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Energy Sector Governance and Energy (In)Security in Bulgaria

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ENERGY SECTOR GOVERNANCE AND ENERGY (IN)SECURITY IN BULGARIA

CENTER FOR
THE STUDY OF
DEMOCRACY

This report explores the major governance deficiencies in the Bulgarian energy policy regarding the strategic, institutional, and legal framework of the sector. The report focuses on state capture of energy policy by private political and economic interests that led to bad management practices in the sector, to lack of consistency in the legal and regulatory framework, to deteriorating investment environment, and to the involvement of the country in infrastructure projects that undermine the national long-term strategy and policy priorities. This has affected negatively the Bulgarian taxpayers and consumers, has jeopardized the financial stability of the state-owned energy companies, and, ultimately, has reduced the energy security of the country. The report recommends that the implementation of the country's energy policy should be reconsidered and should be based on EU priorities and on sound cost-benefit analyses with regard to Bulgaria's energy security.

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LIST OF ABBREVIATIONS

Bcm	Billion Cubic Meters
Bcm/y	Billion Cubic Meters per Year
BEH	Bulgarian Energy Holding
BGN	Bulgarian Lev (Bulgaria's National Currency)
BNB	Bulgarian National Bank
BPD	Barrels per Day
CEE	Central and Eastern Europe
CEH	Copelouzos Energy Holding
CHP	Combined Heat and Power
CJEU	Court of Justice of the European Union
CO_2	Carbon Dioxide
CPC	Commission for Protection of Competition
CSD	Center for the Study of Democracy
DG	Directorate General
DHC	District Heating Company
DSO	Distribution System Operator
E&P	Exploration and Production
EBIT	Earnings before Interest and Taxes
EC	European Commission
EIA	Environmental Impact Assessment
EIA	US Energy Department's Energy Information Administration
EITI	Extractive Industries Transparency Initiative
EPBD	Energy Performance of Buildings Directive
ESO	Electric System Operator
EU	European Union
EUR/mWh	Euro per Megawatthour
FITS	Feed-In Tariffs
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GWh	GigawattHour
HPP	Hydroelectric Power Plant
IDR	Issuer Default Ratings
IIESR	International Index of Energy Security Risk
ISO	Independent System Operator
ITO	Independent Transmission Operator
JESSICA	Joint European Support for Sustainable Investment in City Areas
KIDSF	Kozloduy International Decommissioning Support Fund
KTOE	Kilotonnes of Oil Equivalent
LNG	Liquefied Natural Gas
LPP	Law on Public Procurement
MCM	Million Cubic Metres
MOU	Memorandum of Understanding
MRDPW	Ministry of Regional Development and Public Works

MSS	Member States
MW	Megawatt
NEC	National Electric Company
NOKE	National Mineral Energy Operator
NPP	Nuclear Power Plant
NRA	Nuclear Regulatory Agency
NSI	National Statistics Institute
NZEB	Nearly Zero-Energy Buildings
OECD	Organisation for Economic Co-operation and Development
OU	Ownership Unbundling
PREPECL	Public Residential Energy Procurement Efficiency Credit Line
RES	Renewable Energy Sources
ROI	Return on Investment
RSSPP	Ordinance on the Award of Small Public Contracts
SDC	Shah Deniz Consortium
SEDA	Sustainable Energy Development Agency
SEWRC	State Energy and Water Regulatory Commission
TANAP	Trans-Anatolian Gas Pipeline
TAP	Transadriatic Pipeline
TCM	Thousand Cubic Meters
TPP	Thermal Power Plant
TSO	Transmission System's Operator
USG	Underground Gas Storage
VAT	Value-Added Tax

EXECUTIVE SUMMARY

This report continues the investigation of the origins, reasons and causes of bad governance and insecurity in Bulgaria's energy sector, which CSD has started in 2011 with its report *Energy and Good Governance in Bulgaria: Trends and Policy Options*. Several shortcomings in the governance of the Bulgarian energy sector have been identified, such as widespread corruption practices at all levels of the energy system, mismanagement of state-owned energy enterprises, as well as irregularities associated with public procurement contracts, especially those related to large-scale energy infrastructure projects. The report focuses on possible prevention policies and on overcoming the main governance deficits in light of the energy security risks, which Bulgaria faces. The report takes into consideration the following main framework conditions, which impact national energy sector:

- The EU common energy strategic framework and European Energy Union are in the process of formation;
- The continuous economic stagnation of the country, which has led to falling energy demand as well as the deterioration of the key financial indicators of the state-owned energy enterprises;
- The increasing geopolitical opposition between Europe and Russia as a result of the Ukrainian crisis.

Bulgaria's main energy security risks are determined on the basis of the country's ranking in the *International Index of Energy Security Risk* of the Institute for 21st Century Energy at the U.S. Chamber of Commerce.

The 2013 – 2014 events on national, European and international level proved that good governance in the energy sector is a matter not only of Bulgaria's energy security, but also of its national security. The existence of political corruption and state capture in the Bulgarian energy sector is the result of the systematic inability of the Bulgarian energy policy to introduce good market and governing practices and to mitigate long-term risks to the energy security of the country. A combination of the lack of adequate energy security strategy and close interdependence between corporate and political interests in the governance of the Bulgarian energy sector contributed to the prolonged political instability during the 2013 – 2014 period, and has even threatened the financial and fiscal stability of the country.

Bulgaria's energy sector is characterized by systematic governance problems, which lead to significant losses of public wealth:

- Discrepancy between European commitments and national practices on both strategic and project level;
- Frequent changes in the regulatory and legal environment that lead high rates of investment insecurity;

- Lack of coherent evidence based energy policy, and lack of publicly available information regarding policy performance and results;
- Dependency of the energy regulator on the executive, politicization of regulatory practices, and lack of adequate, transparent oversight of the sector;
- Presence of numerous conflicts of interest at the different levels of governance, accompanied by high risks of corruption, illogical decisions and financial losses;
- Weak management of state-owned enterprises; chronic abuse of monopolistic positions at the expense of customers;
- Politically controlled access of private companies to state-owned subsidies and guarantees.

