational regional landfills (number);

regional landfills with new cells constructed in order to increase their capacity (number);

regional landfills under construction (including those with additional cells under construction) (number);

2. Closed down and reclaimed landfills (number);

3. Existing National Centre for the Treatment of Hazardous Waste (description of the progress in the implementation of the project);

4. Completed installations for the treatment of biodegradable waste (number);

5. Recovery of contaminated areas and closure and rehabilitation of big facilities for industrial and hazardous waste for which the State as the former owner is liable for the damage caused (number);

6. Completed incinerators for hazardous medical waste (number);

7. Completed installations for autoclaving of infectious medical waste (number);

8. Completed centres for separate collection of the various types of common waste (specific waste flows) (number);

9. Completed regional facilities for treatment of construction and demolition waste (number).

III. ENERGY INFRASTRUCTURE

III.1 Introduction

The main tasks in the energy sector are related to the development of an appropriate national, regional and trans-continental energy infrastructure, ensuring:

Greater opportunities for power generation, cross-border exchange and export;

Diversification of supplies to the country and of the transit of primary energy resources not only to the region of South-Eastern Europe (SEE) but also to the Member States of the European Union (EU).

Prior to and after the accession to the EU common energy market, Bulgaria has to continue to build and modernize its energy infrastructure, which will enable the country to take active part in it and to expand its leading position within the framework of the Energy Community, making investment decisions on the basis of accurate economic analyses.

The main objectives of the Bulgarian energy policy coincide with those of the EU energy policy for the development of:

Competitive national, regional and all-European energy market, protecting the environment;

Safeguards for the security of energy supply.

The commitments undertaken by the Bulgarian side under Chapter 14 Energy lead to accelerated introduction of the requirements of the *acquis* in the energy sector. The necessary reforms have been carried out and, in fact, the liberalization measures in the energy sector are adequate to the essential ones in the EU Member States. This is the result of the shaping of the new EU energy policy for energy market liberalization, which is currently implemented by EU Member States and accession countries, as well as the other countries in the region participating in the Athens Process through the implementation of the Agreement on the Establishment of the Energy Community.

The commitments undertaken in the course of the accession negotiations with regard to the implementation of the *acquis* in the energy sector create a favourable investment climate in the Bulgarian energy sector. They contribute to the macroeconomic stability in the country and its investment credit rating. This leads to a total value of revenues of EUR 693 mn for 67% of the capital of electric distribution companies at the time of their privatization of EUR 230 per subscriber on the average – the highest average price per subscriber reached in Eastern Europe (compared to some EUR 200 in the Czech Republic, EUR 100-150 in Romania and EUR 80 in Ukraine).

At present, the actual opening of the electricity market is 13 %, and that of natural gas is 5.09%.

The general trend for Bulgaria and the SEE region is the liberalization of the market for electricity and natural gas in accordance with the EU policy for the development of a competitive energy market. The main priority in the short-term development plans for the regional energy cooperation is the effective functioning of the Energy Community.

Bulgaria played an essential part, when the Agreement on the Establishment of the Energy Community was signed in Athens on 25 October 2005 during the Bulgarian presidency-in-office of the Athens process.

The rates of opening up the national markets as laid down in the Agreement on the Establishment of the Energy Community are realistic and do not pose any implementation problem to Bulgaria in the context of the strategy for the development of the energy sector and the commitments undertaken in the course of the EU accession negotiations in connection with the application of shorter time limits for the opening up of the electricity and gas market.

The establishment of the Energy Community actually means establishment of the world's largest integrated competitive energy market with over 500 million consumers, which operates on the basis of common rules. The huge number of consumers and producers on this market will guarantee its high liquidity and hence small price fluctuations and better predictability of cash flows, leading to clear rates of return and low risk for potential investors in the region.

At various points of time for the recent years, the Bulgarian energy sector covered 45% to 100% of the deficit in the electricity balance of countries which are net importers in SEE, which is a substantial contribution to the economic and political stabilization of the region at present. This fact is indicative of the role of the Bulgarian energy sector in the stable power supply of the SEE region.

The Bulgarian energy sector accounts for a sizeable share of energy investments in SEE. The ongoing energy projects in the Bulgarian energy sector have total secured financing of more than EUR 2.3 billion this year, while by 2007 the volume of investments is expected to exceed EUR 6 bn евро, whereby a significant portion of investments is made by private and public companies without sovereign guarantees.

The implementation of the priority gas projects for Bulgaria in the region of SEE and the EU, such as NABUCCO gas pipeline, the trans-Adriatic gas pipeline along European corridor VIII (Bulgaria – Macedonia – Albania – Italy), the Dupnitsa – Dimitrovgrad – Nis gas pipeline between Bulgaria and Serbia and the enhancement of the capacity of the transit gas infrastructure, will give a strong impetus to the gasification of the country and lead to a possible reduction of natural gas prices. The financial resources needed for the NABUCCO project only amount to EUR 4.6 bn and the construction of the gas pipeline across the Bulgarian territory will cost about EUR 450 mn.

Oil pipeline projects: Burgas-Alexandroupolis and Burgas – Skopje – Vllora (AMBO) are worth about EUR 1.8 bn.

The gas distribution process is speeded up in Bulgaria, creating prerequisites for consumers' choice of cheaper energy resources than electricity. This will produce a particularly positive impact on small and medium-sized businesses, as well as household consumers who will reduce their electricity costs.

Important private investments are made in the enhancement of energy efficiency and the development of renewable energy sources (RES) in connection with the fulfillment of the requirements of the *acquis* in this sphere. The activities related to the enhancement of the

energy efficiency of industries and households will ensure orders placed with numerous Bulgarian companies. Currently, there are a lot of proposals for the construction of hydro power plants. All these activities will create jobs and expand the business of many companies.

The Bulgarian energy sector attracts and provides the biggest investments in the Bulgarian economy. The implementation of all these projects will create opportunities for Bulgarian companies to take part in construction and rehabilitation works, logistics and related activities. This means new jobs, development of whole regions, improvement of the infrastructure, and increased revenues to the local and central government budget.

Most of the financing of these projects is expected to come from large energy companies investing in the Bulgarian energy sector and from the own resources of energy enterprises, as well as from the EU programmes and funds, the Stability Pact and international financial institutions and organisations.

III.2 Analysis of the Condition of the Energy Infrastructure

The provision of energy and energy resources to the economy and the population is achieved by means of:

Well structured primary energy balance of the country;

Well developed energy infrastructure and use of the favourable geographical location of the country.

The power generation system of Bulgaria has well developed structure of electricity generation, underlying its stability:

Thermal power plants based on local and imported fuel - some 48% of all the electricity generated;

Nuclear energy - some 44% of all the electricity generated;

Hydro power plants - some 8% of all the electricity generated.

The economic indicators of the power generation system are slightly influenced by the most volatile imported energy resources pricewise. Approximately 65% of the energy resources used are imported primarily from the Russian Federation.

The European Union, too, is dependent on the imports of primary energy resources but this dependence is less - about 40% with the tendency to increase to 70% in twenty years. Serious efforts are made along three lines to reduce this tendency:

Reduction of the relative energy consumption per unit of GDP;

Optimal use of local and renewable energy sources;

Diversification of the energy supply.

III.2.1 Energy Resources

The share of imported energy resources in Bulgaria in the total importation of raw materials, capital goods and consumer goods[8] is about 18%. The structure of these energy resources[9] is the following: energy sector – 35.4%; oil refineries – 39.6%; chemical industries – 3.1%; coking plants – 5.4 %; industry – 5.4%; others – 11.1% .

In 2005, the structure of imported energy resources** in the generation of electricity and heating was the following:

Nuclear energy – 60.9 %;

Coal – 19.7 %;

Natural gas – 16.1 %;

Liquid fuels – 3.3 %.

The only significant local energy resource is low calorific coal with high sulphur content. Unlike many EU Member States, where local coal mining has no commercial prospects, local lignite coal in Bulgaria has strong positions as a resource for the generation of electricity.

In 2005, the changes in the mining and hence the consumption of coal in the Republic of Bulgaria reflected the overall decline on a year-to-year basis as follows:

Energy coal: - 6.1%;

Coal for the population: - 29.7%;

Coal for briquette production: - 8.2%;

Total coal mining: - 6.9%.

The decline in the local coal mining compared to 2004 is due to the reduced consumption by all categories of users.

In 2005, in the generation of electricity 15,381.3 thousand tcf of primary energy resources were used, which was by 4.1% on a year-to-year basis.

The share of the various types of fuels in the generation of electricity in 2005 was as follows:

Nuclear energy – 45.2%;

Local solid fuels – 36.3%;

Imported solid fuels – 10.4%;

Gaseous fuels – 3.2%;

Energy equivalent of hydro energy – 3.8%;

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[8] - % EUR

[9] % conditional solid fuel

Liquid fuels – 1.1%.

In the generation of heating 2,470.4 thousand tcf of primary energy resources were used, which was by 4.1% on a year-to-year basis. That was due to the increased consumption of heating in industry and the needs of the central heating system of households. The structure of the fuels used in the generation of heating in 2004 and 2005 is presented in Table 10.

Table 10

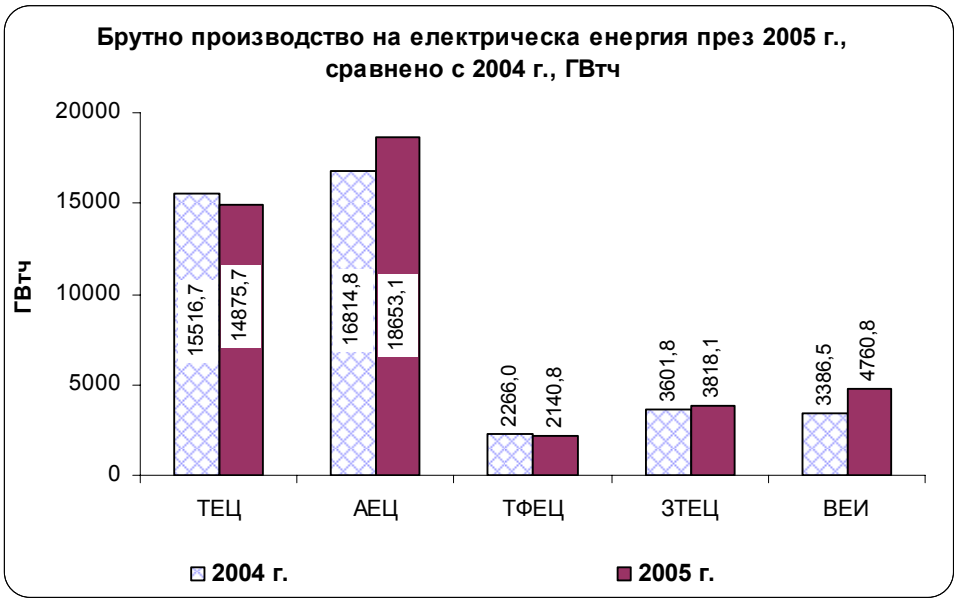
Primary Energy Resources	2004 (%)	2005 (%)	2005/2004 (%)
Local coal	8.8	8.8	0.0
Imported coal	26.0	26.4	0.5
Liquid coal	13.4	8.6	-4.8
Gaseous fuels	50.7	55.0	4.4
Nuclear energy	1.1	1.1	0.0

III.2.2 Electric Power Generation

Since 1990 the electric power generation in the Republic of Bulgaria has followed an overall upward development trend. In 2005, there were generated 44,248.5 GWh of electricity out of which: 33.6% from thermal power plants; 42.2% from the nuclear power plant; 10.8% from RES; 4.8% from heating power plants; and 8.6 % from factory thermal power plants – Diagram 1.

