



BACKGROUND NOTE

Delegation to Bulgaria in the context of decommissioning of nuclear power plant

CONT Delegation to Bulgaria

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1. BACKGROUND INFORMATION ON BULGARIA

1.1. Basic Data

Map 1: Map of Bulgaria



Source: <http://www.ecoi.net/bulgaria/maps>

Bulgaria occupies the south-eastern part of the Balkan Peninsula. To the north, the Danube forms much of its frontier with Romania, to the west it has a mountainous border with Serbia and FYROM¹ and to the south its neighbours are Greece and Turkey. Eastwards, its beaches open on the Black Sea.

¹ The Former Yugoslav Republic of Macedonia

Table 1: Key statistical data

Total land area	110 910 km ²
Population	7.3 million (1 January 2013)
Capital	Sofia
Main cities (population)	Sofia (1.3 million) Varna (343,544) Plovdiv (339,077) Burgas (211,390) Ruse (165,882) Stara Zagora (159,537) Pleven (128,343)
Official language	Bulgarian (Indo-European language with Cyrillic alphabet, member of the Southern branch of the Slavic language family)
Ethnic groups	76.9 % Bulgarians, 8 % Turks, 4.4 % Roma, 0.1 % Russians, 0.1 % Armenians
Religion	59.4 % Orthodox, 9.3 % Atheism, 7.8 % Islam, 0.9 % Protestant
Currency	Lev (BGN) = 100 stotinki
GDP per capita (PPS)	47 % (2012)
Growth rate	0.8 % (2012)
Unemployment rate	12.6 % (June 2013)
Inflation rate	2.4 % (2012)
Time	GMT+2

Source: Eurostat and Europa World Plus

1.2. Political Structure Overview

Table 2: Political structure in Bulgaria

Official name	Republic of Bulgaria
Form of state	Parliamentary democracy
Legal system	Based on the constitution adopted in 1991 (amended four times)
National legislature	National Assembly (the Bulgarian Parliament). It consists of 240 members elected through a closed-list proportional representation to serve four-year term
Electoral system	Universal suffrage over the age of 18 years

National elections	In February 2013, following violent protests against economic hardship and rising electricity prices, and a series of self-immolation throughout the country, BORISOV cabinet announced his resignation. Early legislative elections were held in May 2013
Head of State	President Rosen PLEVNELIEV (the fourth democratically elected President of Bulgaria) since January 2012
National government	The current government was appointed in May 2013, with a relative majority of the centre-right party (GERB 30.6 %). Former Prime Minister BORISOV (GERB) failed to form a government and a new coalition administration (KB), under the premiership of ORESHARSKI (BSP), was established.
Head of Government	Prime Minister Plamen ORESHARSKI (BSP) since May 2013
Main political parties	<p>GERB - Citizens for European Development of Bulgaria</p> <p>KB - Coalition for Bulgaria (formed by four parties):</p> <p>BSP - Bulgarian Socialist Party</p> <p>PBS - Party of Bulgarian Social-Democrats</p> <p>ZS-AS - Agrarian Union "Aleksandar Stamboliyski"</p> <p>DSH - Movement for Social Humanism</p> <p>DPS - Movement for Rights and Freedoms</p> <p>ATAKA - Attack</p>
National Assembly	GERB - 97 Members, KB - 84 Members, DPS - 36 Members, ATAKA - 23 Members
National Assembly Speaker	Mihail MIKOV (BSP) (since May 2013)
Key ministers	<p>Agriculture and Food - Dimitar GREKOV</p> <p>Culture - Peter STOYANOVICH</p> <p>Defence - Angel NAYDENOV</p> <p>Economic Development - Daniela BOBEVA</p> <p>Economy and Energy - Dragomir STOYNEV</p> <p>Education and Science - Aneliya KLISAROVA</p> <p>Environment and Water - Iskra DIMITROVA MIHAYLOVA-KOPAROVA</p> <p>Finance - Petar CHOBANOV</p> <p>Foreign Affairs - Kristian VIGENIN</p> <p>Health - Tanya LYUBOMIROVA ANDREEVA-RAYNOVA</p> <p>Interior - Tsvetlin YOVCHEV</p> <p>Investment Planning - Ivan DANOV</p> <p>Justice - Zinaida ZLATANOVA</p> <p>Labour and Social Policy - Hasan ADEMOV</p> <p>Regional Development - Desislava TERZIEVA</p> <p>Transport, IT and Communications - Danail PAPAZOV</p> <p>Youth and Sports - Mariana VASILEVA GEORGIEVA</p>
Administrative division	28 provinces ("oblasti") and 262 municipalities (administrative units)

with local self-government, "obshtini")

Source: Europa World Plus <http://www.europaworld.com/entry/bg>

Since the new government was formed in May 2013, there have been **anti-government protests** going on for 84 days, demanding resignation of the BSP (Bulgarian Socialist Party). On 4 September 2013, after the summer recess, the National Assembly resumed and so did the anti- and pro-government protests². According to a Gallop poll taken in August, 40 % of respondents said the government should resign, 30 % said they might join the anti-government protest and 8 % said they already had³.

1.3. Economy Overview

Bulgaria has come a long way from its turbulent political and economic transition in the 1990s to becoming an EU member in 2007.