As a result of the bad governance of the Bulgarian energy sector during 2013 and 2014 risks became higher when the international environment changed abruptly. This change creates additional challenges for national policies and requires careful planning and development of public consensus on decisions related to the future of the country's energy sector. Reducing the governance risks of energy security in Bulgaria require better understanding of national specificities, regional characteristics of South-East Europe and the Black Sea region, as well as the position of the country in the common energy framework of the European Union. Bulgaria's national energy strategy has to be based on the understanding that the energy sector is of vital importance to the national economy. Imports and exports of energy in Bulgaria constitute about 13 % and 21 % of the ingoing and outgoing trade flows respectively. One in four public procurement contracts is connected to the energy sector, which makes it one of the main cost centers for taxpayer money in the country.

BULGARIA'S ENERGY POLICY AND LEGISLATION IN THE CONTEXT OF THE EU ENERGY POLICY FRAMEWORK

In 2013 – 2014 the drive towards common European energy policy deepened. As the Ukrainian crisis aggravated and risks for the EU energy security increased as a result of it, the European Commission tabled a proposal for the creation of a European Energy Union. The European Commission called for a Common Energy Strategy Policy to be adopted. This was the first time when the EC officially admitted that its three main goals of sustainability, competitiveness, and security cannot be achieved at the same time, and as a result priority was given to energy security. This move comes at the backdrop of continuing pressure coming from the European industry for limiting energy price growth in the EU, and the growing discontent in the member states of Southern and Eastern Europe in regard to the high preferential feed-in tariffs for the development of renewable energy sources.

EU energy dependency on imports, especially gas, has been increasing during the last two decades. By 2035 estimates show that 80 % of the gas that Europe uses is expected to come from imports, taking into account no change in EU's position on unconventional gas exploration and development. Most of these

imports are secured through long-term contracts, one third of which are with Russia. Moscow has taken advantage of the lack of a common European policy and market in the best way by negotiating different (and often discriminatory) prices with each European country, depending on its gas supply alternatives and its relationship with the Russian government. In this way, Russia uses gas supply prices as one of its most important foreign policy tools. Ukraine has been the ultimate demonstration of this strategy. The latter was consistently implemented also in Eastern Europe during 2013 – 2014, where countries such as Bulgaria were the main targets due to their extreme dependency on fuel imports (90 % gas imports dependence and 100 % crude oil dependence).

During 2013 – 2014, policy tensions and energy security risks for Bulgaria increased due to the inherent contradictions between the country's EU membership, the declared and the actual implementation of European energy strategies and policies in the country, and Bulgaria's dependence and commitment to Russia-backed large-scale energy infrastructure projects. These contradictions have resulted in some of the worst governance practices in Bulgaria's energy sector, which have led to substantial financial risks for the country:

- The Bulgarian government and the national energy regulator failed in managing the introduction of new renewable energy sources such as sun and wind, which is an EU priority for 2020. During the 2008 – 2009 period state incentives for the development and exploitation of new renewable energy sources were adopted without the existence of adequate regulatory framework. In 2011 – 2012 the government responded to the booming interest in the renewables' investment with administrative and regulatory limitations instead of removing incentives. The latter created the ideal environment for corruption to thrive. All this resulted in BGN 700 million (~EUR 358 million) of unpaid debts by the public provider to renewables producers, and the blocking of further renewables investments in 2014. Even though the boom in renewables in Bulgaria will help the government achieve its commitment to the EU to have 16 % of final energy consumption coming from renewable energy by 2020, the country has paid a high price as it has destroyed public trust and the image of renewables among ordinary Bulgarians.
- In the public space renewable energy has been speculatively presented as the more expensive alternative to new nuclear power capacity, without taking into account the more recent innovations driving technological costs down, and important factors such as time and investment value. As a result of political decisions based on data manipulation for expected future energy consumption, a compromised tender for the construction of a new nuclear power plant (NPP Belene), and many violations (some of which clearly involving corruption) in the early stages of the implementation the NPP Belene project, as of 2014 NEC's debts related to the project have been estimated at BGN 800 million (~EUR 409 million). The project was suspended by the government in 2012, prompting the Russian contractor to bring an arbitrage court claim on the project worth more than EUR 1 billion. Similar to the renewables case, bad governance of the NPP Belene project threatens the future development of nuclear energy in the country and provides Russia with additional leverage in energy talks with Bulgaria. In addition, while focusing on building unnecessary new production capacity, the government has neglected the implementation

of the EU energy efficiency measures although energy efficiency is among the top EU 2020 priorities.

- When it comes to gas imports, in 2014 the Bulgarian government gave an illogical (from the point of view of the country's energy security position) priority to the South Stream project, rather than to the construction of regional interconnectors, or to the implementation of the EU provisions on the gas market liberalization. South Stream has been prioritized despite the ever-increasing risks associated with its implementation, and despite the government's inability to control the main financial parameters of the project. The cost of the Bulgarian section of the project increased three times since its start in 2008 reaching EUR 3.5 billion in 2014. Successive governments have obliged the Bulgarian Energy Holding (BEH) to take specific steps towards the implementation of the project despite the growing tensions between Russia and the EU in Ukraine, the rising debt of the domestic state-owned energy system, and the clear and persistent warnings from the European Commission that the project breaches EU legislation in the area of free competition and energy. BEH has received another loan for the capitalization of the project company and a consortium of companies associated with Russian-Bulgarian oligarchic circles has won the compromised construction tender. Meanwhile, the U.S. has imposed sanctions on the owner of the leading company in the construction consortium, further increasing the risks to the project. The main reasons for the disruption of the most powerful political-oligarchic network in Bulgaria, which threatened the banking and financial stability of the country during the summer of 2014, have been, on the one hand, the pressure coming from the EC and the U.S. for suspension of the project and, on the other, the stubborn insistence of the Bulgarian government to continue working on the South Stream project.
- During 2013 – 2014, the EC has initiated a series of infringement procedures against Bulgaria for failing to implement key EU directives such as the Third Energy Liberalization Package. At this backdrop, the Bulgarian government has introduced more than 10 significant changes in the main energy law in 2014, which have increased the insecurity and volatility of the sector. Arguably the most controversial among these reforms has been the attempt of two Bulgarian MPs to amend the status of the South Stream pipeline project in Bulgaria so as to circumvent the European legislative requirements. It was later discovered that the main project contractor has requested and prepared these particular amendments, which is a flagrant conflict of interest, and raises serious corruption concerns.
- In addition to the legislative insecurity, the Bulgarian energy sector is characterized by a lack of regulatory independence and oversight capacity.