Diagram 1

Gross Output of Electricity in 2005 Compared to 2004 (GWh)



The substantial increase of electric power generation from RES was due mainly to the favourable climatic conditions and the policy to promote power generation by micro hydro power plants.

Nuclear energy is a major factor in the power and energy balance of the country at high technological levels and efficiency of production. The creation of market conditions and the ensuing increased competitiveness in the energy sector are factors external to the existing programmes for high level of nuclear safety in the nuclear facilities. With a view to fulfilling its commitments for protection of the environment and reduction of the emissions of CO_2, SO_2, NO_x and volatile ash, Bulgaria will continue to rely on nuclear energy and to develop it in accordance with the modern requirements for safety, expediency and reliability, nuclear safety and radiation protection.

In 2005, Kozlodui NPP generated 18,653.1 GWh or 42.2% of the total quantity of electric power generated in the country.

On 7 April 2005, the Council of Ministers made the final decision to build Belene Nuclear Power Plant.

It should be noted that the reduced output of the nuclear power plant is set off primarily by thermal, heating and factory power plants. In this connection, a major reason for the increased emissions of sulphur dioxide is the growth of the gross electric power generation from thermal power plants, which inevitably leads to the use of larger quantities of local lignite coal with high sulphur content. Furthermore, there is increase of the electric power generated by hydro power plants which is due mainly to the favourable climatic conditions and the policy to promote power generation by micro hydro power plants.

The final consumption of electric power in the country in 2005 compared to 2004 is presented in Table 11.

Table 11

	2004	**2005**	**2005/2004**
Businesses and public sector	11,986.5	14,538.0	21.3%
External consumers	5,466.6	3,517.2	-35.7%
Household sector	8,772.6	9,038.2	3.0%
Total	**26,225.7**	**27,093.4**	**3.3%**

The measures undertaken to reduce commercial and technological losses of distribution companies provide opportunities for greater supplies of electric power to the end users. The growth of **electricity consumption** in 2005 (+ 3.3% on a year-to-year basis) and the observed increase of the gross **electric power generation** by 6.4% in the Republic of Bulgaria are indicative of the results achieved with the measures to enhance efficiency in the electric power generation - Diagram 2.

Diagram 2

Final Electricity Consumption in Industry and Households in Bulgaria

The final industrial consumption is characterized by predominant participation of electric power also in solid fuels. Since 2000 there has been a trend of increase of gaseous fuels. The trend will continue and it will produce an impact on the use of electric power.

Electric power and solid fuels are of paramount importance for meeting the needs of the population for fuels and energy. The share of the final household consumption of electric power ranges from 32% to 42% and that of solid fuels - from 30% to 40%. The share of gaseous fuels in final consumption is still below 1%.

National Electric Distribution Network

The length of **the electric distribution network owned by the eight electric distribution companies** in the Republic of Bulgaria is **148,875 km,** including:

Medium-voltage networks – 62,810 km;

- Low-voltage networks – 86,065 km.

National Electric Transmission Network

The **high-voltage** electric transmission network through the territory of the Republic of Bulgaria is owned by the National Electric Company (NEC EAD). The company has 13 electric transmission regions.

The high-voltage electric transmission system of NEC EAD is the following:

Air electric lines:

400 kV – total length of 2,356 km;

220 kV – total length of 2,692 km;

110 kV – total length of 9,518 km.

Transformer substations:

32 system substations 400/220/110 kV, 400/110 kV, 220/110 kV with total transformer capacity of 16,817 MVA;

247 reducing substations 110/20/10/6 with total transformer capacity of 13,716 MVA.

Key stations:

A key station 400 kV;

A key station 110 kV.

The national electric power network is connected to the electric power networks of neighbouring countries as indicated in Table 12.

Table 12

Country	Voltage	Number of Lines	Length, km
Romania	400	2	115.7 (14)*
Romania	220	1	98.1 (18.6)
Romania	400	1	235.4 (85)
Romania	400	1	230.6 (80.3)
Turkey	400	1	136.6 (59.5)
Turkey	400	1	150 (59)
Гърция	400	1	174.7 (72.7)
Macedonia	110	1	49.3 (21.5)
Macedonia	110	1	12.7 (5.3)
Macedonia	400	Under construction	
Serbia	400	1	122.6 (37)
Serbia	110	1	64.1 (41.1)
Serbia	110	1	21 (11.8)
Romania	400	2	115.7 (14)[10]

Heating Power

The heating power generated in 2005 was 17,868.1 GWh or 3.3% more on a year-to-year basis. The total quantity of heating power was generated as follows: 44.4 % by heating thermal power plants; 52.4% by factory thermal power plants; 2.3% by heating power plants; and 0.9% by the nuclear power plant. The increased heating power generation results from

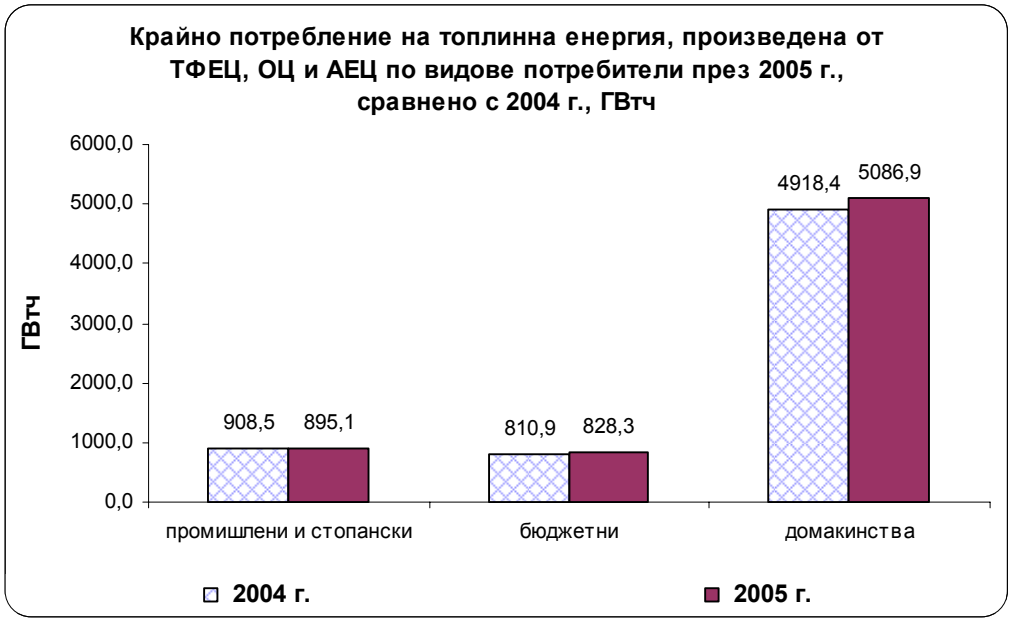
[10] Length of the section within the territory of the Republic of Bulgaria

the economic recovery and the gradual return of household consumers to central heating services.

The final consumption of the heating energy generated by heating thermal power plants, heating power plants and the nuclear power plant by types of consumers in 2005 compared to 2004 is presented in Diagram 3.

Diagram 3

Final Consumption of Heating Energy Generated by Heating TPP, Heating Power Plants and the NPP by Types of Consumers in 2005 compared to 2004

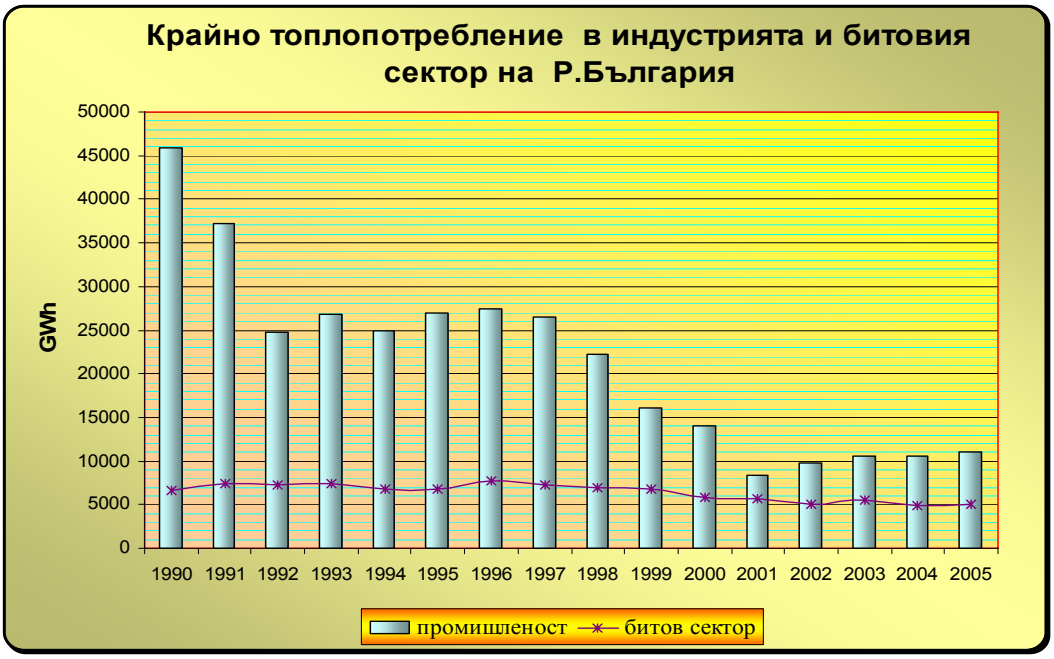


Industrial and Commercial Budget-supported Households

The increased consumption in the household and budget-supported sector is quite indicative. One of the reasons for the growth in the household sector is the return of consumes to central heating services. Important role in this process is performed by the introduction of individual metering of the consumption and the opportunities for its regulation, as well as the investments in the reduction of losses at subscriber stations and the heating network - Diagram 4.

Diagram 4

Final Heating Consumption in the Industrial and Household Sector of the Republic of Bulgaria



Gradual increase of consumption has been observed for the last few years. The main reason for this growth is the growing consumption in the industrial and public sector. Since 1990 the consumption of heating power in transport, agriculture and commerce has been decreasing steadily.

III.2.3 Natural Gas

National Gas Transmission System

The national gas transmission system includes the following components:

Gas pipelines – Table 14.

