Country Profile – Bulgaria

Review of Status of Emissions Trading Activities in CG11 Countries

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1. LATEST POSITION WITH REGARD TO RATIFICATION OF THE KYOTO PROTOCOL

Bulgaria has signed the Kyoto protocol to the UNFCCC on September 18, 1998, with the obligation to achieve the 8% reduction of GHG emissions during the 1st commitment period when compared to 1988 base year. Bulgaria takes an effort to ratify the Kyoto protocol prior to World Summit on Sustainable Development to be held in September 2002 in Johannesburg. It is envisaged to have the Protocol approved by the Council of Ministers in June 2002 and consequently sent to Parliament for Ratification.

It is expected to achieve a level of GHG emissions in the 1st commitment period below the Kyoto protocol obligations by 11 million tons of CO\textsubscript{2} equivalent with a potential to reduce the emissions even more (depending on compliance with EU requirement for early termination of the operation of two units of the Kozloduy nuclear power plant and the level of investment into energy efficiency in future).

2. BRIEF DESCRIPTION OF THE ENERGY SECTOR AND STATUS OF ENERGY SECTOR REFORM

2.1 Primary energy sources

With virtually no supplies of oil and small reserves of gas, Bulgaria is dependent on imports for more than 49% of its energy supplies if not accounting imports of nuclear fuel\textsuperscript{1}. The main imported energy commodities are crude oil, natural gas, nuclear fuel and coal. Bulgaria exports petroleum products and electricity. The local energy resources are limited to hydropower and deposits of lignite coal. About 42% of the electricity production is provided by NPP Kozloduy. The share of fossil fuels on total primary energy consumption is more than 75%.

Table 1: Primary energy sources balance of Bulgaria (1999) in PJ

<table>
<thead>
<tr>
<th>(PJ)</th>
<th>coal</th>
<th>crude oil</th>
<th>petrol. products</th>
<th>gas</th>
<th>nuclear</th>
<th>hydro</th>
<th>RES + waste</th>
<th>electricity</th>
<th>heat</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic production</td>
<td>177,0</td>
<td>1,6</td>
<td>0,9</td>
<td>172,8</td>
<td>9,9</td>
<td>17,7</td>
<td>-0,8</td>
<td>379</td>
<td></td>
<td></td>
</tr>
<tr>
<td>net imports</td>
<td>84,5</td>
<td>238,4</td>
<td>-61,3</td>
<td>115,4</td>
<td>-0,3</td>
<td>-7,0</td>
<td>370</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stock changes</td>
<td>8,7</td>
<td>1,7</td>
<td>6,8</td>
<td>-3,9</td>
<td>13</td>
<td>762</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPES</td>
<td>270</td>
<td>242</td>
<td>-54</td>
<td>112</td>
<td>173</td>
<td>10</td>
<td>18</td>
<td>-0,3</td>
<td>-8</td>
<td>762</td>
</tr>
</tbody>
</table>

Source: IEA

2.2 Energy utilities, ownership and privatisation of power sector

Power generation, transmission and distribution

The Bulgarian power sector is currently under restructuring process resulting from new energy legislation. Until recently, all nuclear, hydro, and pumped hydro power plants were owned by state-owned electricity company, Nationalna Elektricheska Kompania (NEK).

In 2000, the production, transfer and distribution activities in the electricity sector were legally separated and the monopoly of the National Electric Company (NEK) was eliminated. Seven independent distribution companies, seven production plants, and NPP "Kozloduy EAD" were established. The generating capacities that will remain under control of NEK-EAD (100% State owned

\textsuperscript{1} According to IEA statistics, nuclear energy is accounted as domestic energy source
joint-stock company), the successor of former NEK will include Maritsa East 3 thermal power plant and 14 hydro and pumped storage power plants.

Apart from seven newly established independent power producers that have been divided from NEK, there are a small number of independent producers, such as municipally owned district heating plants and thermal stations at industrial complexes. The independent producers have 1 606 MW of thermal capacity for combined heat and power (CHP) and they generate 14% of the electricity.

NEK-EAD carries out electric power purchase and sales on the high-voltage level. The new NEK-EAD is now the grid operator, the single buyer of electricity from the Independent Power Generators, and the only supplier of electricity to the distribution companies.

Sales of medium-and low-voltage electric power are performed by the 7 newly established distribution companies with the state being the single owner of the capital.