BULGARIA'S ENERGY SECURITY: PERSPECTIVES AND CHALLENGES

According to the *International Index of Energy Security Risks* (IIESR) of the Institute for 21st Century Energy at the U.S. Chamber of Commerce, Bulgaria has been identified as the most vulnerable of all 75 studied economies in regard to energy security in 2014. The IIESR contends that the energy security situation in the country has been deteriorating in the last 10 years, but that the past two years have been

particularly difficult as energy prices have increased and Bulgarian households, being the poorest in the EU, have not been able to adequately satisfy their energy needs. The following factors influence Bulgaria's energy security challenges, and require adequate policy responses for limiting their negative impact:

- High energy poverty rates. At the moment, only approximately one third of Bulgarian households can afford adequate heating in their homes, while more than 60 % still use coal and wood as the main sources of heating. The economic stagnation since 2009 has led to further impoverishment of the most socially vulnerable groups of the population making any increases in electricity prices politically impossible. As a result needed price increases to guarantee the return on long-term investments in coal and renewables have been frozen, hurting investors and confidence in the country. As electricity prices have been kept fixed to curb social pressures, financial imbalances in the energy system have not disappeared but have moved from the state budget to the balances of state-owned enterprises, and will ultimately end up as a burden for the taxpayers.
- Very high energy intensity of the economy, both in the commercial and the household sectors, amplified by large energy losses in the transformation, transportation, distribution, and consumption of power. These losses have reached 50 % of the primary energy supply in Bulgaria, compared to 30% average for Europe. Even though energy efficiency has been constantly increasing during the past decade, the Bulgarian economy remains more energy intensive compared to the average EU level. When high levels of import dependency of non-renewable energy sources is added to the high energy intensity of the economy, the result is inelastic energy expenditures and, thus, significant fluctuations in total energy expenditures. Bulgaria's average annual expenditures for imports of non-renewable energy resources varies between 8 % and 13 % of GDP, which puts the economy under a serious stress when energy prices rise on international markets.
- If the domestic production of low-grade lignite coal is not taken into account, Bulgaria is almost fully dependent on imports of non-renewables. Dependency on gas imports is the highest because the market has not been liberalized, and the country relies on a single supplier and a single pipeline route. This is the main reason why Bulgaria's gas import price is among the highest in Europe. Not surprisingly less than 1 % of the households use gas for heating and cooking. The lack of alternative imports puts the country in an energy dependency trap – because of the high gas prices, the population uses subsidized electricity for heating purposes, practically obliging the government to preserve artificially low electricity prices which, at the same time, results in technological stagnation of the sector.

Having in mind that Bulgaria faces increasing energy security risks, the measures taken by the Bulgarian government could be defined as illogical and incongruous with the priorities listed above. The focus of the state energy policy during the recent years has remained the construction of the South Stream pipeline and the NPP Belene. These projects require substantial public investment and/or guarantees. What is more, they would not diversify energy sources and do not have the potential to lower prices and costs. Valuable experience from the past shows that such strategies lead to serious upward pressure on prices and

widespread public discontent – examples are the long-term contracts of power purchase from TPP Maritsa East 1 and TPP Maritsa East 3, the state guaranteed conditions of TPP Maritsa East 2 and the generous incentives for the development of solar and wind energy. The electricity prices kept artificially low by the government is another state policy implemented during the past 5 years that had led to debt accumulation by state-owned enterprises and to the blocking of the capital investment process, thus having a negative impact on the energy sector. As a result, the process of energy market liberalization has stalled and has put the system in a deadlock where the only possible way out is the usage of corruption practices at the expense of consumers and taxpayers. Corruption channels decrease transparency in the sector and create opportunities for the unregulated incursion of domestic and foreign interests.

GOVERNANCE DEFICITS IN BULGARIAN ENERGY SECTOR AS A SPECIFIC FACTOR OF ENERGY (IN)SECURITY

Apart from the Bulgarian traditional energy security risks, one specific factor has to be taken into account – the management capacity of the sector. The deficits are most visible in the management of state-owned energy companies, the energy sector public procurement, including for the large, state-led energy infrastructure projects.

Management of state-owned energy companies

The financial situation in the energy state-owned enterprises has been deteriorating in the 2012 – 2014 period. There are several key problems associated with that:

- The inner indebtedness of the energy sector;
- The ineffective and not fully transparent company management;
- Heavy political involvement in the decision-making of the state-owned energy enterprises.

The above have undermined the health of the subsidiary companies of the Bulgarian Energy Holding (BEH). Part of the problem consists in the continuing bad practices of administratively controlling energy prices for end-consumers, which creates large amounts of intra-system debt, accumulated on the balance sheets of the state-owned natural gas distributor, Bulgargaz, and the national electricity wholesale supplier, the National Electrical Company (NEC). The financial situation in both companies is extremely bad and practically makes them unable to compete in the liberalized market. They found themselves under bottom-up pressure from their private partners in the added value chain who demand an increase power tariffs and under top-down political and administrative pressure for keeping prices at a certain level. In the gas sector, additional pressure is generated by the de-facto monopoly of supply. Additionally, some state-owned enterprises are involved in large energy infrastructure projects which overload them with enormous financial and managerial commitments.