Table 14

Gas Pipeline	Diameter, mm	Length, km
Main line	1,000	62
North semi-ring	700	383
South semi-ring	700	424
High pressure diversions	From 150 to 500	Over 900

Compressor stations - Table 15.

Table 15

Compressor Station	Total Capacity, MW

Kardam 1	24
Vulchi Dol	15
Polski Senovets	10

- gas distribution stations (GDS) – over 70 serving more than 200 consumers of natural gas in the country.

Transit Gas Transmission Network

The transit gas transmission network consists of gas pipelines - Table 16.

Table 16

Gas Pipeline	Diameter, mm	Length, km
General transit gas pipeline to Turkey, Greece and Macedonia	1200	190
Related loops	1200	90
Transit gas pipeline to Turkey	1000	75
Related loops	1000	55
Common section to Greece and Macedonia	1000	340
Transit gas pipeline to Greece	700	130
Transit gas pipeline to Macedonia	500	65
Transit gas pipeline to Yugoslavia – *in preparation*	700	95

Compressor stations - Table 17.

Table 17

Compressor Station	Total Capacity, MW
Kardam 2	31
Lozenets	44
Strandja	19
Ihtiman	19
Petrich	13
Provadia	45

The needs for natural gas in the Republic of Bulgaria are met mainly through import from the Russian Federation. Local extracting is carried out by Petreco Sarl – Bulgaria EOOD (Galata deposit) and PDNG AD, Dolni Dubnik. In 2005, the market share of the locally extracted natural gas reached 15%.

The average annual ***consumption*** of natural gas over the last five years (2001-2005) is about 3 bn cub m, which is substantially lower than the highest consumption levels of 1989-1990 (reaching close to 7 bn cub m).

The main reasons for this decline in consumption are the following:

The restructuring of the Bulgarian economy and the transition to market conditions;

The reduced consumption of natural gas by district heating companies as a result of the introduction of a system for sharing heating energy costs, making it possible for consumption to be regulated;

The unfavourable market environment for metallurgy and chemical industries manufacturing artificial fertilizers;

The introduction of new energy saving technologies mainly in the cement production and glass industries.

The consumption pattern of natural gas is characterized by a very big share of chemical industries and power generation, whereas the consumption by the users of gas distribution companies (small and medium-sized enterprises, commercial outlets, public services and households), albeit steadily growing for the last few years, is quite small (6.9% in 2005).

The transit of natural gas started towards Turkey in 1987. In 1996, the transit gas pipeline to Greece was set into operation and, a year later, that to Macedonia. Growing all the time, the transit volumes reached 15.5 bn cub m p.a. in 2005.

Transit gas pipelines have the following **capacity**:

To Turkey – 14 bn cub m p.a.;

To Greece – 2.4 bn cub m p.a.;

To Macedonia – 0.5 bn cub m p.a.

The quantities of natural gas in transit to third countries in 2005 were as shown in Table 18.

Table 18

End Users	**Quantities of Natural gas in Transit, mn cub m**	**%**
Turkey	12,986	83.8
Greece	2,426	15.7
Macedonia	77	0.5

Total:	15,490	100

In the next few years to come, Bulgargas EAD will construct about 95 km of gas pipeline to Serbia with an annual capacity of 1.5 bn cub m.

The ***Chiren*** underground gas storage facility is located on the site of a depleted gas condensate deposit in the vicinity of the village of Chiren, North-West Bulgaria. The facility serves only the national gas transmission network. Its function is to set off seasonal fluctuations in the consumption of natural gas and to maintain emergency, operational and strategic reserves of natural gas.

There is a discussion on the opportunities for the establishment of a ***new underground storage facility*** at existing depleted gas condensate deposits, in the salt stock of Mirovo in North-East Bulgaria or in water-yielding strata. It is necessary to carry out feasibility studies and geological, technical and economic surveys of the three options.

Expected Results

Use of the opportunity for transit of Russian and Asian energy resources (natural gas and oil) to Southern, Central and Western Europe, as well as use of these resources and full development of nuclear energy;

Reaching of leading positions in the export of electricity to the regional electric power market of SEE and the common electric power market of the EU. Development of appropriate energy infrastructure to enable the export of electric power, diversification of supplies to the country and transit of primary energy resources to the region of SEE and EU Member States;

Reduction of the non-performance risks on the supply side through diversification of energy resources by types, sources and suppliers, taking into account the regional and global trends on energy markets;

Development of a competitive energy market;

Development of competition among major energy suppliers;

Reduction of the price of primary energy resources;

Creation of competitive advantages for the Bulgarian energy sector;

Establishment of an appropriate environment for attracting substantial investment to the Bulgarian energy sector.

Bulgaria substantially lags behind in the development of gas distribution networks and the household gasification not only in comparison to EU Member States but also some neighbouring countries in SEE. At present, actual distribution (supply) of natural gas is performed within the territory of about 35 to 40 municipalities or some 15% of all municipalities in Bulgaria, while the EU average is above 80%. In Bulgaria, gas distribution licenses have been issued (or are in the process of issuance) for 49% of all municipalities but it most of them gasification has started only recently or not started at all.

There is a "market fault" here because the operation of market forces alone would not be sufficient to provide gas supplies to over a half of Bulgarian municipalities in which no investor interest has been displayed due to the lack of available gas pipelines to the respective territories. The lack of an alternative, i.e. the inability of these municipalities to use natural gas leads to their future delayed economic development in comparison to municipalities with gas supplies. The following numbers illustrate the serious lagging behind in the gas distribution and household gasification in Bulgaria - Table 19.

Table 19

Indicators of gasification	**Bulgaria**	**EU**	**Lagging behind**
Percentage of municipalities where natural gas is distributed (supplied)	15% (~40 municipalities)	EU above 80%	~5 times
Percentage of municipalities have gas distribution licenses have been issues or are in the process of issuance (over 2/3 have not be gasified yet)	49.5% (2005)	EU above 90%	~2 times
Percentage of households with gas supply	0.4% (2005) (~16,000 households) Romania - 2 mn households	EU above 50% The Netherlands: above 92%; Slovakia: 90%; UK: 82% (2005); France: 76%; Hungary: 75%; The Czech Republic: 66%; Poland: 52%;	~125 times

Furthermore, within the framework of the Energy Community (between the EU and the countries in the region of SEE) established with the Agreement on the Establishment of the Energy Community signed in Athens on 25 October 2005, the EC is preparing a draft Regional Transition Strategy in the Gas Sector aimed at promoting gas distribution and increasing the consumption of natural gas in the countries from the region. The strategy clearly states that the region substantially lags behind in the use of natural gas compared to the EU and that the countries in the region will undertake to promote and speed up the development of gasification measures. The Regional Transition Strategy in the Electric Power Sector drafted by the EC and adopted by the Council of Ministers of the Energy Community contains a special chapter on the development of gas distribution and the countries undertake to promote and speed up the development of gasification measures. Similar findings can be found in the World Bank's Generation Investment Study of the region of SEE.

Considerable impetus to the development of gas distribution networks and household gasification can be given through assistance in the form of grants for the construction of gas pipelines (gas distribution diversions) from the national gas transmission system to the respective municipalities which are not covered by the licenses issued so far or the scope of the established gas distribution territories (gas distribution regions) and which are about a half of all municipalities at present. The construction of a gas pipeline to the respective municipality could evoke interest among investors to build the gas (gas distribution) network within the territory of the municipality or the region, i.e. make it attractive to private companies.

The effect will be multiplied through gas distribution within the municipalities whose territory will be crossed by the routes of gas pipelines reaching larger cities (municipalities), i.e. whole regions will be supplied with gas by private gas distribution companies.

A possible option in this respect is to have the respective municipality own the gas pipeline (gas distribution diversion) from the national gas transmission system to the municipality, which would greatly facilitate the absorption of EU funds. The municipality could grant the right of use of the gas pipeline to the licensee, i.e. the company which is to build the gas network within the territory of the municipality.

Appendix III.1 presents the gas infrastructure within the territory of the Republic of Bulgaria.

III.2.4 Energy Efficiency

One of the major macro-indicators for energy efficiency is the *final energy intensity*, measures as the ratio between the final energy consumption and the gross domestic product. Another major indicator revealing the efficiency in the conversion of energy resources and the efficiency of the energy consumption by the end user is the primary energy intensity.

Diagrams 5 and 6 show the changes of the primary and final energy intensity in Bulgaria over the period 1990 – 2004 adjusted on the basis of the purchasing power parity (PPP).

Diagram 5

PRIMARY ENERGY INTENSITY

(PPP adjusted)

1990 – 2004

Diagram 5

FINAL ENERGY INTENSITY

(PPP adjusted)

1990 – 2004

The long-term reduction of the final and primary energy intensity during the period 1997 – 2004 resulted from the substantial decline in the electric and heating power consumption in the Republic of Bulgaria at that time, as well as the introduction of new energy efficient technologies in the industrial and household sectors at lower levels of energy intensity.

Environment

In 2003, the following emissions were observed from the generation of electric and heating power (Table 20):

Table 20

Company	Electric Power Generated	Heating Power Generated	Emissions of SO_2	Dust Emissions	Emissions of NOx	Emissions of CO_2
	MWh	**MWh**	**Mg**	**Mg**	**Mg**	**Mg**
TOTAL TPP AND NPP	33 322 810	0	751 378	7 611	33 820	17 746 798
TOTAL HEATING PP	0	761 086	6 283	4 908	1 069	33 415
TOTAL HPP	3 294 325	0	0	0	0	0
TOTAL FTPP	5 926 182	17 742 033	268 515	74 130	36 427	6 588 337
TOTAL:	**42 543 317**	**18 503 119**	**1 026 176**	**86 649**	**71 316**	**24 368 549**

The increased emissions from all types of power plants (by some 10-15%) are due to the increased consumption of solid fuels. Thermal power plants emit the largest quantities of dust - approximately 86%. The reason lies in the lack of electrostatic dust collecting filters. Currently, the level of carbon dioxide emissions is below the level set out in the Kyoto Protocol. For the purposes of fulfilling the obligations under the Protocol, it is necessary to stabilize carbon dioxide emissions since the first period is followed by a second one with new and more stringent restrictions.

The structure of carbon dioxide emissions reveals that thermal power plants account for the biggest share. This is due to the burning of mainly coal which is the largest "contributor" to greenhouse gas emissions. Since heating power plants operate entirely on the basis of natural gas, they account for a small percentage of the allocation of carbon dioxide emissions.

Regional Processes

The general trend in Bulgaria, the region of SEE and the EU is the liberalization of the market for electric power and natural gas in accordance with the EU policy of establishing a competitive energy market. The main priority in the short-term development plans for the regional energy cooperation is the effective functioning of the Energy Community.

Bulgaria is an active participant in the EU initiative to establish a regional energy market. It was under the Bulgarian presidency-in-office of the Energy Community that the Agreement on the Establishment of the Energy Community was signed in Athens on 25 October 205. Bulgaria was also the first country to ratify the Agreement on 8 February 2006 when the National Assembly adopted the law on its ratification.