Privatisation of power sector

The first phase of privatisation in the energy sector has begun with the planned sale of 22 small hydro plants with a total capacity of 226 megawatts (MW). This scheme will act as a pilot project before the privatisation of Bulgaria's entire generation sector. Another 41 hydro plants with a total capacity of 148 MW will follow this sale. Among the largest of the plants on offer is Stara Zagora with a total installed capacity of 22,4 MW.

Six minor hydropower stations were sold to local buyers in 2000. In November 2000 French joint venture Mecamidi-Sofia won a tender to buy the Pirinska Bistritsa 49,2 MW two-dam hydropower cascade. The government hopes that the investor's involvement in the project will help attract further foreign investment into the power sector.

The most recent amendments in the Restructuring and Privatisation of State and Municipality Companies Law introduced a new method for the privatisation of power utilities, including the hydropower plants that have not yet been sold. By the end of 2001, the government was expected to adopt a strategy for the privatisation of state-owned commercial entities in the power sector (energy, natural gas, district heating, and coal mining).

Electricity market liberalisation

Introduction of open access is scheduled for 2002, and in September 2001 it was announced that the country plans to start liberalising its energy market in line with EU accession requirements and IMF recommendations next year.

2.3 Electricity production, consumption, import and export

During the year 2000, power stations of the Bulgarian power system generated 40 863 GWh of electricity. The total consumption of electricity in 2000 was 36 243 GWh. A significant amount of electricity is exported to Turkey, Greece, Yugoslavia, Macedonia, and Albania. In 2000, Bulgaria exported 5 600 GWh, of which 3 400 GWh went to Turkey. Bulgaria and Turkey have agreed that exports to Turkey should be 5 000 GWh in 2002.

2.4 Structure of installed capacity and power generation

The installed capacity of the Bulgarian power system in January 2001 was 13 189 MW, and is diversified between conventional thermal power plants, nuclear and hydro power plants. In 1999, the contribution of the Kozloduy nuclear power plant in overall electricity generation was about 52%, while the share of power plants fueled by local coal exceeds 40%, and the hydroelectric power plants produce about 8% of Bulgaria's electricity.
2.5 District heating and CHP sector

District heating is the dominant form of space heating and hot water in 22 of the highest density cities in Bulgaria. In 1997 45% of heat was produced in combined heat and power boilers, and 55% in heat only boilers. The total transmission network comprises approximately 2000 km for domestic heat and
DHW supply and about 320 km of industrial heat supply. Of the combined heat and power plants, 30% are coal-fired. All the district heating systems in Bulgaria were built between 1970 and 1990. These systems provide 22% of the total public and residential heating.

Except for the Sofia DH company, which is owned by the municipality and accounts for about 60 percent of the national DH consumption, the remaining DH companies are state owned and governed by the State Agency for Energy and Energy Resources (SAEER). With the objective of ensuring consumers access to the least-cost means of space heating and hot water in an environmentally sustainable manner, the Government is in the process of preparing a strategy for the country’s 22 district heating companies. In addition, the Government will also need to analyse the heating patterns of areas not supplied with district heating and develop a heating strategy to help consumers cope with the liberalisation of coal prices, the phase-out of price subsidies for electricity, meet EU environmental regulations, and mitigate the adverse health impact of poor quality home heating. In that regard, it can be noted that 14 cities in Bulgaria have been identified as “hot spots” which exceed their SO\textsubscript{2}, NO\textsubscript{x} and particulate emission limits.

### 2.6 Future investment plans

National Strategy for Development of Energy and Energy Efficiency Till 2010 (document of 1998) called for eventually shutting down Units 1 through 4 at the Kozloduy nuclear power plant and modernising Units 5 and 6. Bulgaria plans to build the 600 megawatt (MWe) Belene nuclear power plant in the 2002 to 2010 time frame. The plan also calls for construction of 1 500 MWe of coal-fired generating capacity, 430 MWe of hydro-electric power with a pumped storage plant.

Rehabilitating of the coal-fired power plants Maritsa East, Bobov Dol, and Varna is expected to be completed about 2004. This will involve at total of four 150 MWe units and 17 units in the 210-215 MWe range. Besides the rehabilitations, there are 900 MWe of replacement capacity planned for Maritsa East 1, consisting of three 300 MWe units.