The lack of transparency in the management of state-owned energy enterprises creates insecurity in regard to the predictability of their cash flows, as it is in the NEC case. The indebtedness of the wholesale power supplier was a serious obstacle to the process of unbundling it from the Electricity System Operator – a condition required by the European Energy Liberalization Package. The separation of these two companies should have been finalized by March 2014, and for which Bulgaria is facing an infringement procedure for a failure to comply with EU regulations.

As a result of the bad governance of the energy sector, and particularly the bad management of NEC, the company has accumulated about BGN 3.5 billion (~EUR 1.8 billion) of debt by the end of 2014. NEC's outstanding debt will continue to grow if electricity prices are maintained at the current low level. NEC's main financial indices show that sooner or later there will be significant pressure on the company's assets, or there will be a need for a state debt guarantee. Adding to these, NEC's poor financial results can be directly attributed to its involvement in massive fraudulent infrastructure projects like NPP Belene and HPP Tsankov Kamak. As per 2014, NEC's long-term debt approximates BGN 627.2 million due to outstanding loans for investment projects realized by NEC, while the financial indicators of the company suggests that merely 4 % of the current expenses are readily payable.

Due to its central position in the electricity market, NEC debts have a significant negative impact on all private and state-owned participants of the system, especially on the profitable ones such as NPP Kozloduy. As a result, the investment activity in the sector has been squeezed. It is often the case that BEH redistributes resources from better performing companies to poor performers which alongside the mandatory prepayment of dividends to the budget (80 % dividend mandatory prepayable to the budget) has drained the coffers of BEH and its companies of liquidity and investments. Winning companies pay most of their profits as dividends to BEH, and these funds are later transferred to the losing companies in the form of loans with low interest rates.

Governance deficits in the sector are not solely related to the financial and regulatory conditions in the system but there are also large human resource deficits in the state-owned enterprises and in the energy regulator as well. The frequent change of the top management of energy companies has predisposed their lack of independence from political influence and has made the corporate strategy very inconsistent, often marked by inadequacies prompting financial and regulatory deficiency in their management.

The independence of the state regulator has also been compromised making the State Energy and Water Regulatory Commission (SEWRC) the victim of constant lobbying activity, political pressure and frequent changes of leadership. Understaffed and under budgeted, the regulator can hardly keep up with the complexity of the power system. It is also exposed to a lot of public pressure and blame for the problems in the sector, while it is not provided with the tools to adequately influence the system.

Public procurement and major projects in the energy sector

The planning and realization of major energy projects are among the areas where private interests have the greatest impact on the energy sector. Bad governance of the energy is a not an isolated case but has been a recurrent phenomenon. There are many apt examples but the most indicative have been: HPP Tsankov Kamak, NPP Belene and the South Stream pipeline. There are several characteristics of bad governance during the management of such projects:

- Lack of justification for the realization of the proposed projects, including the prioritized national and European strategic goals, based on governance models of decision-making, rather than on the practical goals stated in national documents.
- Data manipulation in order to justify the need for realization of the project without any cost-benefit analysis of alternatives or the study of other spheres where planned public funds could be invested.
- It is often the case that the start of some projects has been only the result of political decisions, which are not based on any analytical and administrative preparation. When the particular project is then passed on to the lower hierarchical levels, it usually cannot comply with regulatory requirements. Decision about the start of major projects, which could lead to long-term financial debts that have to be paid later on by the taxpayers, are often taken without any political consensus.
- The EPC contractors of major projects have been chosen prior to the contractor selection procedure, which makes these procedures unlawful and non-transparent. Usually these contractors are somehow connected to the political-oligarchic circles of the country and thus their selection is guaranteed.
- The financial parameters of the projects are often not clear and it is far from certain to what extent public finance may be used and whether there will be state guarantees and state forfeit in case of failure. It is an unwritten law that projects are advertised on their lowest contractual price, which is done in order to mislead the wide public, even though in reality these projects would cost a lot more.
- There are aggressive local consultants who have direct, unauthorized and non-transparent access to the main political and administrative factors, who in this way could influence the decision-making process of large infrastructure projects.
- There is lack of clear structure for project planning with established particular obligations and control mechanisms and proofreading of discrepancies.
- Project costs are often multiplied without objective reasoning during the initial stages, and later on during the implementation phase. For example, the final cost of the HPP Tsankov Kamak project was 3 times higher than initially contracted. The situation with the South Stream project was the same, as costs have gradually tripled over the course of the negotiation stages.
- In 2014, the audit results for the implementation of the three projects – NPP Belene, HPP Tsankov Kamak and South Stream pipeline, showed that there is still BGN 1.7 billion of outstanding debt without taking in consideration direct engagements of more than BGN 1 billion and indirect ones at more than BGN 2.4 billion. There is also the potential risk of court ruling sanctions amounting to BGN 2 billion, which will be imposed on BEH for failing to implement a contract agreement for the construction of the NPP Belene.

> Thus state-owned companies would potentially have to pay back more than BGN 7 billion in debt if 2 out of the 3 projects mentioned above are implemented, and this is not the worst-case scenario. In comparison, Bulgarian average annual health care expenses are two times lower, while the average annual education expenses – three times lower.