The time schedule under the Agreement on the Establishment of the Energy Community for the opening up of the national markets is realistic and does not cause any implementation problems to Bulgaria since it complies with the National Energy Development Strategy and the time limits determined by the accession to the European Union.

The time schedule for the participation of Bulgarian companies in the liberalized energy market is the following:

As from 1 January 2007 – participation in the internal energy market of the European Union – Opportunities for free supplies of electric power to all non-household consumers in the EU Member States;

As from 1 July 2007 - participation in the internal energy market of the European Union – Opportunities for free supplies of electric power to all consumers (non-household and household) in the EU Member States;

As from 1 January 2008 - participation in the Energy Community – Opportunities for free supplies of electric power also to all non-household consumers in the SEE countries which are not EU Member States – Serbia and Montenegro, Macedonia, Albania, Croatia, Bosnia and Herzegovina and the territory under the provisional administration of the UN mission in Kosovo and Turkey provided that the latter joins the Agreement;

By 2010 – participation in the emerging Euro-Mediterranean energy market, where participants are the European Community, Turkey and all Arab countries (from the Maghreb to the Mashreq) in the Mediterranean region;

As from 1 January 2015 - participation in the Energy Community – Opportunities for free supplies of electric power also to all consumers (non-household and household) in the SEE countries which are not EU Member States – Serbia and Montenegro, Macedonia, Albania, Croatia, Bosnia and Herzegovina and the territory under the provisional administration of the UN mission in Kosovo and Turkey provided that the latter joins the Agreement.

The strategic geographical location of Bulgaria between the south-eastern wing of the EU and Russia and between the EU and the Caspian region and the Middle East creates considerable opportunities for diversification of the types and sources of energy supplies and development of a competitive energy sector. Therefore Bulgaria is interested in the implementation of major infrastructure projects for transit of oil and natural gas to Southern, Central and Western Europe, as well as projects related to the expansion of Bulgarian electricity exports to the region of SEE and the EU.

The development of a competitive national energy market is a prerequisite for effective participation in the regional energy market and the EU common energy market.

In this connection, the Concept for the Participation of the Republic of Bulgaria in Regional Energy Markets and the EU Common Energy Market adopted by the Council of Ministers on 20 may 2004 envisages actions along three lines:

Accelerated development of a competitive national energy market and sector;

Active participation in the establishment of and leading positions on the regional energy market – the Energy Community;

Full-fledged integration and effective participation in the common energy market of the European Union and the emerging Euro-Mediterranean energy market.

III.3 SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats)

The condition described above leads to the identification of the following strengths, weaknesses, opportunities and threats fro the Bulgarian energy sector:

STRENGTHS	WEAKNESSES
Well developed structure of the energy sector; Major exporter of electricity in the region, covering from 45% to 100% of the deficit in the electric power balance of the countries which are net importers in SEE; Key country in the transit of natural gas in the region of SEE; Leading positions in the establishment and shaping of the (regional) energy market of the Energy Community; High qualifications of the human resources employed in the energy sector; Advanced restructuring of the energy sector; Successful pricing reform and introduction of modern regulatory methods; The structure of financing in the sector is close to the standard equity ratios.	Scarce local primary resources and strong dependence on the importation of energy resources; Obsolete energy facilities; Lack of adequate infrastructure for the improvement of the quality of the ambient air; Small percentage of recovery of local renewable energy sources in the gross domestic consumption; Insufficient availability of gas distribution networks and gas supply to households; Obsolete generation facilities.
DEVELOPMENT OPPORTUNITIES	**THREATS**
Favourable geographical location; Establishment of the Energy Community; Process of establishment of the Euro-Mediterranean energy market; Harmonization of the legislation with the *acquis communautaire*; Stable macroeconomic environment; Favourable conditions for attracting foreign investment, including the privatization of generation capacities;	Obsolete technologies and manufacturing techniques and low energy efficiency of the economy; Weak involvement of the private sector in R&D; Substantial discrepancies in the development of individual administrative regions and municipalities within planning regions; Potential new costs for businesses and the public sector related to the enforcement of the new environmental legislation;

Sable legislative and regulatory framework and distinct market structures for the implementation of big investment projects; Existence of good potential to achieve a substantial share of energy generated from RES; Potential to improve the energy efficiency in all sectors, including end users.	Degraded physical environment and buildings which do not meet some basic requirements with regard to energy efficiency; Unharmonious development of the EU accession process in the region of SEE.

The weaknesses enumerated above determine the following major spheres in which the energy sector lags behind the EU average levels - Table 21.

Table 21

Sphere	Measure	Bulgaria	EU
Energy efficiency	Primary energy intensity - koe/$ (ppp95)	0.395 (2004)	0.21 (2004)
Renewable energy sources	Share of RES in the gross domestic power consumption	6-8% (2000-2004) 11% by 2010	22% by 2010
Environment	Sulphur dioxide emissions per capita (kg)	123.6 (2002)	Austria – 4.4 (2002) Portugal – 19.8 (2003) Hungary – 35.3 (2003) The Czech Republic – 23.3 (2003)
Natural gas	Percentage of households with gas supply	0.4% (2005)	EU above 50% (2005) UK - 82% (2005)
Age of generation facilities	Years in operation of the main generation facilities	Over 30 years	

An essential weakness of the Bulgarian energy sector is the strong dependence on imported primary energy resources. Similar is the situation in the EU as well. This threat has been identified also by the EU and the institutions which started the procedure for the development of a new energy policy oriented to the reduction of the energy dependence on third countries. Similar is the situation in the EU, in the energy market of which both national and regional energy markets will be integrated. At present, 41 % of the demand for energy in the EU is covered by oil, 22% - by natural gas, 16% - by coal, 15% - by nuclear energy and 6% - by RES. In the EU energy mix, the share of natural gas is expected to grow from 22% to 29% by 2030. Currently, the EU imports 76% of the oil and 40% of the natural gas it needs.

This threat has been identified also by the EU and the institutions which started the procedure for the development of a new energy policy oriented to the reduction of the energy dependence on third countries.

The possible solution is related to the diversification of energy resources by types, sources and suppliers, while taking into account the regional and global trends on energy

markets. The diversification of energy supplies will create competition among the major energy suppliers and hence reduce the price of primary energy resources. This would generate competitive advantages for the Bulgarian energy sector.

In addition, the preservation and promotion of the leading regional role of the Bulgarian energy sector which covers a sizeable portion of the deficit in the electric power balance of the countries in South-Eastern Europe (SEE) which are net importers and plays a pivotal role in the gas transit to countries in the region, coupled with the above mentioned positive effects of the diversification of energy supplies, would create a favourable environment to attract significant investment to the Bulgarian energy sector.

The strategic geographical location of Bulgaria between Russia and the southern and south-eastern wing of the EU and between the EU and the Caspian region and the Middle East creates considerable opportunities for diversification of the types and sources of energy supplies and development of a competitive energy sector. Bulgaria is located between the main producers and consumers of energy resources in Eurasia. The opportunities for transit of Russian and Asian energy resources (natural gas and oil) to Southern, Central and Western Europe and the use of these resources and the full-fledged development of nuclear energy will create a competitive energy sector which could not only be a serious exporter of electricity to the regional electricity market of SEE and the EU common electricity market but also perform the transit of significant energy flows (oil and gas) to countries in the region and to Central and Western Europe.

Furthermore, a major opportunity (with high degree of likelihood of its emergence and substantial impact on the industry) is the establishment of the Energy Community of SEE, which actually means establishment of the world's largest integrated competitive energy market with over 500 million consumers, which operates on the basis of common rules. The huge number of consumers and producers on this market will guarantee its high liquidity and hence small price fluctuations and better predictability of cash flows, leading to clear rates of return and low risk for potential investors in the region.

A very important positive effect of the establishment of the regional energy market for Bulgaria, as well as for the other countries in SEE is the opportunity to minimize the overall costs for meeting the needs of the energy demand in the region.

III.4 Conclusions

The establishment and effective functioning of a competitive national, regional and all-European energy market call for the existence of:

a sufficient number of participants, guaranteeing liquidity on the market;

reasonable universal rules for the operation of the market;

adequate energy infrastructure.

Bulgaria ensures the fulfillment of the first two conditions at the national level with the adoption of the Energy Strategy and the Law on Energy.

Since the signing of the Agreement on the Establishment of the Energy Community, prerequisites have been created for the fulfillment of the first two conditions also at the regional level. The establishment of the Energy Community between the EU and the countries in SEE actually means establishment of the world's largest integrated competitive energy market with over 500 million consumers, which operates on the basis of common rules. The huge number of consumers and producers on this market will guarantee its high liquidity and hence small price fluctuations and better predictability of cash flows, leading to clear rates of return and low risk for potential investors in the region.

Special attention should be paid to the development of appropriate national and regional energy infrastructure, expanding the opportunities for cross-border exchange and export of electricity, for diversification of supplies to the country and for transit of primary energy resources to the region of SEE and to EU Member States. Before and after the accession to the EU common energy market, Bulgaria has to continue the development and modernization of its energy infrastructure, which will enable its active participation there and in the Energy Community with investment decisions based on accurate economic analyses.

It is also necessary to fully utilize the potential for enhancing energy efficiency (EE), energy saving and the wider use of renewable energy sources (RES) since these activities produce significant and sustainable (economic, social and environmental) impact and, except for some types of RES, they provide quick financial rate of return under the conditions of a functioning market economy.

The development of infrastructure for power generation from RES, including that for joining the transmission or distribution network, is directly related to the fulfillment of the commitment of the Republic of Bulgaria to achieve a share of 11% of the power generated from RES by 2010 (Technical adaptations to the Accession Treaty related to Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources RES in the internal electricity market).

The attainment of the indicative goal of 11% calls for increase of the electricity produced from RES to 461 TWh in 2010. The opportunity for increase of the share of the electricity produced from RES in the gross domestic consumption of electric power is associated primarily with the use of biomass in all its forms in co-generation facilities for electric and heating energy and with the options for development of new hydro power capacities, as well as with the use of the wind energy in areas with suitable wind potential.

In addition, the development of the gas distribution infrastructure will help overcome Bulgaria's significant lagging behind in the development of gas distribution networks and the household gasification not only in comparison to EU Member States but also in comparison to some neighbouring countries. The measures will assist the development of local communities, enhance the quality of life and the competitiveness of the local economy and create conditions to attract investments.

Great attention should be paid also to the development of the infrastructure needed to meet the requirements for limitation of emissions of certain pollutants into the air from large combustion plants (Directive 2001/80/EC).