There are also several projects planned in the hydroelectric sub-sector: Yadenitsa Dam, Tsankov Kamak Hydroelectric Facility, Gorna Arda Cascade and Sreden Iskar Cascade.

### 2.7 Typical electricity and natural gas prices to industrial and domestic users

The following table gives a brief review of average electricity prices for households and industry in 1999.

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity</th>
<th>Natural Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Households</td>
<td>Industry</td>
</tr>
<tr>
<td>1998</td>
<td>0.075</td>
<td>0.053</td>
</tr>
<tr>
<td>1999</td>
<td>0.0143</td>
<td>0.0143</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IEA

### 3. CURRENT NATIONAL CLIMATE CHANGE RELATED POLICIES

The Bulgarian national policy to address climate change is developed and coordinated by the Ministry of Environment and Waters (MEoW). The basis and the framework of this policy are officially stated in the First and the Second National Communications (1996, 1998) , elaborated by an Interministerial Committee supported by independent organizations and experts and under the coordination of the MEoW. The State Energy and Energy Resources Agency, the State Energy Efficiency Agency and the Ministry of Industry are important actors on this committee.
In 2000 the Bulgarian government adopted a National Climate Change Action Plan (NCCAP), which stipulates the frame of the implementation of the national and sectoral policies with a view on climate change. In Bulgaria there are other relevant policy objectives that are consistent with GHG mitigation target, which includes the National Strategy for Environment, drafts of the National Energy Efficiency Programme, the National Programme on Renewables as examples.

### 3.1 Energy related taxes and subsidies

The **new Energy Act** of July 1999 discusses the necessity of complete set up of the interrelations under state supervision and control of the sector, as well as the rights and duties of the companies when producing, transmitting, distributing and selling electricity and heat energy, and when transmitting, storing, distributing and selling natural gas. The Act aims to introduce market instruments in the energy sector and to harmonise Bulgarian legislation with the EU directives. It is expected the Act to create a legislative basis and opportunities for ensuring of save, rational and reliable energy services at appropriate prices, for efficient and environmentally friendly least-cost energy supply, sustainable developments, promotion of energy efficiency and private ownership, opportunities for competition among energy producers, increase of the investments, modernisation of the infrastructure, access to the international markets and introduction of options to the consumers.

Changes of structure and the level of energy prices are fundamental to promote energy efficiency, to conserve energy, to reduce GHG emissions emitted at the end-use energy consumption, as well as for restructuring of Bulgaria energy sector. At present, when the process of price liberalisation affects all economy, some of the energy prices are still controlled by the Government.

The **tax system** is promoting energy efficient technologies and technologies aimed to reduce GHG. According to Regulation No. 237 (issued in December 1995) for adoption of Custom tariff of Republic of Bulgaria and the **Governmental Decree on Export and Import** No 493 (issued in December 1997), it is prohibited to the import the ozone depleting substances, as well as refrigerators, freezers, air conditioners using or produced by using Freon 11 or Freon 12, including also the installations built-in to vehicles to be used in Bulgaria. An addition to the prohibition list on the import is Halon 1211.

The same Governmental decree enumerates among the duty free goods the import of:

- equipment, spare parts, software and reagents for monitoring, analysis, assessment, reporting and control of the state of the environment, and for emission control;
- installations, equipment and machinery for reduction of the adverse substances in the wastewater flows and emissions, as well as for recultivation of contaminated soils;
- substances, materials and investment equipment for replacement of technologies using ODS;
- new installations and equipment for treatment and storage of wastes (mainly wastes from meat processing); for waste collection and transportation and keeping the clean environment in the villages and cities;
- installations and equipment for energy production from renewables (solar, wind, geothermal energy and biomass);
- materials and equipment for improvement of nuclear safety;
- materials and elements for production of energy saving bulbs.
The following tax rates of excise taxes and VAT are imposed on energy related products in Bulgaria.