Public procurement is the main area where corruption practices thrive and state energy policy is captured by private interests. The energy sector is one of the two largest public procurers in Bulgaria. Due to its technical specialization, limited number of available experts and the direct link between the energy sector and the national security, the energy entities often avoid competitive public procurement procedures. Ambiguity in the public procurement of the Bulgarian energy sector is due to several key factors: the presence of specific access criteria and safety of energy production facilities (nuclear safety in particular); the effective technological monopoly of a limited number of providers at the micro level; the ambiguous legal nature of energy export contracts; the lack of an effective internal financial audit; the lack of monitoring and control by the authorized bodies in terms of public procurement effectiveness. About 40 % of all public procurement contracts have not gone through any competitive procedures. However, nowadays the number of competitive procedures has been consistently rising, especially in the energy sector, and this is arguably the result of an increased public control and intolerance towards corruption practices, as well as of the improved work of the Public Procurement Agency and the Public Financial Inspection Agency.

CONCLUSION AND POLICY RECOMMENDATIONS

This report shows the continued lack of transparency and good governance of Bulgaria's energy sector during the 2011 – 2014 period. It illustrates the main structural and governance problems in the energy sector and in the country's energy security in particular. The report concludes that there is lack of vision and strategic thinking in solving structural and governance problems related to the energy security of the country. Instead, the continuous failed attempts for countering long-term energy risks faced by the country lead to anti-social energy policy caused by political corruption and the state capture by private interests. State energy policy is ambiguous when it comes to national characteristics, regional specifics of South-Eastern Europe and countries of the Black Sea region, as well as the Bulgarian position in the EU energy strategy. Inconsistent decision-making impedes the adequate realization of national priorities and the sustainable development of the energy sector. This raises questions on the motivation of the Bulgarian government in dealing with both the problems faced by the sector and the danger of pursuing third-party's interests and speculative rent-seeking intentions at the expense of the public interest.

In order to improve the Bulgarian energy sector governance and the functioning of state-owned energy enterprises, several key measures have to be taken:

- The political elite has to intervene less in the current governance of state-owned energy enterprises. Instead, it must develop policies, and provide access

to information and exercise effective strategic control over the activities and the decision-making of the energy enterprises.

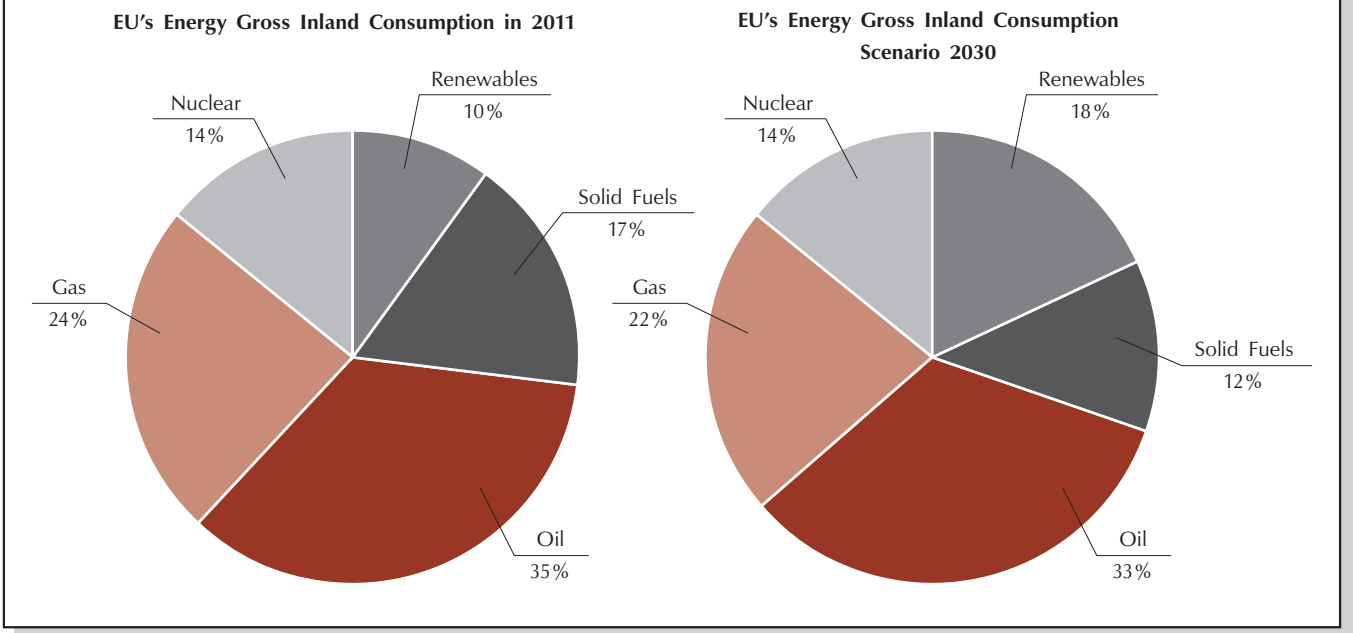
- In order to align the national energy policy with EU objectives, the country must change its focus from aspirations to develop new production power to ensuring the security and stability of energy imports, reducing energy poverty and improving energy effectiveness.
- Mandatory standards for corporate governance of state-owned energy enterprises must be adopted. They should correspond to the best international principles, such as *Guides for Corporate Governance of State-owned Enterprises* of the Organization for Economic Cooperation and Development.
- Changing the focus with the help of state subsidies and guarantees from adopting confrontational and punitive measures, which have negative influence on enterprises to measures that are developed as a result of dialogue with businesses and have positive social effects. For example, the funds collected though the 20 % taxation on the profit of producers of renewable energy since January 2014 should be used for financing developing programs in the renewable energy sector, programs that would have positive effects for all participants and would assist the technological advance, research, innovations, etc. These funds should not be used to transfer financial resources to the state-owned companies or the state budget.
- All options for encouraging research of potential unconventional gas development must be taken into consideration if they correspond to EU's ecological standards and are controlled in the right manner. Research for conventional gas in the Black Sea must be supported.
- Bulgarian government should call for an external and independent annual review of energy policies.
- Long-term strategy should be implemented in order to push through gasification and energy efficiency improvements in residential buildings, which together with the diversification of natural gas sources could relieve social tensions in the process of price formation in the electricity and gas market.
- Large investment projects have to be preselected and given priority only after clear and transparent procedures and analyses of facts, corresponding with EU goals.
- Full transparency has to be ensured by the Commission for Protection of Competition and the Bulgarian administrative courts when cartel practices are being investigated at the fuel, natural gas and electricity markets.
- The State Energy and Water Regulatory Commission has to be stabilized and developed in terms of independency from political and economic interests and in terms of transparency and reporting its activities to both the National Assembly and the public.
- Consensus must be reached when it comes to long-term priorities in the energy sector and their implementation in the national energy strategy, which in turn has to be approved by main political parties in the country if it corresponds to major EU goals. The Third Liberalization Package has to be implemented as soon as possible in terms of regulatory changes and changes in activities of regulatory bodies and regulated subjects.