In the process of the accession negotiations on Chapter 22 Environment, the Republic of Bulgaria undertook the commitment to meet the requirements set out in Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants, within the scope of which there are 23 generation plants and 8 industrial plants. The energy sector is the single largest source of sulphur dioxide and a major source of nitrogen oxides. The only significant local energy resource is lignite coal of low calorific value and high sulphur content. Besides, since the early decommissioning of some units of Kozlodui NPP the share of the energy produced from solid fuels has increased. Unlike many EU Member States, where local coal mining has no commercial prospects, local lignite coal in Bulgaria has strong positions as a resource for the generation of electricity. This fact, matched with its importance for the security of energy supplies, determines the major place of the complex of mines and power plants. A large-scale European study conducted for the last ten years has proved that the value of the electricity generated from coal would be doubled if the value of externalities (impacts on the environment, human health, etc.) were taken into account.

Keeping in mind the dynamic development of processes in the energy sector and with a view to the new realities related to the participation in the regional and the common energy market of the EU, as well as the expected updating of the EU energy policy by means of the new Green Paper on the European Strategy for Secure, Competitive and Sustainable Energy prepared by the European Commission and made available on 8 March 2006, the main guidelines for the updating of the Energy Strategy and hence for the development of the energy infrastructure relate to:

the development of the Bulgarian energy sector in the context of the Energy Community and the common energy market of the EU, while preserving and expanding its leading position in the region of SEE;

the fulfillment of the commitments of the Republic of Bulgaria under the EU Accession Treaty;

the development, in the context of the trans-European energy networks, of the priority energy projects of major importance to Bulgaria in connection with the need for guaranteed security through diversification of energy supplies to Bulgaria, SEE and the EU and for effective functioning of the Energy Community;

the development trends in the demand and supply of energy resources in the region of SEE, Europe and the world and the actions needed on part of Bulgaria for ensuring a beneficial price of energy resources for the Bulgarian economy, taking into consideration the fact that the long-term contracts for the supply and transit of natural gas with Gasexport will expire after 2010;

the requirements of the respective environmental EC Directives as factors in the future guidelines for the development of the Bulgarian energy sector, including the development trends in the emissions trading and the prices of reduced emission units;

the policies, measures and programmes for substantial reduction of the energy intensity in all sectors of the economy and life and the ever fuller use of the potential of local renewable energy sources;

the approaches to the implementation and the sources of financing of strategic projects related to the preservation of the leading positions of the Republic of Bulgaria in SEE; the development of models and schemes for attracting investment, using flexible financing mechanisms, financial incentives, maximum absorption of the resources from the Operational Programmes under the EU Cohesion and Structural Funds relevant to the energy sector and others..

III.5 Main Objectives, Priorities and Activities in the Development of the Energy Infrastructure

III.5.1 Objectives

The strategic objective of the Bulgarian energy sector is to achieve economically efficient and secure supply of energy in compliance with the environmental requirements.

The attainment of this objective calls for the following goals to be achieved:

provision of affordable and efficient energy services helping economic growth and social prosperity;

accelerated development of a competitive national energy market and sector;

active participation in the formation and leading positions in the regional energy market –the Energy Community;

full-fledged integration and effective participation in the common energy market of the European Union and the emerging Euro-Mediterranean energy market;

diversification of the energy supplies to the country and ensuring a beneficial price of energy resources to the Bulgarian economy;

protection of the environment against the impact of activities in the energy sector.

This strategic objective contains the major priorities of the existing Energy Strategy of the Republic of Bulgaria as follows:

guaranteed security of energy supplies;

establishment and effective functioning of competitive national, regional and all-European energy markets;

protection of the environment against the harmful impact of energy transforming technologies.

III.5.2 Priorities and Activities in the Development of the Energy Infrastructure

The strategic objective contains the major priorities of the existing Energy Strategy of the Republic of Bulgaria as follows:

guaranteed security of energy supplies;

establishment and effective functioning of competitive national, regional and all-European energy market;

protection of the environment against the harmful impact of energy transforming technologies.

In this connection, the main activities will be focused on:

the establishment of a well developed energy infrastructure, including:

- the construction of new power generation capacities based on nuclear fuel and local coal;
- the rehabilitation and modernization of key power plants to extend their operation and to comply with the EU environmental requirements;
- the expansion of the national electricity transmission network and the development of inter-system links with neighbouring countries and in the region of SEE;
- the establishment and expansion of the gas infrastructure for transmission and transit of natural gas to Bulgaria, SEE and the EU, of the national gas transmission network and the gas supply to municipalities and regions through the development of gas distribution networks;
- the development of the infrastructure for oil transit to countries in SEE, the EU and world markets.

the provision of efficient and affordable energy services through creation and improvement of conditions for competition;

the reduction of the energy intensity of the economy, the enhancement of the energy efficiency and the use of the potential and local renewable energy sources;

the modernization of the energy infrastructure and the construction of facilities to comply with the environmental requirements.

The priorities set out in the Strategy fully comply with the priorities of the energy policy of the European Union.

Priority No 1: Security of energy supplies

ensuring of the energy balance of the country;

development of a low-pressure natural gas market;

diversification of energy sources.

Priority No 2: Establishment and effective functioning of competitive national, regional and all-European energy market

gradual liberalization and opening of Bulgarian energy markets in compliance with the requirements of the EU Electric and Gas Directives;

development of competitive energy markets;

establishment of stable market relations on the basis of a competitive energy market;

privatization: change of ownership to attract investment and to modernize management.

The expected actions will be oriented to:

Gradual liberalization of the national electricity market and transition from the single-buyer model to stage-by-stage development and expansion of a competitive market based on the regulated access model with bilateral contracts and a balancing market;

Gradual opening of the market also to foreign access in compliance with the requirements of Directive 2003/54/EC after 2006, while preserving the principle of reciprocity;

Gradual transition in the gas sector from the actual monopolistic structure with a single importer and wholesale supplier (Bulgargas EAD) to regulated access of third parties to the transmission and distribution networks and to gas storage facilities.

Priority No 3: Enhancement of the energy efficiency

Enhancement of the energy efficiency in the electric power sector along the following lines:

- Reduction of the own needs and specific costs;
- Reduction of losses in the transmission and distribution.

Improvement of the energy efficiency indicators in the central heating system;

Implementation of a National Programme for Energy Saving at End Consumers.

The high energy content of the GDP opens up opportunities for the implementation of energy efficiency measures, for which support is needed in order to overcome the obstacles to the efficient use of energy resources, including RES.

Expected Results:

The use of the significant potential to enhance the energy efficiency will influence the energy market. To sum up, the development of a competitive energy market, the use of alternative sources of energy and the motivation of private capital to take part in the restructuring of the energy sector through transparent and modern regulations of the production and supply of energy are the necessary conditions for the reform process in the energy sector and for the enhanced energy efficiency of the economy towards balanced growth.

Priority No 4: Protection of the Environment

Modernization and reconstruction of the existing energy capacities and construction of new ones to comply with the environmental requirements to the operation of national and European energy systems;

Environmentally friendly storage of waste from energy activities and protection of the environment (water, soils, air).

Further to the above mentioned priorities, it is important both for Bulgaria and for the other participating countries in the Energy Community to continue the development and modernization of the national and regional energy infrastructure which includes projects of priority importance to Bulgaria, the region of SEE and the EU.

III.6 Action Plan

III.6.1 Criteria for the Selection of Priority Infrastructure Projects

In accordance with the priorities described above, the following criteria have been identified for the assessment and prioritization of the energy infrastructure projects:

The need for the implementation and the real opportunities for the implementation of the project;

Projects ensuring one or more of the following aspects:

security of energy supplies;

effective functioning of a competitive energy market (national, regional and all-European);

compliance with environmental measures;

Projects of national importance – providing economic benefits, independence or fulfillment of commitments undertaken in the EU accession negotiations;

Projects of regional and/or all-European importance – providing not only economic benefits and independence but also geopolitical advantages and leading positions to Bulgaria in the region, fitting into the European and regional infrastructure policy;

Strategic projects – meeting all criteria (1,2,3 and 4) – of national, regional and/or all-European importance, providing substantial geopolitical advantages, economic benefits and independence.

III.6.2 Priority Investment Projects

III.6.2.1 Electric Power Infrastructure

(a) At the national level:

Construction of 2000 MW of new nuclear facilities on the site of Belene NPP and of the electric power infrastructure needed for their connection to the national electric power system;

Construction of new capacities based on local lignite coal on the site of Maritsa East 1 TPP;

Rehabilitation and modernization of key electric power generation facilities like Kozlodui NPP, Maritsa East 2 TPP, Maritsa East 3 TPP, Varna TPP, Ruse District Heating Company and others in order to extend their useful life and to meet the requirements of the EU environmental legislation concerning the energy sector (mainly Directive 2001/80/EC);

Construction of Tsankov Kamuk Hydro Facility, rehabilitation of Lower Arda cascade and others, as well as efficient use of the potential in the country to build numerous power plants operating on the basis of renewable energy sources and electric power networks to be connected with a view to complying with Directive 77/2001 and attaining the indicative goal of 11% of the domestic electricity consumption to come from RES - **Appendix No III.2** outlines the big investment projects of power plants and district heating companies;

Construction, extension and modernization of the national electric transmission infrastructure needed for the effective functioning of the national electricity market and for the export of Bulgarian electricity to the region of SEE and the EU - Project Energy 2 – Rehabilitation and Modernization of the Electric Transmission System - **Appendix III.3.**

(b) At the bilateral and regional level:

Establishment of an electric power inter-system link to Macedonia at Chervena Mogila (Bulgaria) – Stip (Macedonia) as part of the electric power infrastructure of European corridor VIII, which continues with the establishment of an electric power inter-system link between Macedonia and Albania and an electric power inter-system link between Albania and Italy across the Adriatic Sea, creating opportunities for export of electricity to Italy along this route and for effective participation of the countries in the Energy Community. These projects are also part of the development of European corridor VIII which is a priority project for Bulgaria, Macedonia, Albania and Italy. The project for the inter-system link between Bulgaria and Macedonia is included in the priorities of the Trans-European Energy Networks (TEN-E - Decision No 1229/2003/EC of 26 June 2003) and it is an integral part of the infrastructure needed for the effective functioning of the Energy Community;

Establishment of a second electric power inter-system link between Bulgaria and Greece at Maritsa East (Gulubovo, Bulgaria) and Filipi or Nea Santa (Greece), which will expand the opportunities for export of electricity to both Greece and Italy via the subaquatic cable inter-system link between these two countries. The project for the inter-system link

between Bulgaria and Macedonia is included in the priorities of the Trans-European Energy Networks (TEN-E - Decision No 1229/2003/EC of 26 June 2003) and it is an integral part of the infrastructure needed for the effective functioning of the Energy Community;

Establishment of a second electric power inter-system link between Bulgaria and Serbia (Vidin-Bor) as part of the infrastructure needed for the effective functioning of the electricity market of the Energy Community.

III.6.2.2 Gas Infrastructure

As a result of the tension and uncertainty of energy supplies which emerged in connection with the gas dispute between Russia and Ukraine at the end of 2005 and the beginning of 2006, the EU increased its focus on the serious and growing dependence on the supplies of Russian natural gas and on the search for opportunities to ensure diversification of gas supplies to Europe.