<table>
<thead>
<tr>
<th>Objective of the tax</th>
<th>Excise tax rate</th>
<th>VAT rate</th>
<th>Fuel product charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unleaded petrol</td>
<td>113 – 189 EUR/kl</td>
<td>20%</td>
<td>9 EUR/kl</td>
</tr>
<tr>
<td>Leaded petrol</td>
<td>112 - 207 EUR/kl</td>
<td>20%</td>
<td>14 – 18 EUR/kl</td>
</tr>
<tr>
<td>Diesel</td>
<td>48 EUR/kl</td>
<td>20%</td>
<td>6 EUR/kl</td>
</tr>
<tr>
<td>LPG (as propellant)</td>
<td>165 EUR/t</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Kerosene</td>
<td>165 EUR/t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiler fuel, mazut</td>
<td>11 EUR/t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry gasoline</td>
<td>7 EUR/t</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other energy products such as light fuel oil, heavy fuel oil, coal, natural gas, electricity and district heating are subject to 20% VAT rate.

The revenue from fuel product charge goes into the National Environmental Fund and is used for air protection projects. The revenue from excise taxes and VAT go into the central budget.

3.2 Transport policies

The taxation and customs rates on gasoline, diesel and residual with sulphur content over 1% is updated by the Law on Liquid Fuels Taxation for the Republic Road Network Fund and for the National Environmental Protection Fund adopted in February 1996. The new tax levels are as follows:

- For car gasoline: 19% of the producer price or of the custom taxable value increased by import duties and taxes. 14% of the sum is accumulated in the Republic Road Network Fund and 5% in the National Environmental Protection Fund.
- For diesel fuel: 15% allocated as follows: 11% in the Republic Road Network Fund and 4% - in the National Environmental Protection Fund.

Lower level of excise on unleaded gasoline introduced in 1994 by Act on Excise. There is a Governmental Decision from 27 April 1998 for the adoption of a National Program on the gradual phase out of the production and consumption of leaded gasoline in the Republic of Bulgaria that is also contributing in the field of emission reduction.

Additional import duties on used cars was introduced in 1995. At the beginning of 1998 those duties were removed for the cars imported from EU and countries members of the European Free Trade Association. New regulations aiming at better environmental indicators of the import cars are under discussion.

3.3 Technical standards

Energy labelling

According to Energy and Energy Efficiency Law adopted in 1999, the locally produced or imported products and goods, as well as buildings consuming electric and heat energy, natural gas, liquid and solid fuels, when used for their purposes, shall bear labelling pointing their operational energy indicators.

Insulation and standards for buildings

Regulation No.1 from July 28, 1992 sets forth the requirements concerning heat insulation efficiency of the buildings. The construction of new building has to be in compliance with the heat related constructions and physical criteria in order to reduce energy cost for heating. In 1993 a supplementary material was issued as Guidelines for elaboration of the heat efficiency part to the investigation and design works (BSA, 6/1993).
The Standards for Designing of Building Heat Insulation edited in 1987 and amended in 1991 are now in force in Bulgaria. In general, Bulgaria heat insulation standards correspond to the standards in the EU countries and no major changes are needed. Problems arise, however, because the existing building stocks and the greater part of buildings under construction do not meet the heat insulation standards.

There are regulations for accepting the hydro, steam and heat insulation in construction, special standards for state technical control and other regulations in force. Currently a regulation on the heat insulation of buildings, regulations for design and a regulation for heat insulation designing are under discussion. Since there is no unification in these standards throughout the European countries, the German standards DIN 4108 for heat insulation of high floor buildings with all subsequent amendments are taken as a model.

The new regulations require a new Pr EN 12086/1995 standard to be adopted. There are a series of transitional and new standard elaborated. Due to the limited funds there are no a definite dead line for the enforcement of the standards. An important standard that is omitted in the program is PrEN 832 (Thermal Performance of Buildings - Calculation of energy use for heating - Residential buildings). Its acceptance by CEN/CENELEC has to provoke its uniform introduction in Bulgaria together with standards on the Heating ventilation, air conditioning and purification equipment.

Construction control, specific programs for energy efficiency in buildings and new building technologies are foreseen as the most promising measures to conserve energy and therefore to reduce GHG originating from the sector.

### 3.4 Agricultural policies

The most of national climate change related policies are focused primarily on energy efficiency, where the potentials for GHG emissions reduction are the highest. Although agriculture was an important sector in Bulgarian economy, due to economic crisis and to the structural changes its share in current CO₂ emissions became rather marginal. Agricultural sector plays only important role in methane emissions where it accounts for 25% of Bulgarian total emissions.

The Ministry of Agriculture, Forestry and Rural Reform takes the responsibility for the measures undertaken in the agricultural and forestry sectors.