1. STRATEGIC POLICY FRAMEWORK ON EU LEVEL: CHALLENGES AND GOALS

1.1. IMPORTANCE OF THE COMMON FRAMEWORK

The efficiency of common energy policy in the EU is naturally undermined by geographic, economic and political distinctions between countries. EU's energy policy is an area where compliance to common EU rules is particularly challenging for member states (MSs) as energy sector management is directly related to the level of economic competitiveness of each country. MSs have very different energy mixes. On average in 2011, the total energy needs of the EU, in terms of gross inland consumption, were covered by the following sources: 35 % oil, 24 % gas, 17 % solid fuels such as coal, 14 % nuclear power, 10 % renewable sources such as hydropower, solar or wind energy (Figure 1).[1] This mix varies widely across countries and evolves over time as a result of their geographical conditions, such as the

Figure 1. EU's Energy Gross Inland Consumption – Facts and Forecast



Source: European Commission.

[1] European Commission, "Energy challenges and policy", Commission contribution to the European Council of 22 May, 2013.

availability and access to natural resources, national policy choices (e.g. the decision to make use or not of nuclear power, allow shale fracking, participate in different international projects, etc.), changing financial incentives, progress in technologies, decarbonisation requirements and the development of the internal market.

In spite of differences, **EU MSs have three common policy objectives**: reducing energy costs for households and businesses **("competitiveness"),** ensuring a reliable and uninterruptable supply of energy **("security of supply")** and limiting the negative environmental impact of energy production, transport and use **("sustainability")**.[2] That is why three headline targets to be achieved by 2020 were agreed by Heads of State or Government (often referred to as "20 20 20 by 2020"): "to reduce CO_2 emissions by 20 % compared to 1990 levels, to raise the share of renewable sources as part of the overall EU energy mix to 20 % and to increase energy efficiency by 20 %".[3] These goals are also at the core of the Europe 2020 strategy for smart, sustainable and inclusive growth.[4]

The 2020 Revision: The 2050 Roadmaps and the 2020 and 2030 Frameworks for Climate and Energy Policies

On January 22, 2014, the Europe 2020 strategy has been revised to extend implementation phases and update goals for competitiveness, security of supply and sustainability. The EC has published its proposals for an energy and climate policy framework for 2030, setting goals for "a competitive, secure and low-carbon EU economy". They include a 40 % reduction in greenhouse gas (GHG) emissions below the 1990 level, an EU-wide binding target for renewable energy of at least 27 %, and a mechanism to improve the robustness of the EU emissions trading system (ETS). The framework builds on the existing climate and energy package of targets for 2020 as well as the Commission's 2050 roadmaps for energy and for a low-carbon economy. These documents reflect the EU's goal of reducing greenhouse gas emissions by 80-95 % below 1990 levels by 2050.

A common legislative framework is also in place to deepen and unify the European energy market through the development of infrastructure interconnections, safeguards to secure supply of gas and electricity, consumer rights and a level-playing field for competition and supervision among energy actors. EU legislation has been put in place to promote the use of renewable energy sources (RES),[5] to strengthen efforts on energy efficiency[6] and to ensure the safe exploitation of offshore oil and gas.[7] A number of these instruments are yet to be implemented by MSs; nevertheless, sufficient progress has been achieved in recent years. Among all, between 1990 and 2011 the total greenhouse gas emissions fell by 16.9 %.[8]

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2 Ibid.

3 European Commission, Europe 2020 portal, accessed from http://ec.europa.eu/europe2020/index_en.htm

4 European Commission, "Europe 2020. A strategy for smart, sustainable and inclusive growth", accessed from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

5 *Directive 2009/28/EC on the promotion of the use of energy from renewable sources.*

6 *Directive 2012/27/EU on energy efficiency.*

7 *Directive 2013/30/EU on safety of offshore oil and gas operations.*

8 European Commission, EU greenhouse gas emissions and targets, http://ec.europa.eu/clima/policies/g-gas/index_en.htm

Table 1. Implementation of the Renewable Energy Directive (as per the 2020 target)