In order to guarantee security through diversification of gas supplied and to prevent Bulgaria from finding itself in an unfavourable position in the negotiations with Gasprom on a new contract for supplies after 2011, it is necessary to actively work for ensuring alternative sources of gas supplies to the country, the region of SEE and the EU. Seeking alternative sources of natural gas is needed also for avoiding the excessive prices which would be an additional burden on the national economy.

For the time being, the main opportunity for diversification of gas supplies to Bulgaria is the implementation of the NABUCCO gas pipeline projects which is a priority for the EU and which would ensure the access of Bulgaria and the EU to the substantial gas resources of the Caspian region and the Middle East and reduce, for that matter, the dependence on Russian supplies of natural gas.

In case of serious delay or failure of the NABUCCO project, Bulgaria could negotiate with Turkey on the establishment of a gas inter-system link between Bulgaria and Turkey, which could be ready by 2010 for supply of natural gas from Iran and the Caspian region mainly for the national gas market and, if possible, also for the regional one. In the optimal scenario, this link could be subsequently used as Bulgaria's contribution in kind to NABUCCO. Such a link could be considered also as an option independent from NABUCCO, providing a partial alternative to the supplies of Russian natural gas by 2010. Such a gas inter-system link as part of the Turkey-Greece-Italy gas pipeline project is currently being established between Greece and Turkey and it will be operational in the beginning of 2007 (with pipe capacity of 11 bn cub m p.a.).

It is also necessary to study the opportunities for construction and the economic expediency of a regional reception (re-gasification) terminal for liquefied natural gas at the Bulgarian Black Sea coast in order to ensure the diversification and security of gas supplies to Bulgaria and the countries in the region of SEE. The construction of such a terminal could make it possible for natural gas to be supplied from the Mediterranean and the Middle East to consumers in Bulgaria and the neighbouring countries along the well developed Bulgarian gas transmission network and the available or new gas inter-system links.

It would be appropriate for Bulgaria to start exploring the opportunities for conclusion of preliminary contracts concerning the prices and the other terms and conditions for the supply of certain quantities of Caspian natural gas before the activities for the construction of the NABUCCO gas pipeline being because afterwards the prices of Caspian natural gas would most probably increase. This would help, after 2010 when the long-term contract with Gasexport expires, negotiate more favourable terms and conditions and prices with Gasprom and upon the planned launch of the operation of the NABUCCO gas pipeline in 2011 the Bulgarian economy would receive natural gas from various sources at beneficial prices.

Priority projects for the construction and extension of the national gas infrastructure for transmission, supply and distribution of natural gas, as well as of the gas infrastructure for the effective participation in the regional gas market and the common gas market of the EU

The opportunities for transit of natural gas from Russia, the Caspian region and the Middle East to all countries in SEE, Italy, Austria, Central and Western Europe determine the Bulgarian interest not only in the establishment and strengthening of the gas inter-system links with neighbouring countries but also in the construction and extension of the gas infrastructure for transmission and transit of natural gas.

(a) At the national level:

Accelerated construction and development of gas distribution networks and household gasification within the territory of the country, especially in the municipalities for which no licenses have been issued so far and which do not fall within the scope of the distinct gas distribution territories (gas distribution regions). Several main gas pipelines could be developed to Silistra, Vidin, Kurdjali, Smolyan, Lom, Svishtov, Nikopol, Karlovo-Sopot, Razlog-Bansko-Gotse Delchev, to mention just a few, as well as to all other municipalities which are not covered by the licenses issued so far;

Extension of the capacity of the gas transmission infrastructure for transit of Russian natural gas to Greece in accordance with the stated intentions of the partner countries in the supplies and the final destination, as well as use of the available gas infrastructure for gas supply to South-Western Bulgaria, which could facilitate the recoupment of the investment and promote the development of these regions.

(b) At the bilateral and regional level:

NABUCCO project – cross-border initiative to build a gas pipeline from the Caspian region, Iran and the Middle East via Turkey, Bulgaria, Romania and Hungary to Austria (Baumgarten Gas Centre) and from there to the countries in Central and Eastern Europe, the successful implementation of which will ensure the diversification of gas supplies to Bulgaria and create opportunities for linking the Caspian region and the Middle East (which, taken together, are the world's second largest region in terms of conventional deposits of natural gas) to the European gas market. At present, this linkage is hampered by the lack of infrastructure (gas pipelines and compressor stations) between the two regions. Due to its strategic importance, the project is identified as a priority in the EU Common Energy Policy and it was included in the European Commission's Programme Trans-European Networks – Energy in 2003;

Development of the Dupnitsa - Dimitrovgrad – Nis gas pipeline between Bulgaria and Serbia for the supply of Russian natural gas and subsequently with opportunities for supplies of natural gas from Iran and the Caspian region along the NABUCCO pipeline to Serbia and other countries in the Western Balkans. This is a pilot project in the process of cooperation in the gas sphere within the framework of the Energy Community and it is supported by the European Commission and the World Bank that could provide financing for its implementation;

Trans-Adriatic gas pipeline project from Bulgaria via Macedonia and Albania across the bottom of the Adriatic Sea to Italy. This project is part of the development of the energy infrastructure of European corridor VIII. A later stage could be the creation of opportunities for transit of natural gas from the Caspian region, Iran and the Middle East from the NABUCCO gas pipeline to Macedonia, Albania and Italy along the available gas transmission infrastructure on the route of European corridor VIII;

Project for construction of a regional reception (re-gasification) terminal for liquefied natural gas at the Bulgarian Black Sea coast to supply natural gas not only to Bulgaria but also to the other countries in the Energy Community along the well developed Bulgarian gas transmission network. In fact, this is a way to ensure diversification and to guarantee the security of gas supplies to Bulgaria and the region of SEE;

Project, in case of prospects for serious delay or failure of the NABUCCO project, for the establishment of a gas inter-system link between Bulgaria and Turkey, which could be ready by 2010 for supply of natural gas from Iran and the Caspian region mainly for the national gas market and, if possible, also for the regional one. In the optimal scenario, this link could be subsequently used as Bulgaria's contribution in kind to NABUCCO. Such a link could be considered also as an option independent from NABUCCO, providing a partial alternative to the supplies of Russian natural gas by 2010. Such a gas inter-system link as part of the Turkey-Greece-Italy gas pipeline project is currently being established between Greece and Turkey and it will be operational in the beginning of 2007;

Project for the construction of an inter-system link between the Bulgarian and Romanian gas transmission systems aimed at greater security and diversification of supplies.

III.6.2.3 Oil Infrastructure

Strategic projects to guarantee security through diversification of oil supplies to Bulgaria, the region of SEE, the EU and world markets

Bulgaria is interested in the implementation of both strategic projects for the Burgas–Alexandroupolis and Burgas – Macedonia – Vllora oil pipelines, since the construction of these oil pipelines or either of them would be of special importance in economic and geopolitical terms.

It should be remembered that Burgas–Alexandroupolis and Burgas – Vllora are not the only routes and that one is witnessing much greater activity in the policy of the countries offering competitive oil pipelines to the Bulgarian projects as follows:

Constanta (Romania) – Omisal (an Adriatic port of Croatia) – Trieste (an Adriatic port of Italy);

Samsun (a Black Sea port of Turkey) – Jeyhan (a Black Sea port of Turkey which is the end point of the oil pipelines Baku (Azerbaijan) – Tbilisi (Georgia) – Jeyhan and Kirkuk (Iran) – Jeyhan;
Cuicoy (a Black Sea port of Turkey) – Ibrikbaba (an Aegean port of Turkey);
Trans-Thrace project (Turkey) parallel to Cuicoy – Ibrikbaba;
The Ismir ring oil pipeline (the Asian part of Turkey);
The existing section Odessa (Ukraine) – Brodi (Ukraine) and the extension of the oil pipeline to Plotsk (Poland) and to the Polish port of Gdansk at the Baltic Sea;
The project for linking the existing Druzhba and Adria oil pipelines.

The implementation of any of the proposed projects for oil pipelines in SEE and the Black Sea region would worsen the conditions for financial viability and hence seriously delay or even impede the implementation of some of the other projects on a medium-term basis.

In this connection, it is necessary to speed up and promote the policy of advocacy and implementation of at least one of the two Bulgarian oil pipeline projects, while taking into account the opportunities and realities in the geopolitical situation lest Bulgaria remains isolated from the main oil routes for transit of Russian and Caspian oil to the European and world markets.

The analysis of the current situation makes it clear that the participation of Russian oil companies is indispensable to the provision of the necessary quantities of oil to make the construction of an oil pipeline circumventing the Bosporus economically efficient. Quite indicative in this respect is the reversal of the direction of the Odessa – Brodi old pipeline which has been completed on the Ukrainian side, which was initially intended for transit of Caspian oil to Europe in the north-south direction (Brodi – Odessa) by the Russian- British company TNK-BP.

One should also consider the fact that Russian oil companies are most interested in the construction of such an oil pipeline because they carry out the main bulk of the transit of oil and therefore they sustain the greatest losses from the restrictions on the passage and loading of the Straights. From the perspective of the guaranteed security of supplies, it would be strategically unacceptable for Turkey to control both the Straights (the Bosporus and the Dardanelles) and an oil pipeline circumventing them.

The companies drilling in Kazakhstan are not in a position, for the time being, to provide the necessary quantities of oil which could ensure the financial viability of an oil pipeline circumventing the Bosporus (Burgas–Alexandroupolis or Burgas – Vllora). These companied could supplement the capacity which will be provided primarily by the Russian side. The main routes for export from Kazakhstan are the existing oil pipelines Atarau (Kazakhstan) – Samara (Russia) and the North-Caspian oil pipeline (KTK) from the oil deposit at Tenghiz (Kazakhstan) to the Black Sea port of Novorosiisk (Russia). Kazakhstan is planned to use the Baku (Azerbaijan) – Tbilisi (Georgia) – Jeyhan oil pipeline through the establishment of a tanker fleet in the Caspian Sea (60,000 t tankers) for transport of oil from the city of Okava (a Caspian Sea port of Kazakhstan) to Baku and from there transit through the oil pipeline. The Atasa (Kazakhstan) – Alushawcow (China) oil pipeline is being

constructed at accelerated rates and China tends to become another major destination of Kazakh oil exports.

Azerbaijan and the companies drilling there will export oil mainly through the new Baku (Azerbaijan) – Tbilisi (Georgia) – Jeyhan oil pipeline, while the use of the existing oil pipelines Baku – Supsa (Georgia) and Baku – Novorosiisk (Russia) will be more limited.

The main quantities of oil crossing the Straights belong to Russian oil companies which sustain the greatest losses from the restrictions imposed by Turkey on the passage of oil tankers via the Bosporus and the Dardanelles. Besides, the "southern" Black Sea direction is the major route for the ever growing Russian export of oil to the European and global oil markets, notwithstanding the plans for other export routes.