In agricultural sector, the climate change related policy goes rather the way of implementation of individual demonstration projects (wind-powered water pumping, utilisation of biomass, afforestation of non-arable land, protection against erosion) than consistent the way of consistent, sector-wide policy. The Ministry of Agriculture, Forestry and Rural Reform, however, considers or prepares application of methane emissions reduction measures like:

- Biological fermentation in stock-breeding;
- Effective utilisation of solid and liquid manure;
- Improved methods of rice cultivation.

### 3.5 Information and awareness programmes on energy efficiency

Since 1997, environmental studies have been integrated into the curricula of both secondary schools and technical universities. The hosts discussed the role of the regional energy centres and the media in informing the local governments. One such initiative mentioned was the Municipal Energy Efficiency Network involving 23 municipalities, set up in 1997, of which the NGO Centre for Energy Efficiency, EnEffect functioned as the secretariat. The network, which was initially funded by the United States Agency for International Development, is now funded under the Global Environment Facility and the UNDP project on “Energy Efficiency Strategy to Mitigate GHG emissions”. The network not only facilitates energy management and planning at the municipality level but also produces a bulletin containing up-to-date information on efficient energy use, renewable energy sources and environmental protection. The network has also developed a trainer training programme on energy management and planning and completed training courses for the network on energy efficiency, municipal energy planning, the law on energy efficiency and other subjects.
4. OPPORTUNITIES FOR COST EFFECTIVE, LOW COST AND HIGH COST GHG EMISSION REDUCTION POTENTIALS

The high emission factors for electricity consumption in the energy intensive industries (1.59 kg CO₂ /kWh) and light industry (1.68 kg CO₂/kWh) contribute to the low costs of the GHG reduction measures. Therefore, a great potential is available in the industrial sector of Bulgaria for reduction of its energy intensity and hence for GHG mitigation, i.e. more than 3 Tg CO₂ annually. The potential for reduced consumption of some other fuels and subsequently for less CO₂ emissions due to fuel combustion is even more substantial. The total mitigation potential in the industrial sector is 5.6 Tg CO₂. As far as all studied measures are economically feasible, it could be considered that 40-50% of them will be applied without need of a special program for energy efficiency and costs are less than 10 USD per tonne per ton of CO₂ reduction. The remaining 50-60% require additional measures since the financial situation of the enterprises and the limited capital resources do not allow investments to be made even for measures with payback period less than 3 years.

A great mitigation potential of 5.3 Tg CO₂ exists also in the residential and commercial sector that is responsible for 40% of the energy consumption. The financial status of the Bulgarian households would hardly allow the introduction of individual energy efficiency measures, if not externally funded. Therefore the penetration rate in the sector it is assumed to be 40% with necessary support programme.

The energy supply sector has the greatest reduction potential. It accounts for about 40 million ton CO₂ annually (there is substantial overlapping in the value presented). Its execution is hindered by obstacles from political and social nature - increased energy dependence due to the natural gas and nuclear fuel import, increased unemployment because of the reduced extraction of local energy resources.

One of the key mitigation measures is the gas supply to households, commercial and administrative buildings. It results in 6.8 Tg CO₂ annually. Only half of this potential is considered in the baseline scenario, while the mitigation scenario explored the entire potential.

In the Second National Communication to UNFCCC, the following main measures and their costs have been assessed:

**Table 3: CO₂ reduction potential and investment cost per ton CO₂ emission reduction in Bulgaria**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Annual potential (mill. t. CO₂)</th>
<th>Investment cost (mill. USD)</th>
<th>USD/t CO₂ life cycle</th>
<th>life cycle years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of electrical losses</td>
<td>2.1</td>
<td>91</td>
<td>2.90</td>
<td>15</td>
</tr>
<tr>
<td>Reduction of thermal losses</td>
<td>2.0</td>
<td>235</td>
<td>5.90</td>
<td>20</td>
</tr>
<tr>
<td>Upgrading of heat production plants</td>
<td>3.3</td>
<td>246</td>
<td>3.70</td>
<td>20</td>
</tr>
<tr>
<td>Micro-hydro potential</td>
<td>1.1</td>
<td>275</td>
<td>5.00</td>
<td>50</td>
</tr>
<tr>
<td>Hydro power projects</td>
<td>4.3</td>
<td>1335</td>
<td>6.20</td>
<td>50</td>
</tr>
<tr>
<td>Natural gas combined cycle</td>
<td>13.0</td>
<td>1267</td>
<td>6.50</td>
<td>15</td>
</tr>
<tr>
<td>New Belene NPP</td>
<td>9.0</td>
<td>1300</td>
<td>8.50</td>
<td>30</td>
</tr>
<tr>
<td>TPP rehabilitation</td>
<td>1.3</td>
<td>585</td>
<td>28.00</td>
<td>15</td>
</tr>
<tr>
<td>Gas supply to households</td>
<td>6.8</td>
<td>1650</td>
<td>6.07</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Second Bulgarian National Communication to UNFCCC