In the decade preceding the EU accession, Bulgaria embraced difficult reforms to build macroeconomic stability and stimulate growth. It **reduced public debt from over 70 % of GDP in 2000 to 16.3 % in 2012**. In the same period per capita income as a share of the EU average increased from 28% to 44 %.⁴

In terms of GDP per capita Bulgaria is the poorest EU member state. Persistent problems such as organised crime, corruption and ineffective judiciary prevent accession to the EU's Schengen free-movement area⁵.

Table 3: Economic indicators for Bulgaria, 2007-2013

ECONOMIC KEY INDICATORS	2007	2008	2009	2010	2011	2012	2013
Real GDP Growth (%)	6.4	6.2	-5.5	0.4	1.8	0.8	0.9 ^f
Unemployment (av,%)	6.9	5.6	6.8	10.3	11.3	12.3	12.6*
Inflation (%)	7.6	12	2.5	3	3.4	2.4	2 ^f
Current account balance (% of GDP)	-27.2	-22.9	-8.8	-1.7	0.3	-1.5	-2.6

² The Sofia Globe <http://sofiaglobe.com/2013/09/04/several-thousand-protest-in-sofia-as-bulgarias-parliament-resumes/>

³ Oxford Analytica <https://www.oxan.com/oxweb/CountryData.aspx?country=Bulgaria>

⁴ World Bank <http://www.worldbank.org/en/country/bulgaria/overview>

⁵ IHS Global Insight

<http://myinsight.ihsglobalinsight.com/servlet/cats?filterID=1122&serviceID=4078&typeID=60004&pageContent=report&pageType=ALL>

Fiscal balance (% of GDP)	1.2	1.7	-4.3	-3.1	-2	-0.8	1.3 ^f
Public debt (% of GDP)	21.6	17.2	13.7	14.6	16.2	16.3	18.5
Export of goods and services (% change)	12.2	12.7	-19.5	20.9	23.7	3.2	5.2 ^f
Imports of Goods and Services (% change)	16.8	14.5	-29.4	8.6	19.8	8.9	7.3

f = forecast * June 2013

Source: Eurostat

Agriculture products	Wheat, maize, sunflower seed, barley, potatoes, tomatoes, grapes
Industry	Beer, wine, wheat flour, woven cotton and woollen fabrics, footwear, cement, electric energy, crude steel, lathes, fork-lift trucks
Mining	Lignite, gold, salt, kaolin, natural gas, bentonite, gypsum and anhydrite
Main export products	Petroleum products, metals, raw materials for the food industry, clothing and footwear
Main export partners	Germany, Turkey, Italy, Romania, Greece
Main import products	Mineral fuels, crude petroleum and natural gas, spare parts and equipment, machines, textiles, ores, food, beverages, tobacco
Main import partners	Russia, Germany, China, Italy, Greece, Romania, Turkey

Source: Europa World Plus <http://www.europaworld.com/entry/bg>

The rapid **industrialization of Bulgaria since World War II** and the economic transition it underwent with the demise of the communist regime had a profound effect on Bulgarian society. Liberalization of price controls in the early 1990s led to a marked rise in prices. As a result, inflation rose and strikes became more frequent. The growing pains of the private sector and the strict financial discipline, required to ease the heavy foreign debt, resulted in periods of high unemployment and decreased social services. The Bulgarian government pursued economic stability with the assistance of international financial institutions. With the introduction of the currency board in 1997 and other reforms, inflation was strongly reduced by the end of the decade⁶.

Crime and corruption, and demographic decline remain serious problems. Among EU member states, Bulgaria is currently second (after Estonia) in terms of the percentage of its population leaving the

⁶ Britannica <http://www.britannica.com/EBchecked/topic/84090/Bulgaria/>

country. Despite these problems, however, the democratic process has survived, the media are unrestricted and individual liberties are, by and large, respected⁷.

Since the economic crisis broke in 2009 there has been a **30 % fall in investment**. The country ranks 66th out of 185 economies in the World Bank's 2013 "Doing Business" survey.

The Bulgarian **labour market** is suffering from structural challenges with regional and skills mismatches among the highest in the EU. As a result, Bulgaria's employment rate continues to drop, and **unemployment has doubled since 2008**⁸. In response to the economic downturn, companies opted for shedding labour rather than reducing wages. This caused one of the largest drops in employment in the EU⁹.

Bulgarian citizens are at the highest risk of **poverty or social exclusion** in the EU (49.1 % in 2011, almost twice the EU average). Social assistance schemes are ineffective in supporting the inclusion of those further from the labour market.¹⁰

The **country's external position** remains highly negative, although recent developments go in the right direction. Expectations of future economic growth and current account development suggest a gradual improvement of its net international investment position¹¹.

Agriculture

Agriculture accounts for about **6 % of the GDP**.

Land for agricultural purposes in 2010 was around 50 % of the territory of Bulgaria. The most commonly grown agricultural products are: wheat, corn, barley, rye, oats, soybeans and a good quality Oriental type of tobacco. Bulgaria is also a leading exporter of grapes and tomatoes. There is stock breeding of cattle, sheep, pigs and poultry.

In 1990 the government lifted restrictions on private farming, and almost all agricultural land was restored thereafter to private ownership while loans for the establishment of small farms and food-processing facilities were made available.

A mere 1.5 % of all farms use 82 % of agricultural land¹².

Industry

Industry accounts for over **30 % of the GDP**.