Member State	2005 RES Share	2010 RES Share	1st Interim Target	2020 RES Target
Austria	23.3 %	30.1 %	25.4 %	34 %
Belgium	2.2 %	5.4 %	4.4 %	13 %
Bulgaria	9.4 %	13.8 %	10.7 %	16 %
Cyprus	2.9 %	5.7 %	4.9 %	13 %
Czech Republic	6.1 %	9.4 %	7.5 %	13 %
Germany	5.8 %	11 %	8.2 %	18 %
Denmark	17 %	22.2 %	19.6 %	30 %
Estonia	18 %	24.3 %	19.4 %	25 %
Greece	6.9 %	9.7 %	9.1 %	18 %
Spain	8.7 %	13.8 %	10.9 %	20 %
Finland	28.5 %	33.0 %	30.4 %	38 %
France	10.3 %	13.5 %	12.8 %	23 %
Hungary	4.3 %	8.8 %	6 %	13 %
Ireland	3.1 %	5.8 %	5.7 %	16 %
Italy	5.2 %	10.4 %	7.6 %	17 %
Lithuania	15 %	19.7 %	16.6 %	23 %
Luxemburg	0.9 %	3 %	2.9 %	11 %
Latvia	32.6 %	32.6 %	34 %	40 %
Malta	0 %	0.4 %	2 %	10 %
Netherlands	2.4 %	3.8 %	4.7 %	14 %
Poland	7.2 %	9.5 %	8.8 %	15 %
Portugal	20.5 %	24.6 %	22.6 %	31 %
Romania	17.8 %	23.6 %	19 %	24 %
Sweden	39.8 %	49.1 %	41.6 %	49 %
Slovenia	16 %	19.9 %	17.8 %	25 %
Slovakia	6.7 %	9.8 %	8.2 %	14 %
UK	1.3 %	3.3 %	4 %	15 %
EU	8.5 %	12.7 %	10.7 %	20 %

>2 % above interim target	<1 % from or <2 % above interim target	>1 % below interim target<

Source: European Commission.

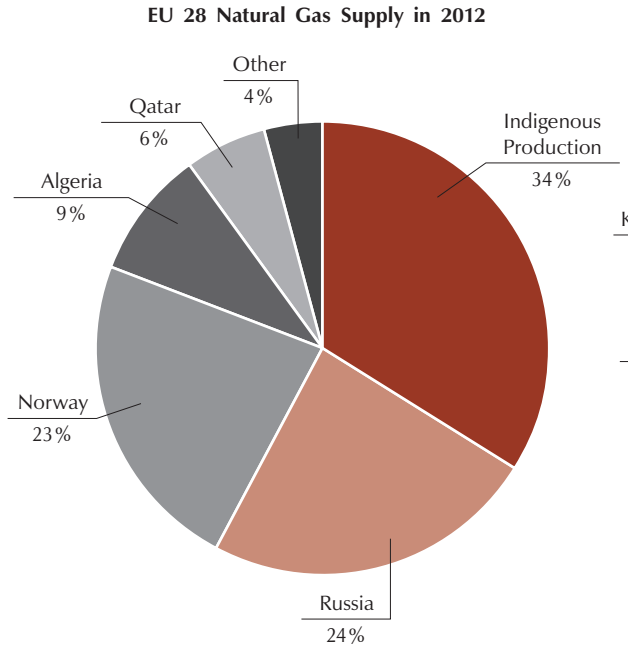
1.2. EU STRATEGIC ENVIRONMENT: MAIN CHALLENGES

1.2.1. Europe is Increasingly Dependent on Importing Energy from Third Countries

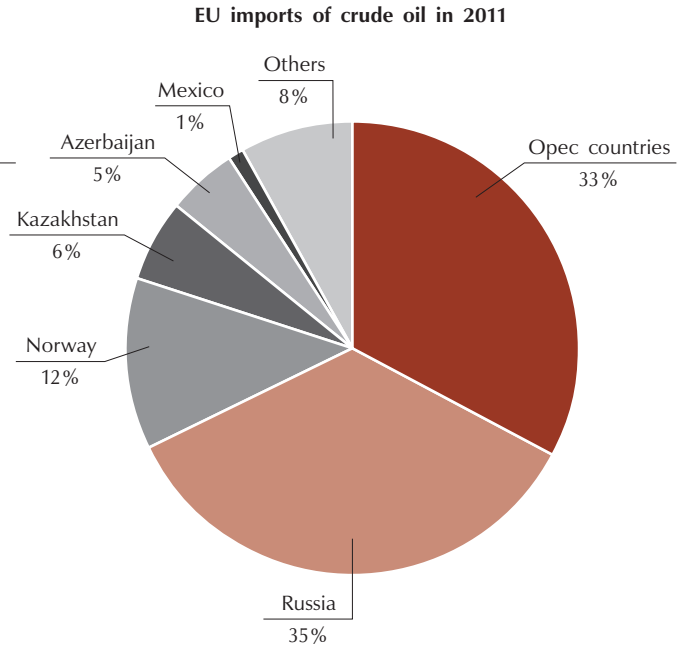
Europe's import dependence has increased in the last two decades and is set to grow to more than 80 % in the case of oil and gas by 2035.[9] Some MSs rely on one single supplier (Russia) and often on one single supply route for 80 % – 100 % of their gas consumption. This creates the exposure risks in a market dominance situation, where price setting may not always follow a market rationale (Figure 2).

MSs with a diversified gas supply portfolio and with well-developed gas markets reap the benefit by paying less for imports. On average the estimated border prices for gas imports to the UK, Germany and Belgium are well below (by about 35 %) the estimated border prices for gas imports to countries that rely on a limited number of suppliers like Bulgaria and Lithuania.[10] Bulgaria is

Figure 2. EU-28 Crude Oil and Natural Gas Supply



Source: Eurogas.



Source: European Commission.

[9] European Commission, "Europe 2020. A strategy for smart, sustainable and inclusive growth", accessed from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

[10] Ibid.

dependent on imports of natural gas for close to 90 % of its consumption and 100 % of its crude oil demand. At the same time, the government of Bulgaria has done little to nothing to improve the security of its energy supply by fostering diversified sources of gas and by investing in regional interconnectors and gas storage facilities.