5. CURRENT AND FUTURE AVAILABILITY OF DOMESTIC AND INTERNATIONAL CAPITAL FOR ENERGY SECTOR PROJECTS

Foreign investment in Bulgaria was comparatively low until 1997, but since then the new reformist government has brought about a remarkable change in the investment climate. As a result, the receipts from foreign investment have increased substantially. From January 2001, corporate taxes were cut to some of the lowest levels in the region, further improving the investment environment.
Bulgaria has one of the most liberal foreign investment laws in the region. Foreign investment typically assumes one of the following forms: establishing a joint venture with existing companies, state-owned or private; acquiring a company through privatisation; setting up a new (green field) venture; or making a portfolio investment. Portfolio investment has been minimal given the relative lack of development and inefficiencies of the capital markets.

The problems most often cited by foreign investors in Bulgaria are: government bureaucracy; poor infrastructure; little advance notice of new laws or regulations as well as frequent changes in the legal framework; low domestic purchasing power; the banking system; the protracted privatisation process; and a relatively high tax burden.

6. ATTITUDE TO FUTURE COMMITMENT PERIODS

Bulgaria has no clear position regarding to future commitment periods. The current and expected level of emissions does not threaten the fulfilment of the Kyoto target. However, there might be an uncertainty about the future evolution of mitigation commitments that could, for example, include some relative targets, where the EIT countries are expected to have problems with its fulfilment.

7. SPECIFIC COMMENTARY ON THE APPROACH FOR USE OF FLEXIBLE MECHANISMS

From the two flexible mechanisms considered, the Joint Implementation is the priority at the moment. Ministry of Environment and Water has set up a Joint Implementation unit (consisting from 1 and 1/2 person). The JI unit was created in relation to the Memorandum of Understanding between Bulgaria and the Netherlands for cooperation in the area of GHG emissions reductions (signed in April 2000).

The JI Unit is an independent evaluating unit, hosted by the State Energy Efficiency Agency and under the direct supervision of the Ministry of Environment and Water. The main task of the Unit is to evaluate the project and advise the decisions of the Bulgarian Ministry of Environment and Water. The JI unit is also responsible for promotion of the Dutch Emission Reduction Unit - Procurement Tender (ERU-PT) scheme and creation of awareness on Joint Implementation in general. The promotional activities include provision of detailed to local business communities, foreign companies active in Bulgaria, and other stakeholders such as NGOs, municipalities, Ministries, agencies, etc. For the first round of the ERU-PT tender 6 projects was submitted.

Currently there are undergoing negotiations on agreement with Prototype Carbon Fund as well.

Regarding to emissions trading, Bulgaria has no clear position yet. Minister of Environment and waters already declared the interest of Bulgaria to participate in International Emissions Trading, but no detailed research or studies were realised. Possibility of introducing of domestic emissions trading scheme is currently under discussion on a governmental level. The establishment of necessary rules and procedures enabling the domestic emissions trading will probably be closely connected to implementation of the IPPC directive of the EU.

Participation in Joint Implementation and International Emissions Trading are one of the main goals of updating of the National Climate Change Action Plan that is currently undertaken.

8. CAPACITY BUILDING NEEDS WITH REGARD TO CLIMATE CHANGE STRATEGY

Capacity building needs are one of the key issues related to climate change. Current capacities are insufficient to develop policies and establish all the systems required by the Kyoto protocol. As there are no problems with fulfilment of the Kyoto protocol commitments the climate change is not, although it is often declared to be, a priority at the moment. Thus the sources allocated to climate change issues are small and not sufficient. Except the JI unit and the Ministry of Environment and Waters no other institution have full time staff devoted to climate change issues while the current staff is underestimated. Some expertise on climate change issues is also provided externally.
Foreign assistance was until now a main source of climate change issues; the most likely source of domestic funding is the National Environment Protection Fund, which has recently been the main source of funding the work on national inventories and national communication.