Under the socialist system industrialisation became one of the principal aims of economic policy. Particular emphasis was put on basic industries such as electric power, metallurgy and chemicals. Since

⁷ Europa World Plus <http://www.europaworld.com/entry/bg.hi>

⁸ European Commission http://ec.europa.eu/europe2020/europe-2020-in-your-country/bulgaria/country-specific-recommendations/index_en.htm

⁹ Commission Staff Working Document "Assessment of the 2013 national reform programme and convergence programme for Bulgaria" COM(2013)352 final

¹⁰ Commission Staff Working Document "Assessment of the 2013 national reform programme and convergence programme for Bulgaria" COM(2013)352 final

¹¹ Commission Staff Working Document "In-depth review of Bulgaria" SWD(2013)114 final of 10.4.2013

¹² Institute for Market Economies <http://ime.bg/en/articles/review-of-bulgarian-agriculture-in-2012/>

the 1960s food, beverage, tobacco processing and textile industries gained importance. Other main industries are fishing, fish breeding as well as wine production, which became an important export item.

Services

Services sector accounts for approximately **63 % of the GDP** and employs over 50 % of the active workforce.

Bulgaria's services sector is mainly comprised of financial services and tourism¹³.

¹³ Britannica <http://www.britannica.com/EBchecked/topic/84090/Bulgaria/>

2. EU FUNDS

2.1. Cohesion Policy 2007-2013

The Cohesion Policy programmes co-funded by the EU budget help to transform regional and national economies through investment in infrastructure, business development, training, innovation and the environment.

Bulgaria joined the EU on 1 January 2007. Consequently, it is its first round of participation in Structural Funds programming. Between 2007 and 2013, the entire country (all six regions) falls under the Convergence objective.

For the 2007-2013 period, Bulgaria has been allocated EUR 6.9 billion. This financing is provided via three funds:

- **European Social Fund (ESF)** - training especially for disadvantaged groups in society and the unemployed, development of education and training systems
- **European Regional Development Fund (ERDF)** - infrastructure projects, environment investment, urban renewal, local economic development and cross-border and inter-regional cooperation; it finances the **European Territorial Cooperation** objective
- **Cohesion Fund (CF)** - a separate instrument with special rules for financing transport and environmental infrastructure¹⁴.

Table 4: Financial allocation per Objective and fund

Objective	Fund	EU Allocation* (EUR billion)
Convergence	CF	2.3
	ERDF	3.2
	ESF	1.2
Total Convergence		6.7
European Territorial Cooperation	ERDF	0.2
Total		6.9

* Figures have been rounded up

Source: European Commission - DG Regio - Cohesion Policy 2007-2013

¹⁴ European Commission, "The control system for cohesion policy", 2009, p.3

Table 5: Financial allocation per Operational Programme (OP)

OPERATIONAL PROGRAMME	FUND	EU Allocation* Million EUR
Administrative Capacity	ESF	154
Competitiveness	ERDF	988
Environment	ERDF, CF	1 466
Human Resources Development	ESF	1 032
Regional Development	ERDF	1 361
Transport	ERDF, CF	1 624
Technical Assistance	ERDF	48
Total		6 674

Source: "Summary: Management of EU funds in the Republic of Bulgaria. Progress and effects", p. 18

Table 6: OP implementation as of 31 July 2013

OPERATIONAL PROGRAMMES	CONTRACTED*	PAYMENTS*	PAYMENTS RECEIVED FROM THE EC*
Administrative Capacity	81 %	48 %	44 %
Competitiveness	84 %	50 %	53 %
Environment	152 %	27 %	22 %
Human Resources Development	96 %	47 %	43 %
Regional Development	97 %	45 %	42 %
Transport	99 %	49 %	52 %
Technical Assistance	96 %	41 %	37 %
TOTAL	107 %	43 %	42 %

*Numbers have been rounded up

Source: EU Structural Funds <http://www.eufunds.bg/en/>

During the crisis the EU funds have become a key driver for public and private sector development and the main source of investments from the public sector in Bulgaria.

A reassignment of funds within the programmes was undertaken in 2011. This reallocation was caused by higher interest on the part of the beneficiaries in some measures, potential losses of funds (slow absorption), desire to implement new priority sectoral policies and reforms, and the need to respond to the emerging social and economic needs.

The absorption of EU funds in Bulgaria increased from 50 % in June 2011 to 84 % in August 2012.

The most notable achievements of the OPs in Bulgaria encompass large transport projects, waste management treatment stations, renovation/building of schools and hospitals, a 37.3 % increase of the

production capacity in the supported enterprises, creation of new jobs, introduction of new technologies or products by 130 supported SMEs and induced investment in the amount of EUR 125.5 million¹⁵.

2.2. Cohesion Policy Priorities

Bulgaria implements seven operational programmes (OPs): "Administrative Capacity", "Competitiveness", "Environment", "Human Resources Development", "Regional Development", "Transport" and "Technical Assistance".

The main priorities of the Cohesion policy in Bulgaria for 2007-2013 period are:

- **improvement of transport infrastructure and accessibility** - nearly EUR 2 billion - priority projects aim to construct 248km of motorways and upgrade 2100 km of roads and 780 km of railways
- **investment in research and innovation** - EUR 850 million - projects forging links between research organisations and industry ultimately creating some 300 research jobs
- **business support** - EUR 320 million - financial engineering instruments combining grants and loans to support at least 1100 projects
- **modern broadband networks and e-services** for business and citizens - EUR 67 million
- **employment measures** (including skills and training) - EUR 370 million
- **support for environmental, risk prevention and energy projects** - EUR 2.8 billion - to help comply with EU environmental rules and address the challenges of climate change.