This is confirmed also by the serious interest in the Burgas – Alexandroupolis oil pipeline mainly by the Russian- British company TNK-BP, Rosneft and Sibneft, which could provide sufficient quantities for the viability of the project. The U.S. company Shevron, which is prospecting oil deposits in Kazakhstan, is also seriously interested in the project. These facts come to show that it is perfectly feasible and realistic to expect cooperation among big Russian, British, American and other oil companies on the basis of common interests and provided that the governments support the joint construction and operation of transit oil pipelines, which should be used by the Bulgarian side.

Bulgaria will pursue a flexible policy and the two oil pipeline projects should not be bound to one another, which could create obstacles to investors.

It would be appropriate for the emerging International Project Company (IPC) established for the implementation of the Burgas – Alexandroupolis oil pipeline to involve a greater number of companies drilling mainly in Russia and Kazakhstan, which could provide sufficient quantities of oil to make the project commercially viable.

The Bulgarian side, while protecting its interests, should be prepared for reasonable concessions in order to avoid a situation in which, due to lack of flexibility in the position, the chance for an oil pipeline across the Bulgarian territory could be wasted.

Specific details about the ongoing priority infrastructure projects and programmes over the period 2005 – 2009 and those in preparation for the period 2005 – 2015 are given in **Appendices III.4, III.5 III.6** respectively. Geographical maps illustrating the infrastructure projects and initiatives in the energy sector are included in **Appendix III.7**.

III.6.3 Projects to Be Implemented through Public-Private Partnership

The attainment of the objectives to diversify the energy supplies to the country, to achieve a favourable price of energy resources for the Bulgarian economy and to protect the environment against the impact of activities in the energy sector, as well as the implementation of activities to reduce the energy intensity of the economy, to enhance the energy efficiency and to utilize the potential of renewable energy sources will build on public-private partnership initiatives, for which the following lending mechanisms have been put in place:

A credit line for energy efficiency and renewable energy sources;
A credit line for energy efficiency projects in the housing stock;
Bulgarian Energy Efficiency Fund.

The information about the projects to be implemented on the basis of public-private partnership is given in **Appendix III.8**.

III.7 Institutional Organisation of the Implementation – Responsible Structural Units – Operational Interaction Coordinates

MINISTRY OF THE ECONOMY AND ENERGY

Directorates:

Energy Strategy

Vladimir Stariradev – Director. Telephone: 02/9263 270; Fax: 02/980 12 44; E-mail: stariradev@doe.bg

Energy Markets and Restructuring

Galina Tosheva – Director. Telephone: 02/ 9263 134; Fax: 02/988 27 73; E-mail: tosheva@doe.bg

III.8 System for Monitoring and Evaluation of the Implementation

Performance Indicators	Competition in the energy sector; Reduced costs for energy services; Increased number of energy suppliers; Number of households supplied with natural gas; Share of electricity produced from RES in the gross domestic consumption; % of meeting the national energy needs; Reduction of energy losses; Degree of compliance with the requirements for the EU accession (= % of meeting the requirements of the EU norms); Degree of compliance with the environmental conventions to which the Republic of Bulgaria is a signatory; Average age of generation facilities, share of modernized and rehabilitated facilities, share of new facilities; Average residual operational life of generation facilities.

Investing in the energy sector is not a goal in itself; each of the planned and implemented projects leads to substantial economic and environmental effects, having high net present value and satisfactory rate of return in accordance with the world energy standards.

III.9 Conclusion

The implementation of all these major projects will provide the Bulgarian economy and energy enterprises in particular with competitive advantages, promoting the role of Bulgaria of an energy leader (hub) in the region and also the opportunity for full-fledged and effective participation in the EU common energy market and the emerging Euro-Mediterranean energy market as a major exporter of electricity and a transit and distribution hub for primary energy resources not only to the region of SEE but also to the EU.

IV. INVESTMENT PROJECTS IN THE FIELD OF VETERINARY MEDICAL CONTROL

IV.1 Introduction

The development of the infrastructure in Bulgaria in the field of veterinary medical control follows two major lines:

IV.1.1 Establishment of Long-Term Border Veterinary Checkpoints (BVCPs)

The geographical location of Bulgaria in the all-European space and European corridors IV and VIII crossing its territory promote the international trade exchange between the Middle East and the European continent. The specific location of the country requires the establishment of a reliable system to control and manage animal diseases. The risk of penetration of infectious diseases from the Middle East via the Turkish-Bulgarian border or via the Black Sea or western borders with Serbia and Macedonia is long-standing. Therefore it is of paramount importance to improve the physical and technical condition of the border veterinary checkpoints which will turn into an EU external border in future.

In order for the necessary guarantees to be put in place, BVCPs should be modernized to perform effective control of goods of animal origin coming from abroad. For this purpose, urgent measures are taken to set into operation BVCPs with long-term functions by the time of the EU accession.

IV.1.2 Establishment of an Animal Waste Disposal Facility – a Rendering Plant

The main methods applied in the EU with regard to the processing of animal products are laid down in EC Regulation № 1774/2002. Animal waste is classified into three categories in accordance with the provisions of the Regulation. The organisation of its treatment requires separation of the processes of collection, transportation, storage and treatment of the various types of animal waste. The Law on Veterinary Medical Activities regulates the collection, storage, transportation and treatment of byproducts of animal origin.

The Law regulates the financing and allocation of costs for the treatment of byproducts of animal origin. Costs are re-distributed among the state budget, the owners of meat producing ad meat processing plants and commercial outlets. Regulation No. 20 sets out the requirements to the activities at all stages from the collection to the disposal of animal byproducts and products thereof, as well as their use, launch on the market and transit.

The PHARE Programme provides assistance to Bulgaria in order to facilitate the process of **the preparation and adaptation of the Bulgarian veterinary sector in the context of the forthcoming integration into the EU.**

IV.2 Analysis of the Condition of the Infrastructure in the Veterinary Sector

Currently, there are 37 BVCPs for import, export and transit of animals, raw materials and products of animal origin. Eight of these checkpoints are identified as long-term ones and they will be subject to special control as external border checkpoints for the European Union. They are as follows: Bregovo and Gueshevo BVCPs at the Serbian border, Zlatarevo BVCP at the Macedonian border, Captain Andreevo BVCP at the Turkish border, Varna and Burgas BVCPs at the Black Sea border, and the BVCP at the Airport of Sofia. The establishment of six of these long-term BVCPs is partially financed with resources from the European Union within the framework of the projects "Improvement of the border veterinary control, improvement of the system of control of animals and improvement of the feeds control in Varna, Burgas and Kalotina" and "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo". Kalotina BVCP will have an inspection area for live animals.

It should be noted that the six checkpoints partially financed with EU funds have to be completed by the end of August 2006, set into operation and accredited by the competent authorities of the European Commission.

In the past, Bulgaria had 15 operational rendering plants. After the privatization of the sector in the 1990's, the number of rendering plants in operation was reduced to five and only two of them, those in Shumen and Varna, operate continuously.

IV.3 SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) of the Veterinary Sector

Strengths	**Weaknesses**
- Monitoring and control of the import, export and transit of animals, raw materials and products of animal origin, additives, feeds and feed additives, as well as the transportation vehicles used for this purpose; - Protection against animal diseases (transmissive spongiform encephalopathies, classical swine fever, etc.); - Statistics of the quantities of import, export and transit by types of animals and products; - Traceability of the animals and products of animal origin; - Standardization in local industries; - Adjustment of the animal waste treatment system to	- Insufficient administrative capacity of veterinary medical services in the country (economic knowledge and managerial skills); - Lower competitiveness of Bulgarian meat producers and meat processors compared to their European counterparts; - Difficult chances for Bulgarian meat processors to enter the European market; - Monopoly market position of the rendering plants in Shumen and Varna;

comply with the EU requirements.	- Concentration of the existing rendering plants in a single region of the country; - High costs of meat processing industries for the treatment of waste of animal origin.
Opportunities - Adaptation of the Bulgarian legislation in the field of the veterinary medical control to the *acquis communautaire;* - Opening of the European market to Bulgarian animals, raw materials and products of animal origin, additives, feeds and feed additives; - Diversification of the Bulgarian market for animals, raw materials and products of animal origin, additives, feeds and feed additives; - Improved monitoring and control of the traffic in animals, raw materials and products of animal origin, additives, feeds and feed additives, as well as the transportation vehicles used for this purpose across the future external border of the European Union; - Improved quality of foods; - Improved animal health; - Protection of Bulgaria and the whole EU against numerous diseases; - Reduced prices of meat and meat products; - Increased trade exchange of the country; - Reduced costs of meat processing industries for the treatment of waste of animal origin.	**Threats** - Increased competitive pressure on part of European meat producers and meat processors; - Problems related to the compliance with the new veterinary sanitary and hygienic requirements, which will lead to the closing down of enterprises; - Danger for public health from products of animal and veterinary origin coming from abroad; - Danger for public health from untreated waste products of animal origin.

IV.4 Conclusions

It is urgent to introduce in Bulgaria a system to control the import of products of animal origin from third countries.

There is a risk for BVCPs to be completed and set into operation later than the initially scheduled deadlines. The delay results from:

(a) The delayed start of construction works at Varna, Burgas and Kalotina BVCPs due to the need for closing down the petrol station within the territory of Kalotina BVCP;

(b) Omissions in the costing and the estimates.

There is risk for this situation to threaten Bulgaria's accession to the EU.

The construction of the rendering plant is of great economic importance. The construction and setting into operation of such an animal waste treatment facility will adjust the system of animal waste disposal to modern requirements and practices. It will enhance the competitiveness of the meat processing sector in the country and help meat producers and meat processors cope with the competition on the national and European market.[11]

IV.5 Main Objectives, Priorities and Actions

The main objective is to build the long-term BVCPs and to assist the re-organisation and regulation of the veterinary sector in Bulgaria through the introduction of European control systems. **The specific goal** is to ensure effective protection of the territory of Bulgaria and the EU Member States against the penetration of infectious animal diseases and protection of public health.

The long-term nature of the sustainability of investments builds on the harmonization of activities with the EU norms and standards and its compliance with the EU sectoral policies. The future financing of the operation of long-term BVCPs will be provided from the state budget and the fees charged for control and disinfection activities.

Actions have been undertaken to build, set into operation and accredit the six long-term BVCPs in accordance with the requirements of the Food and Veterinary Office (FVO) of the European Commission.

The main objective is to ensure the compliance of the animal waste treatment system in the country with the EU requirements. **The specific goal** is to build an animal waste treatment facility (a rendering plant).