The main problems related to general awareness on UNFCCC and Kyoto protocol are the lack of general information and awareness on climate change issues, limited number of organisations, institutions and experts involved in necessary research, estimates, projections, assessments, studies and other related work in the area of climate change.

Also, the access to information and communication among Parties could be improved; there is a need of a complex architecture of the Kyoto Protocol issues in EIT countries.

Bulgaria has a well functioning system of national GHG inventories, which provides a good basis for developing a registry system. Recently a Bulgaria realised a case study on national registries supported by the OECD Annex I Expert Group. Even if the need for registry has still not appeared and the final decision on registries on international level has not been made yet, the issue of establishing the national registry is one of the key issues of climate change policy.

9. LIST OF THE KEY EMISSIONS TRADING STAKEHOLDERS AND PLAYERS

9.1 Governmental sector

Ministry of Environment and Water
67 William Gladstone str., 1000 Sofia, Bulgaria
Ms. Dolores Arassenova, Minister
tel.: +359 2 940 6222, +359 2 981 13 85, fax: +359 2 986 25 33

Joint Implementation Unit - Bulgaria
Ekzarh Yosif Str. 1000 Sofia Bulgaria
Ms. Yeni Katsarska, Ms. Ivona Grozeva
tel.: +359/2/ 981 31 05, +359/2/ 980 14 34; fax: + 359/2/ 981 58 02;
e-mail: ji-unit.katsarska@seea.government.bg , ji-unit.grozeva@seea.government.bg

SEEA - State Energy Efficiency Agency
37 Ekzarh Jossif, 1000 Sofia, Bulgaria
Mr. Kolio Kolev, Director on EE and RES State policy
tel: +35 92 981 8561; fax: +35 92 981 5802; e-mail: kkolev@seea.government.bg; web:
www.seea.government.bg

Executive Environmental Agency
136A Tzar Boris III Str., 1618 Sofia, Bulgaria
Mr. Georgi Mirinchev
tel: +359-2-955-9818; fax:+359-2-955-9015

9.2 Private sector (energy and heat production, industry, associations)

Bulgaria Foreign Investment Agency
3, Sveta Sofia Str., Sofia 1000, Bulgaria
tel.:+359-2-980 09 18; fax: +359-2-980 13 20; e-mail: fia@bfia.org
9.3 NGO´s and others

Bulgarian Academy of Sciences National Institute for Hydrology and Meteorology
66, Blvd. Tzarigradsko Shosse, 1000 Sofia, Bulgaria
tel.: +359-2- 975-3986; fax: +359-2-988-0380

EnEffect, Center for Energy Efficiency
Mailing Address: P. O. Box 85, 1606 Sofia, Bulgaria
Head Office: 1, Christo Smirnensky Blvd., III Floor, 1164 Sofia
Dr. Arch. Zdravko Gentchev, Executive Director
tel.:+359-2-963 17 14; 963 07 23; 963 21 69; fax: +359-2-963 25 74; e-mail: eneffect@mail.orbitel.bg

Black Sea Regional Energy Centre
Triaditza 8, BG-1040 Sofia, BULGARIA
Ms. Ekatariana KANATOVA
tel: +359 2 9806854; fax: +359 2 9806854; e-mail: ecsynkk@bsrec.bg; web: www.bsrec.bg

10. REFERENCES

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4. DOE Fossil Energy International Activities website (http://www.fe.doe.gov/international/e-eur.shtml)
5. Doukov, Dimitar - Joint implementation and its pilot phase in Bulgaria; The Regional Environmental Center for Central and Eastern Europe, Szentendre, 2001
6. EIA/DOE Country analysis briefs website (http://www.eia.doe.gov/cabs/contents.html)
11. Republic of Bulgaria - The Second National Communication on Climate Change to the UNFCCC
12. Website of Nationalna elektricheska kompania (http://www.nek.bg/index.htm)
## 11. SUMMARY TABLE