2.2.1. Roma integration

The European Social Fund (ESF) in Bulgaria aims at supporting education and training, strengthening public administration and reducing poverty. The funds are directed i.a. to vulnerable groups like Roma, where the **share of early school leavers reaches 43%**. The group is also characterised by weak employment prospects and high poverty levels. With **10 to 12 million** individuals, the Roma community makes up Europe's biggest ethnic minority¹⁶. They form around **10% of the Bulgarian population**¹⁷.

Bulgaria has set-up an inter-ministerial working group dedicated to mobilising EU funds for Roma integration. Its aim is to propose instruments and schemes, and verify the measures planned under each operational programme¹⁸.

Project "Making school more attractive for young people" implemented under the Human Resources Development OP aimed at reducing the number of school leavers by improving employment opportunities and helping social integration among the young. The schools aim to become an attractive territory where students discover and express themselves, develop their talents and build a sense of belonging to a community. The project proved very popular and successful and is to be implemented until 2014. The expected number of young people across Bulgaria participating is estimated at 300 000.

ESF contribution: EUR 57 058 604 (85%)

¹⁵ Expert evaluation network delivering policy analysis on the performance of Cohesion policy 2007-2013, Year 2 - 2012, Task 2: Country Report on Achievements of Cohesion Policy, Bulgaria

¹⁶ European Commission - The European Social Fund: Giving Young People a Better Start in Life, December 2011

¹⁷ European Commission - MEMO/13/610 of 26/06/2013

¹⁸ European Commission - The European Union and Roma - Country Factsheet - Bulgaria

Total budget: EUR 67 127 769¹⁹

2.2.2. Danube Bridge 2

The Danube Bridge 2 is the longest bridge (**1791m**) over the Danube River between Bulgaria and Romania. It is the second bridge along the nearly 500 km river border between these two countries. It was **inaugurated on 14 June 2013**. It marks a major advance for transport and trade²⁰. It connects the towns of Vidin (Bulgaria) and Calafat (Romania).

Building of the bridge constitutes a part of the EU strategy for the Danube region.

EU funds (since 2011): EUR 106 million²¹

Total budget: EUR 282 million

2.3. Management and control of EU Funds

Main bodies responsible for implementation of the OPs in Bulgaria:

Managing Authority (MA) - Central Coordination Unit under Council of Ministers - Management is organised for each OP at a ministry responsible for the reliable implementation of programmes (e.g. Ministry of Labour and Social Policy, Ministry of Regional Development etc.). It delegates functions and tasks to the **Implementing Authorities (IA)** in regions (6 IAs in each of 6 regions). The MA is the first level of control and has the key responsibility for making sure that the programmes are effectively and correctly implemented.

Certifying Authority (CA) located at the Ministry of Finance (National Fund Directorate) - receives and verifies statements of expenditure received from the MA, submitting the certified expenditure to the European Commission to reimburse the payments. It also takes account of the available Audit Authority reports on the functioning of the control systems. It may also carry out additional checks itself or ask others to do so.

Audit Authority (AA) - "Audit of EU Funds" Executive Agency at the Ministry of Finance - performs audits to check the effective functioning of the OP management and control systems by the MA and the CA. It performs audits of operations on a sample check basis. The AA has a key function in building up assurance in the system. At the end of the implementation of the programme, the AA is responsible for the closure declaration and report to the European Commission.

Monitoring Committee is a supreme body monitoring the implementation of the programmes. It is chaired by the Head of the MA and is summoned at least twice a year. The members include ministries, agencies, other state institutions, associations of municipalities, regional development councils and social-economic partners related to interventions and activities financed by the programme²².

¹⁹ European Commission <http://ec.europa.eu/esf/main.jsp?catId=46&langId=pl&projectId=303>

²⁰ Danube Bridge 2 <http://www.danubebridge2.com/140613eng.php>

²¹ European Commission http://ec.europa.eu/commission_2010-2014/hahn/headlines/news/2012/10/24/index_en.cfm

²² Operational Programme "Regional Development" <http://www.bgregio.eu/en/op-regional-development/management-structure.aspx>

European Commission (EC) supervises the proper set-up and operation of the control systems in the Member States at EU level. It carries out audits on Member States to gain assurance that the systems are working effectively. It provides formal guidance to establish benchmarks and spread good practices.

European Court of Auditors (ECA) once a year delivers a "Statement of Assurance" on the legality and regularity of EU revenue and expenditure. The Court audits a representative sample of 180 projects in the Member States and also examines the effectiveness of the control systems in place and the Commission's supervisory work.

2.4. Challenges

The main challenges hindering the absorption of EU funds and the impact of the Cohesion policy in Bulgaria are:

- improvement of the process of verification of spent funds and the speeding up of reimbursements to beneficiaries
- lack of or insufficient co-financing by the beneficiaries
- high administrative burden of overly formal procedures
- lack of clear prioritisation of certain sectors and regions
- insufficient cooperation with the beneficiaries, aimed at increasing their capacity
- high complexity and long completion time of large infrastructure projects
- insufficiently detailed overall assessment of the achievements and impact of the OPs²³

2.5. European Investment Bank (EIB)

The EIB is the long-term lending bank of the European Union. Its main task is to contribute towards the integration, balanced development and economic and social cohesion of the EU Member States. Besides supporting projects in the EU Member States, its lending activities also include financing investments in future Member States of the EU and EU partner countries.