The following actions are envisaged for the construction of a new rendering plant in Bulgaria:

1. Feasibility study for the construction and equipment of a facility for processing of animal bioproducts which are unfit for human consumption;

[11] According to the existing price list of the rendering plant in Shumen, meat processors/meat producers from the region of Shumen have to pay EUR 98 per ton for the disposal of animal waste of Category 3 and EUR 143 per ton of animal waste of Category 1. Businesses from the region of Vidin /North-West Bulgaria) or Kyustendil (Central Western Bulgaria) have to pay EUR 179 per ton for the disposal of animal waste of Category 3 and EUR 220 per ton of animal waste of Category 1. The prices for the collection and disposal of animal waste in the EU range from EUR 45 to EUR 120 per ton, or EUR 60 per ton on the average. In this sense, the setting into operation of a new rendering plant will destroy the dominant market position of the two e xisting rendering plants and this will produce direct effect on meat prices.

2. Identification of the provisional capacity and selection of possible technical solutions;
3. Construction of a new rendering plant with one line for the treatment of material of Category 1, one line for the treatment of material of Category 2 and two lines for the treatment of material of Category 3;
4. Construction of an interim treatment facility for the purposes of the establishment of a new collection system and the purchase of specialised vehicles for the transportation of animal parts and carcasses to the new collection system. The treatment facility will be established in the regions around Veliko Turnovo or Stara Zagora, and the interim treatment facility will be located around Sofia. Sites have been identified within the territory of the municipality of Ugurchin, the municipality of Misia, the village of Pamidovo, and the municipality of Lesichevo, Pazardjik region. The municipality of Yambol, too, has expressed its preparedness to offer a site for the construction of a rendering plant.
5. Economic and technological analyses, environmental impact assessment and preparation of the tendering documentation;
6. Construction and equipment of the rendering plant.

IV.6 Action Plan

IV.6.1 Criteria for the Selection of Priority Infrastructure Projects in the Veterinary Sector

Project sustainability in accordance with the EU norms;

Establishment of BVCPs with special control and improved quality of the standards applied to control activities;

Compliance of the projects with the requirements of the Law on Veterinary Activities with regard to the storage, transportation and disposal of byproducts of animal origin, and to the distribution of responsibilities for the waste treatment among the state, meat processing enterprises and the owners of animals;

Effective enforcement of Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption.

IV.6.2 Priority Investment Projects of National Importance – Indicative Values and Sources of Financing, including Investment Plans for the Period 2005 – 2009 by Sources of Financing

Table 22

Project	Initial Budget (EUR mn)		Budget after Transfer of Resources (EUR mn)		Agreed Value (EUR mn)		Amounts Disbursed as of 14 April 2006 (EUR mn)	
	PHARE	Co-financing	PHARE	Co-financing	PHARE	Co-financing	PHARE	Co-financing
BG0201.04 * Varna, Burgas and Kalotina BVCPs	**2,500**	**0,850**	**2,774**	**2,220**	**2,772**	**2,219**	**0,717**	**0,470**
BG2003/004 - 937.03.01 Bregovo, Gueshevo and Zlatarevo BVCPs**	**2,475**	**0,825**	**3,675**	**1,230**	**3,001**	**1,006**	**0,448**	**0,151**
BG2005/017-353.11.01 Rendering Plant	**15,407**	**4,904**	**15,407**	**4,904**	**0,000**	**0,000**	**0,000**	**0,000**
Feasibility Study	0,695	0,000	0,695	0,000	0,000	0,000	0,000	0,000
Construction works, construction supervision and deliveries	14,712	4,904	14,712	4,904	0,000	0,000	0,000	0,000

The implementation of investment projects of national importance (for the periods **2005-2009** and **2005-2015** respectively); including ongoing projects, with the respective deadlines, indicative values and sources of financing is described in **Appendices IV.1** and **I.2.**

IV.6.3 Time Schedule and Deadlines for the Implementation of Investment Projects

Projects over the Period 2005 – 2009

Project "Improvement of the border veterinary control and improvement of the system of control of animals in Varna, Burgas and Kalotina"

Total indicative value of the project: EUR 6,367 thousand, with financial assistance from the PHARE Programme and the state budget.

Agreed deadline: 16 July 2006. Revised deadline for the buildings of Varna and Burgas BVCPs: **30 September 2006** and for the live animal control building at Kalotina: **by the end of 2006.**

Project "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo"

Total indicative value of the project: EUR 4,006 thousand, financed from the PHARE Programme and the state budget.

Deadline for setting into operation of Bregovo, Gueshevo and Zlatarevo BVCPs: **30 September 2006**.

Project for feasibility study for the construction and equipment of facilities for disposal of waste of animal origin unfit for human consumption

"Construction and equipment of facilities for disposal of waste of animal origin unfit for human consumption"

Total indicative value of the project: EUR 20,727 thousand to be financed from the PHARE Programme and the state budget.

The construction works and the delivery of equipment for the rendering plant will start in the second half of 2007. The indicative deadline for setting it into operation is **the second half of 2008.**

IV.6.4 Projects to Be Implemented through Public-Private Partnership (Concession) – Indicative Value, Deadlines

Rakov Dol Dam

The total indicative value of the project is EUR 84,000 thousand.

Rakov Dol dam is located on the river Fakiiska within the territory of the municipalities of Sozopol and Sredets, Burgas Region. Some exploration, design and construction works were carried out during the period 1980 – 2000 as part of Mandra irrigation system, Burgas Region.

10 % of the construction works have been completed.

The following actions have been undertaken to start the concession procedure:

Cadastral mapping of the area on which the concession for the dam is to be granted, evaluation of the construction in progress, the adjacent infrastructure and the accessories;

Updating of the engineering hydrological survey;

Commercial water analysis for the purposes of updating the data and main parameters of the dam.

Appendix IV.3 presents the project for the construction of Rakov Dol dam on the basis of concession over the period 2006 – 2015.

The Programme for the development and maintenance of systems for protection against harmful impact in water outside communities and water supply facilities for irrigation purposes constructed with state budget resources and managed by irrigation associations is in the process of preparation.

The Programme includes:

(a) Updated assessment of the condition of the facilities for protection of water against harmful impact – river bed corrections, protective dykes, dam walls and equipment;

(b) Investment programme for recovery of the functionality of the facilities under the priority projects, sources of financing and implementation schedule;

(c) Programme for repair and rehabilitation of the supply network and irrigation system and opportunities for construction of new dams for irrigation purposes;

(d) Concession programme for specific facilities of dams for general purposes in need of significant amount of investment.

IV.7 Institutional Organisation of the Implementation – Responsible Structural Units – Operational Interaction Coordinates

The beneficiary of the projects is the National Veterinary Medical Service at the Ministry of Agriculture and Forests.

Bulgaria, 1606 Sofia
15A, Pencho Slaveikov Blvd.
Telephone: (02)/ 915-98-20
Fax: (02)/ 954-95-93
E-mail: j.baichev@nvms.government.bg
Director General – Associate Professor Jeko Baichev

The contracting authority for the projects is the Central Financing and Contracting Unit Directorate at the Ministry of Finance

Bulgaria, 1040 Sofia
102, Rakovski St.
E-mail: cfcu@minfin.bg
Project manager – Ms Galia Mikhailova

The project implementation, coordination and monitoring unit is the PHARE programme Implementation Department at the Ministry of Agriculture and Forests.

Bulgaria, 1040 Sofia
55, Hristo Botev Blvd.
Telephone: (02)/ 981-61-63
Fax: (02)/ 981-75-42
E-mail: demina@phare-agr.orbitel.bg
Head of department – Demina Bairaktarska

The contractor for all the three construction lots of Project BG0201.04 “Improvement of the border veterinary control, improvement of the system of control of animals and

improvement of the feeds control in Varna, Burgas and Kalotina" is the Bulgarian company **AT Engineering 2000 OOD.** The details of the contractor are as follows:

Bulgaria, 1303 Sofia
37, Positano St.
Telephone: (02)/ 939 08 88
Fax: (02)/ 93908 87
E-mail: penev@ati2000.com
Manager of the company – Mr. Georgi Penev

The construction supervision under Project BG0201.04 "Improvement of the border veterinary control, improvement of the system of control of animals and improvement of the feeds control in Varna, Burgas and Kalotina" is **EQE Control OOD**. The details of the company performing the construction supervision are as follows:

Bulgaria, 1164 Sofia
24, Krum Popov St.
Telephone: (02)/ 865 00 39
Fax: (02)/ 865 00 39
E-mail: aks@eqe.bg
Manager of EQE Control OOD – Ms Adriana Spassova

The contractor of Lot 1 – Bregovo BVCP under Project BG2003/004 - 937.03.01 "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo" is **Roads Holding Company AD**. The details of the contractor are as follows:

Bulgaria, 1040 Sofia
193A, Rakovski St.
Executive Director - Ms Dessislava Lyubenova

The contractor of Lot 2 – Gueshevo BVCP under Project BG2003/004 - 937.03.01 "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo" is **Glavbolgarstroi AD.** The details of the contractor are as follows:

Bulgaria, 1619 Sofia
3-5, Damyanitsa St.
Telephone: (02)/ 91 51 856
Fax: (02)/ 91 51 808
E-mail: hkisev@gbs-bg.com
Head of Big Projects Division – Mr. Hristo Kisev

The contractor of Lot 4 – Zlatarevo BVCP under Project BG2003/004 - 937.03.01 "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo" is **Galchev Engineering Group AD.** The details of the contractor are as follows:

Bulgaria, Blagoevgrad
1, Polkovnik Dimov St.

E-mail: n.galchev@galchevgroup.com
Executive Director of Galchev Engineering Group AD – Mr. Nikolai Galchev

The construction supervision under Project BG2003/004 - 937.03.01 "Establishment of border veterinary checkpoints in Bregovo, Gueshevo and Zlatarevo" is **Consortium Aqua Consult Engineering OOD and BT-Engineering EOOD**. The details of the lead company in the consortium performing the construction supervision are as follows:

Bulgaria, 1505 Sofia
1, Tsarichina St.
E-mail: BVCP@dir.bg
Manager of BT-Engineering EOOD – Mr. Botyo Tabakov

IV.8 System for Monitoring and Evaluation of the Implementation – Indicators for Current and Periodic Performance Analysis and Updating

Projects are monitored through monthly meetings to report the progress of the project, Sectoral Monitoring Sub-committees and Joint Monitoring Committees.

A working group has been established by the Ministry of Finance to resolve the financial and technical problems at Varna, Burgas, Kalotina, Bregovo, Gueshevo and Zlatarevo BVCPs. The working group exercises ex-ante control and performs evaluation of the activities to be carried out through assignment of additional contracts for basic construction works.

IV.9 Conclusion

The projects indicated in this sectoral strategy are aimed at assisting the process of preparation of the Republic of Bulgaria for accession to the EU by speeding up the construction of major infrastructure facilities needed for the performance of border veterinary control and ensuring compliance of the system for treatment of byproducts of animal origin with the requirements of the *acquis communautaire.* This is the way to guarantee the protection of public health and the improved quality of life of Bulgarian citizens.

NATIONAL STRATEGY FOR INTEGRATED DEVELOPMENT OF THE INFRASTRUCTURE OF THE REPUBLIC OF BULGARIA AND ACTION PLAN FOR THE PERIOD 2006 - 2015