<table>
<thead>
<tr>
<th>Country</th>
<th>Bulgaria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date of Ratification of Kyoto Protocol</strong></td>
<td>expected in summer 2002</td>
</tr>
<tr>
<td><strong>Kyoto Preparation (Yes/No)</strong></td>
<td></td>
</tr>
<tr>
<td>- National Communication in CRF</td>
<td>yes (1999)</td>
</tr>
<tr>
<td>- National Registry</td>
<td>no, preparatory works ongoing</td>
</tr>
<tr>
<td>- Monitoring and Verification Protocols</td>
<td>no</td>
</tr>
<tr>
<td>- JI Projects Office</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Climate Change Policies (Yes/No)</strong></td>
<td></td>
</tr>
<tr>
<td>- National GHG mitigation strategy included in national communications</td>
<td>no</td>
</tr>
<tr>
<td>- Carbon taxes ($/tonne)</td>
<td>0</td>
</tr>
<tr>
<td>- Electricity taxes ($/kwh)</td>
<td>0</td>
</tr>
<tr>
<td>- Renewables taxes ($/kwh)</td>
<td>0</td>
</tr>
<tr>
<td>- Energy Sector subsidies for fossil fuels</td>
<td>0</td>
</tr>
<tr>
<td>- Energy Sector subsidies for renewable energy</td>
<td>0</td>
</tr>
<tr>
<td>- Programmes to raise awareness and promote energy-efficiency</td>
<td>yes</td>
</tr>
<tr>
<td>- Performance Standards</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Energy and GHG Emissions Intensity of Economy (1999)</strong></td>
<td></td>
</tr>
<tr>
<td>- CO₂ Emissions (Mt of CO₂)</td>
<td>43.77</td>
</tr>
<tr>
<td>- TPES/capita (toe/capita)</td>
<td>2.22</td>
</tr>
<tr>
<td>- TPES/GDP (toe/thous. 1995 USD)</td>
<td>1.57</td>
</tr>
<tr>
<td>- Elec. Consumption / capita (kWh/capita)</td>
<td>3.633</td>
</tr>
<tr>
<td>- CO₂ / TPES (t CO₂/toe)</td>
<td>2.40</td>
</tr>
<tr>
<td>- CO₂ / capita (t CO₂/capita)</td>
<td>5.33</td>
</tr>
<tr>
<td>- CO₂ / GDP (kg CO₂/1995 USD)</td>
<td>3.77</td>
</tr>
<tr>
<td><strong>Opportunities for low and high cost GHG reduction JI projects (best sectors)</strong></td>
<td></td>
</tr>
<tr>
<td>- gas supply to households, commercial and administrative buildings.</td>
<td></td>
</tr>
<tr>
<td>- demand-side measures in industry</td>
<td></td>
</tr>
<tr>
<td>- demand-side measures in households</td>
<td></td>
</tr>
<tr>
<td><strong>Current and Future Level of domestic and international capital for investment in the energy sector</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Experience with JI (e.g – World Bank PCF, Erupt etc …)</strong></td>
<td></td>
</tr>
<tr>
<td>- JI is the current priority</td>
<td></td>
</tr>
<tr>
<td>- MoU with Netherlands</td>
<td></td>
</tr>
<tr>
<td>- 6 projects submitted. for the 1st round of ERU-PT tender</td>
<td></td>
</tr>
<tr>
<td>- negotiations on agreement with PCF</td>
<td></td>
</tr>
<tr>
<td><strong>Experience with international emissions trading (any deals brokered?)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Experience with emissions trading (policy studies, discussion documents)</strong></td>
<td></td>
</tr>
<tr>
<td>- no clear position to ET yet</td>
<td></td>
</tr>
<tr>
<td>- domestic ET scheme currently under discussion on a governmental level</td>
<td></td>
</tr>
<tr>
<td><strong>Establishment of Registry (work underway or not yet started?)</strong></td>
<td></td>
</tr>
<tr>
<td>- preparatory activities underway (case study on national registries supported by the OECD)</td>
<td></td>
</tr>
<tr>
<td><strong>Policies on Allocation of Surplus (work underway or not yet started)</strong></td>
<td></td>
</tr>
<tr>
<td>- no</td>
<td></td>
</tr>
<tr>
<td><strong>Attitude to future commitment periods of KP (no discussion or some discussions)</strong></td>
<td></td>
</tr>
<tr>
<td>- no clear position</td>
<td></td>
</tr>
</tbody>
</table>

*highlighted data – to be checked/updated*