The EIB raises substantial volumes of funds on the capital markets, which it lends on favourable terms to projects furthering EU policy objectives. It is the largest supranational borrower and its consistent AAA rating is underpinned by firm shareholder support, a strong capital base, excellent asset quality, conservative risk management and a sound funding strategy.²⁴

The EIB invested EUR 183 million in the Bulgarian economy in 2012, of which 42 % was focused on SMEs and midcap businesses.

From 2008 to 2012 the lending amounted to EUR 1.1 billion to finance investment projects fostering economic development. 60 % of this was used to extend credit lines to smaller businesses. Transport and telecommunications infrastructure and manufacturing industry shared most of the remaining lending²⁵.

²³ Expert evaluation network delivering policy analysis on the performance of Cohesion policy 2007-2013, Year 2 - 2012, Task 2: Country Report on Achievements of Cohesion Policy, Bulgaria

²⁴ EIB Press Release BEI/11/150 of 14 October 2011 found on http://europa.eu/rapid/press-release_BEI-11-150_en.htm

²⁵ European Investment Bank <http://www.eib.org/projects/regions/european-union/bulgaria/index.htm>

3. NUCLEAR POWER PLANTS

3.1. Decommissioning Nuclear Facilities

All power plants have a life span of about **30 years**, newer plants are designed for a 40 to 60 year operating life.

At the end of the life span of any power plant, it needs to be **decommissioned, decontaminated and demolished** so that the site is made available for other uses. For **nuclear plants**, the term decommissioning includes all the **progressive dismantling of the plant and all clean-up of radioactive contamination**.

The International Atomic Energy Agency (IAEA) has defined **3 options** for decommissioning, the definitions of which have been internationally adopted:

Immediate Dismantling	Allows for the facility to be removed from regulatory control relatively soon after shutdown or termination of regulated activities. The final dismantling or decontamination activities begin within a few months or years, depending on the facility. Following removal from regulatory control, the site is then available for re-use .
Safe Enclosure	Postpones the final removal of controls for a longer period, usually in the order of 40 to 60 years. The facility is placed into a safe storage configuration until the eventual dismantling and decontamination activities occur.
Entombment	Entails placing the facility into a condition that will allow the remaining on-site radioactive material to remain on-site without the requirement of ever removing it totally. This option usually involves reducing the size of the area where the radioactive material is located and then encasing the facility in a long-lived structure such as concrete, that will last for a period of time to ensure the remaining radioactivity is no longer of concern.

Source: <http://www.world-nuclear.org/info/inf19.html>

3.2. Kozloduy Nuclear Power Plant (NPP)

Kozloduy NPP is the only nuclear power plant in Bulgaria and the main electricity producer in the country.

The facility site is located 200 km northeast of Sofia and 5km east of Kozloduy town at the Danube River. The Plant is a public limited company with 100 % public ownership and it employs over 4,200 people. Since 1974, it has generated over 263 billion kWh electric power.

The **Kozloduy NPP has six power generation units**. The plant site was built to Soviet standards and its units 1-4 did not reach acceptable safety limits. The deficiencies concerned the original design of the reactors and the limited function of their confinement systems.

Units 1 and 2 have been shut down in 2002 following a governmental decision. They were declared facilities for radioactive waste management. There is no nuclear fuel remaining at the site of these two units.

Units 3 and 4 have been closed in 2006 following an agreement with the European Commission with regard to the accession to the EU. The fuel of both units is removed from the core and is stored on the lower shelf near the reactor.²⁶

Units 5 and 6 are currently in use. Their operation licences expire in 2017 and 2019 respectively.

Table 7: Kozloduy NPP structure

NUCLEAR FACILITY	NUCLEAR FACILITY TYPE	NET CAPACITY	FIRST GRID CONNECTION	STATUS
Unit 1	VVER-440/V230	408	1974	Shutdown (2002)
Unit 2	VVER -440/V230	408	1975	Shutdown (2002)
Unit 3	VVER -440/V230	408	1980	Shutdown (2006)
Unit 4	VVER -440/V230	408	1982	Shutdown (2006)
Unit 5	VVER -1000/V230	953	1988	Operational
Unit 6	VVER -1000/V230	953	1993	Operational

Source: IAEA

For their last 15 years of their operation Units 1-4 underwent upgrading in order to meet world standards in the nuclear industry. Within the period 1991-2002 the modernisation costs amounted to USD 245 million for those four units. By 2005 a number of additional improvements amounting to USD 80 million were implemented in Units 3 and 4.²⁷

In 2002 the International Atomic Energy Agency (IAEA) and the World Association of Nuclear Operators (WANO) have both independently confirmed that the units 3 and 4 had met international safety standards.²⁸

In 2003 Bulgaria's Supreme Administrative Court annulled the government's decision to close units 3 and 4 by the end of 2006. It decided that the government did not provide sufficient evidence that it had fully assessed the social, economic and safety aspects of the premature closure of the two units²⁹.

Nevertheless, the Units 3 and 4 of Kozloduy NPP have been closed in December 2006 as stated in Bulgaria's Accession Treaty to the European Union.

Kozloduy NPP Units 3 and 4 generated around 12% of Bulgaria total electricity production. To replace energy produced by the units, more coal will have to be burnt in thermal power plant, increasing the emissions of greenhouse gases.³⁰ The early closure of those two reactors caused not only losses resulting

²⁶ Summary report for conduct of KNPP Stress Tests, October 2011

²⁷ Kozloduy NPP website http://www.kznpp.org/index.php?lang=en&p=about_aec&p1=company_modernization

²⁸ World Nuclear News <http://www.world-nuclear-news.org/newsarticle.aspx?id=24417>

²⁹ OECD Nuclear Energy Agency - Case Law - http://www.oecd-nea.org/law/nlb/nlb-71/041_056.pdf

³⁰ European Nuclear Society <http://www.euronuclear.org/e-news/e-news-11/bulgaria-print.htm>

from unrealised profits, but also contributed to the increase in the price of electricity produced by the Plant.

In January 2009 another gas shut-off demonstrated the country's dependence on Russian energy export. This event prompted President Georgi Parvanov to suggest re-opening the Units 3 and 4. While popular, this idea was blocked by then Prime Minister Sergei Stanishev, who recognised the opposition it would face from the EU.³¹

In March 2012, the government announced that long-standing plans for the construction of a new nuclear power plant at Belene were to be formally abandoned (due to safety reasons and high costs).³²

In April 2012 the Bulgaria's government decided to construct a 1000 megawatt reactor (**unit 7**) at Kozloduy which is to become operational in 2021-2022. It would be built on market principles (i.e. without government money or state guarantees).³³

In January 2013 a referendum was held on whether a new nuclear plant should be built. Bulgarians backed to idea (60 %). Because of the low turnout (slightly above 20 %) the referendum was invalidated and the issue will be brought to the parliament's agenda for discussion.³⁴

3.3. Financial Assistance for the Decommissioning of Kozloduy Plant

The European Commission and other donors offered the Bulgarian government an assistance programme to cope with the early closure of the plant and the development of a competitive energy sector. In June 2001, the Kozloduy International Decommissioning Support Fund (KIDSF) was established at the EBRD.

For the **1999-2013 period**, the total EU funding for the Decommissioning of the Kozloduy NPP amounted to **870 € million**.

Among the possible options for decommissioning presented by the IAEA (see point 3.1) initially a Safe Enclosure strategy was selected in 2001. However, following the strategy assessment the Bulgarian Government decided to change to an Immediate Dismantling strategy in 2006. This is in line with international recommendations and allows an accelerated decommissioning process, to preserve the available know-how of the plant staff and to employ them for dismantling activities, thereby also mitigating the social consequences of the closure.³⁵

³¹ IHS

<https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=Reference&ItemId=+++1301838&Pubabbrev=BALK>

³² Europa World Plus <http://www.europaworld.com/entry/bg.ec>

³³ Reuters "Bulgaria to build new nuclear unit at Kozloduy" of 11 April 2012

<http://www.reuters.com/article/2012/04/11/bulgaria-nuclear-idUSL6E8F4B9320120411>

³⁴ Times of Malta "Bulgarian vote for nuclear plant" of 28 January 2013

<http://www.timesofmalta.com/articles/view/20130128/world/Bulgarian-vote-for-nuclear-plant.455169>

³⁵ EUR-Lex <http://eur-lex.europa.eu/>

Following the closure of the concerned reactors, Bulgaria was committed to proceed with the implementation of the decommissioning plan.³⁶

The strategy for the management of spent nuclear fuel and radioactive waste until 2030, as updated in 2011, envisages the full decommissioning of Units 1 to 4. In the long term, these sites are to be re-cultivated up to "brownfield" status.

Table 8: EU funds for decommissioning of Kozloduy NPP (1999-2013 period)

	ASSISTANCE PROVIDED UNDER	EU AMOUNT	MANAGED BY
From 1999 to 2006 Pre-accession Period	PHARE Programme	342 € million	EBRD
From 2007 to 2009 Accession Period	Article 30 of the Act to the Accession Treaty	228 € million	BNF ³⁷
From 2010 to 2013 Post-accession Period	Council Regulation (Euratom) No 647/2010	300 € million	BNF
Total		870 € million	

Source: European Court of Auditors - EU Financial Assistance for the Decommissioning of Nuclear Plants in Bulgaria, Lithuania and Slovakia: Achievements and Future Challenges (p.12 and p.30)

³⁶ European Commission - Commission Staff Working Paper "Executive summary of the impact assessment" Accompanying document to the Proposal for a Council Regulation on Union support for the nuclear decommissioning assistance in Bulgaria, Lithuania and Slovakia (COM (2011) 783 final)

³⁷ Bulgarian National Fund

Table 9: EU funds for decommissioning of the Kozloduy NPP (2007-2013 period)

	KIDSF (EUR)	NOT YET ALLOCATED (EUR)
Bilateral Donors ³⁸	14,9 million	
EU Contribution	642,8 million	223,4 million
Interests Generated	26,7 million	
Total (EUR)	907,8 million	

Source: European Court of Auditors - EU Financial Assistance for the Decommissioning of Nuclear Plants in Bulgaria, Lithuania and Slovakia: Achievements and Future Challenges (p.30)

The EBRD manages the public funds allocated to the programmes for decommissioning and monitoring the financial management of these programmes. The EBRD carries out the budget tasks entrusted to it by the European Commission in line with the requirements of the Financial Regulation³⁹.

A Council Regulation⁴⁰ provides the legal basis for additional EU assistance for 2010-2013.

As regards the EUR 684,4 million which are the available resources for the KIDSF: **EUR 5,2 million** have been allocated to **EBRD operational costs**, **EUR 326,8 million** were allocated to **decommissioning projects**, **EUR 248,2 €** million were allocated to **energy projects** and EUR 104,2 million have yet to be allocated.⁴¹

A further EU assistance is envisaged for the period 2014-2017⁴².

3.4. Decommissioning Projects and Funding Shortfall

The financial EU support has effectively mitigated the economic consequences of the early closure and the decommissioning process in well engaged. The multi-annual assistance package supports such areas as:

- decommissioning and waste management

³⁸ Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Luxembourg, the Netherlands, Austria, Poland, Finland, Sweden, the United Kingdom, Norway and Switzerland

³⁹ European Commission - Commission Staff Working Paper "Nuclear Decommissioning Assistance Programme data" (COM (2011) 432 final)

⁴⁰ OJ L 189, 22.7.2010, p.9

⁴¹ European Court of Auditors - Special report No 16/2011- EU Financial Assistance for the Decommissioning of Nuclear Plants in Bulgaria, Lithuania and Slovakia: Achievements and Future Challenges (p.30)

⁴² European Commission - Commission Staff Working Paper "EU Decommissioning Funding Data" (COM(2013) 121 final)

- mitigation of the closure consequences (for example, replacement capacity for electricity production, energy efficiency measures etc.)
- mitigation of social consequences.

The assistance is implemented through the International Decommissioning Support Fund (IDSF), managed by the European Bank for Reconstruction and Development (EBRD).⁴³

In March 2011 Bulgaria updated its decommissioning cost estimates (presented below). However, the ultimate responsibility for decommissioning and its financing lies with the Member State in which nuclear power plant is situated.

Table 10: Decommissioning Funding Shortfall in EUR million

Estimates in the decommissioning plans	Latest Cost estimate	Available funding (all sources)	Funding shortfall
1 118	1 243	664	579

Source: European Court of Auditors, Special report No 16/2011, p. 19

For the period 2014-2020, the European Commission proposed for the Kozloduy Programme an amount of **EUR 208 million** (current prices). New commitment appropriations will be entered into the EU budget until 2020. However, payment appropriations will continue for several more years, most likely until 2024. These appropriations will be subject to a review by the end of 2015 within the framework of an interim evaluation⁴⁴.

Funding shortfall can jeopardize the safe maintenance of the shutdown reactors until they are completely defueled. However, the adequate funds are not available as due to the early closure it was not possible to accumulate sufficient funds⁴⁵.

The three specific objectives of the additional EU support programme are to:

- reach an irreversible state within the decommissioning process
- safely manage the radioactive waste
- maintain the key expertise and knowledge.

The European Parliament expressed its concerns about the fact that after more than ten years, none of the three NPP (In Bulgaria, Lithuania and Slovakia) has been irreversibly shut down. The European Court of Auditors has estimated the funding gap for decommissioning in those three countries at EUR 2.5 billion.⁴⁶

⁴³ European Commission http://ec.europa.eu/energy/nuclear/decommissioning/ndap_en.htm

⁴⁴ European Commission - Proposal for a Council Regulation on Union support for the nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia, COM(2011)783 final 2010/0363 (NLE)

⁴⁵ European Commission - Commission Staff Working Paper "Executive summary of the impact assessment" Accompanying document to the Proposal for a Council Regulation on Union support for the nuclear decommissioning assistance in Bulgaria, Lithuania and Slovakia (COM (2011) 783 final)

⁴⁶ European Parliament, Press release "Funding gap for nuclear decommissioning in Bulgaria, Lithuania and Slovakia" of 22 January 2013

<http://www.europarl.europa.eu/news/en/news-room/content/20130121IPR05429/html/Funding-gap-for-nuclear-decommissioning-in-Bulgaria-Lithuania-and-Slovakia>

3.5. Post-Fukushima Period - Stress Tests

Immediately after the nuclear accident at the Fukushima Daiichi NPP, the EU decided to take a critical look at its nuclear power production and re-assess the safety and security of all NPP on the EU. All Member States that operate NPP agreed to participate in these voluntary stress tests.⁴⁷ The stress tests assess whether a NPP can withstand the effects of natural disasters and man-made failures and malevolent actions.

The Bulgarian Government took urgent actions to reassess the Kozloduy NPP capability to respond to extreme situations. A large number of additional inspections of the technical status and preparedness of the personnel to respond to extreme situations were carried out within the frames of the programme.

Kozloduy NPP carried out stress tests for the nuclear facilities on site and at the end of 2011 the BNRA presented the Bulgarian National Report to ENSREG⁴⁸. In 2012 a Programme for implementation of the recommendations from the stress tests was launched.

The Bulgarian government follows the National Action Plan (NAP), which sets out its deadlines and responsibilities⁴⁹. The implementation of all actions is planned before the end of 2017. Several actions are already completed, the majority of actions are "in progress".⁵⁰

3.6. Anticipated Impact

The direct impact resulting from decommissioning of Units 1 to 4 at Kozloduy NPP are based on preliminary estimates and comparison with the Greifswald NPP in Germany⁵¹. According to the Energy Institute JSC report the impact of decommissioning is expected to be very low.

At the Units' final shutdown the radiological level will be considerably reduced compared to the operational phase. The non-radiological impacts, such as generation of conventional waste and harmful emission, have been assessed as very low, short-term and local. Neither transboundary radiological or non-radiological impacts are expected.

The impacts on the environment and the people will be reduced further by application of minimization and mitigation measures and the performed environmental monitoring.⁵²

3.7. Operational Safety Review Team (OSART) Visit

⁴⁷ European Commission MEMO/12/157 of 6/3/2012

⁴⁸ European Nuclear Safety Regulators Group

⁴⁹ European "Stress tests" Kozloduy NPP, National Action Plan of Bulgaria, Nuclear Regulatory Agency, December 2012

⁵⁰ ENSREG National Action Plans Workshop, Summary Report, June 2013

⁵¹ Located in Lubmin, in north-east Germany, the Greifswald NPP was one of the most important energy suppliers in the former GDR. It was closed after the reunification in 1990, as it did not comply with the safety standards of West Germany. (<http://www.welcome-centre-greifswald.de>)

⁵² "Environmental impact assessment report for the decommissioning of units 1 to 4 at Kozloduy NPP" by Energy Institute JSC of 30/5/2013

At the request of the Bulgarian Government, in 2012 the Operational Safety Review Team (OSART)⁵³ carried out a review of the Kozloduy NPP focused on operational safety. The review covered such areas as management, maintenance, technical support, radiation protection, emergency planning etc. The team identified a number of proposals for improvements as well as some good practices. The follow-up mission is planned to take place in 2014.⁵⁴

⁵³ Operational Safety Review Team

⁵⁴ IAEA "Report of the OSART mission to the Kozloduy NPP Bulgaria" NSNI/OSART/012/174

4. STATE AGENCIES

4.1. Bulgarian National Audit Office (BNAO)

The BNAO continues the budgetary control traditions of the **Supreme Chamber of Control**, which was established by law in 1880 and was operating until 1947. It supervises the implementation of the budget and it comprises a president and two vice-presidents elected by the National Assembly.

It exercises control over the implementation of the budget and other public funds and activities in accordance with the BNAO Act and the internationally accepted auditing standards. Its main task is to control the reliability and truthfulness of the financial statements of budget-funded organisations, the legality, efficiency, effectiveness and economy of the management of public funds and activities, as well as to provide the National Assembly with reliable information thereof.⁵⁵

The BNAO is independent in performing its operations and reports directly to the National Assembly. It has an independent budget, which is part of the republican budget of the Republic of Bulgaria. The BNAO adopts an annual audit program and it also audits any resources coming from EU funds and programmes, including their management by the relevant authorities and by the end users.

4.2. Audit Authority - Audit of EU Funds Executive Agency

The Audit of EU Funds directorate at the Ministry of Finance was transformed into Audit of EU Funds Executive Agency to the Minister of Finance. The aim of this change was to strengthen the administrative capacity and independence of the Audit Authority (AA) in view to achieving stronger control on the lawfulness, regularity and eligibility of expenditure involving EU funds.

The Agency is the body carrying out specific audit activities under EU funds and programmes. Its mission is to provide assurance that the management and control systems of the EU funds are adequate and that the financial interests of the European Community are properly protected.

The audit activities of the Agency, among others, are:

- it is responsible for the compliance assessment of the management and control systems (art. 71 of Reg. 1083/2006 and art. 25 of Reg. 1828/2006)
- it performs functions of an AA for the EU Structural and Cohesion Funds, and bilateral cross-border cooperation programmes⁵⁶

Director of the Agency: Dobrinka MIHAYLOVA

4.3. Nuclear Regulatory Agency (NRA)

The primary mission of the NRA is to protect the individuals, society, future generations and the environment from the harmful effects of ionising radiation. Its legislative basis complies with the IAEA standards and the EU practices. It is an independent specialized authority of the executive power.

Its activities include:

⁵⁵ BNAO website <http://www.bulnao.government.bg/>

⁵⁶ Ministry of Finance of the Republic of Bulgaria <http://www.minfin.bg/en/page/243>

- keeping up to date the legislative requirements, according to the changes in the international standards and the EU legislation
- issuance of regulatory guides where necessary
- imposing penalties (only after all other means for achieving safety have been exhausted)
- work for implementation of the obligations of Bulgaria in the field of nuclear radiation safety and radiation protection, ensuing from international conventions, treaties and agreements.⁵⁷

The Chairman of the NRA implements the state regulation of the safe use of nuclear energy and ionising radiation, safety of radioactive waste management and safety of spent fuel management.

4.4. State Enterprise "Radioactive Waste (SE "RAW")

The SE RAW was established in 2004 under the conditions of the Act on the Safe Use of Nuclear Energy to meet the requirement for the State responsibility for guaranteeing the safe management of the radioactive waste.

It is responsible to carry out the activities during the whole life cycle of radioactive management facilities (e.g. design, construction, commissioning, operation, decommissioning and closure of the facilities for radioactive waste management).

One of two Specialised Divisions is located on the site of Kozloduy NPP and is processing the radioactive waste generated from the operation of the plant.⁵⁸

⁵⁷ Nuclear Regulatory Agency - policy statement www.bnra.bg

⁵⁸ IAEA http://www.iaea.org/OurWork/NE/NEFW/WTS-Networks/IDN/idnfiles/Presentations-in-pdf-Necsa/Country_presentations/Bulgaria.pdf

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