1.2.2. Unsystematic Policy Choices on National Level Leading to Higher Utility Prices

Energy bills for consumers are rising and account for a growing share of the average expenditure of households, including personal transport, varying between 7 % and 17 % across MSs.[11] According to the EC, poorer parts of the population are faced with energy expenditures of 22 % of total expenditure in some MSs.[12] Household expenditure on energy, taxation and levies included, is expected to rise further even if all possible gains from completing the internal energy market are taken into account.[13] The striking fact is that retail prices go up when wholesale prices and imports go down – oil has remained in the range of 100 USD per barrel over the last 5 years and gas prices have gone down from 550 USD to 380 on average in the EU per 1000 m^3, indicating that **energy bills rise because of imprecise government intervention not because of the markets**. This is in part due to a number of external factors such as the pressures of rising global demand on resources, ageing population, domestic product effects and difficulties in maintaining increasingly sophisticated infrastructure. However, energy prices are also to a large extent the result of MSs' decisions on tariffs, levies (including subsidization fees) and taxes. Taxes, subsidies and levies represent a very substantial (growing) part of the final price for domestic consumers across the continent. In some MSs, such as Denmark, "taxes and levies for some categories of electricity and gas consumers constitute up to 50 % of the final energy bill."[14]

1.2.3. Investments in the Energy Sector at Historical Low: Increasing Risks, Decreasing Returns

According to the EC's 2050 low-carbon and energy roadmaps, the transition to secure, competitive low-carbon energy requires sustained high levels of investment in power equipment, grids, transport technologies, infrastructure and efficient buildings.[15] This increased investment is estimated to be equivalent to 1.5 % of the Gross Domestic Product (GDP) on an annual basis over the period until 2050.[16] **By 2020, an investment of around EUR 1 trillion will be needed**

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[11] Ibid.

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] European Commission, DG Energy, "Key Figures", June 2011, accessed from http://ec.europa.eu/energy/observatory/countries/doc/key_figures.pdf

[16] Ibid.

in the EU to ensure security of supply, diversification of sources, cleaner energies and competitive prices within an integrated energy market.[17] This is particularly important for some MSs such as Bulgaria that still find themselves on an "energy island" as a result of insufficient infrastructure connections with the rest of the EU, as single-source gas import dependence still prevails in parts of Eastern Europe.

1.3. EU ENERGY POLICY LEGISLATION: ISSUES OF COMPLIANCE ON NATIONAL LEVEL

The focus of the EU's energy legislature in the last few years has been on energy efficiency. The Commission has also introduced rules on the management of spent fuel,[18] securing the supply of energy,[19] including securing stocks of crude oil and petroleum products,[20] and some other energy market regulations.[21] The majority of other regulations (e.g., on renewable energy,[22] nuclear energy,[23] the internal energy market,[24] etc.) were already developed by 2009 and the deadlines for their transposition into national legislation ran up to 2011.

One of the main policy initiatives by the EU – the *Regulation (EU) No 347/2013* of the European Parliament and of the Council of 17 April 2013 on **guidelines for trans-European energy infrastructure** created guidelines for the timely development and interoperability of priority corridors and areas of trans-European energy infrastructure.[25] The main features of this Regulation are setting criteria for the identification of projects of common interest, necessary to implement priority corridors and energy infrastructures,[26] and criteria for granting them European

[17] European Commission, "Europe 2020. A strategy for smart, sustainable and inclusive growth", accessed from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

[18] Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radio active waste, and COM(2011) 518 Proposal for a Council Regulation of 30 August 2011 establishing a Community system for registration of carriers of radio active materials, (19.07.2011).

[19] COM(2011)539: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on security of energy supply and international cooperation – "The EU Energy Policy: Engaging with Partners beyond Our Borders", (07.09.2011).

[20] To mitigate a possible supply crisis, the EU has revised the oil stock holding system in line with International Energy Agency (IEA) rules – *Council Directive 2009/119/EC* imposing an obligation on MSs to maintain minimum stocks of crude oil and/or petroleum products, (14.09.2009). The deadline for transposition of the revised Directive is the end of 2012.

[21] *Regulation (EU) No 1227/2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency,* (25.10.2011).

[22] *Directive 2009/28/EC amended and subsequently repealed Directives 2001/77/EC and 2003/30/EC.*

[23] *Council Directive 2009/71/Euroatom establishing a Community framework for the nuclear safety of nuclear installations.*

[24] *Directive 2009/72/EC concerning common rules for the internal market in electricity.*

[25] Preamble (16), *Regulation (EU) No 1227/2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency,* (25.10.2011).

[26] Ibid., Articles 3, 4.

funding,[27] providing these projects with a priority position with regard to permit granting. **Bulgaria is one of the priority destinations for EU energy infrastructure funding** as its key geographic position predisposes its role of promoter of alternative energy supply in the EU from the Caspian basin and the Middle East. So far the Bulgarian governments have failed to take advantage of the EU funding, and have stalled the strategic interconnector projects with Romania, Turkey and Greece. The result has been that the country remains one of the most dependent countries in the EU on a single source of natural gas and crude oil supply.

Infringement Procedures

Since 2011, the EC has started a number of infringement procedures against separate countries for a failure to fully transpose EU rules into their national legislation (Table 2). In 2013, a number of cases of non-compliance to EU energy guidelines were observed in adopting common European rules on energy performance of buildings, renewable energy, internal market in gas and electricity, and securing stocks of crude oil and petroleum products.[28] Court action (court referrals) was taken against Bulgaria, Estonia, the United Kingdom[29] and subsequently Poland[30] for failing to fully transpose EU rules in internal energy market, while action against Austria was taken for failing to transpose the Renewable Energy Directive[31] (Table 2).

Table 2. Infringement Procedures for Failure of National Transposition Measures – (as per December 2013)

		INFRINGEMENT PROCEDURE STEP								
		2009/28: renewable energy	2009/125: eco-design requirements	2010/30: labeling standards	2009/71: nuclear safety	2009/72: common ules for the internal market in electricity	2009/73: common rules for the internal market in gas	2010/31: energy performance of buildings	2009/119 (revised): securing stocks of crude oil and/or petroleum products	Total Infringement Procedures 2010 – 2013
AT	LFN	X				X		X		
	RO	X				X		X		**3**
	CJEU	X								
BE	LFN	X						X	X	
	RO	X						X	X	**3**
	CJEU									
BG	LFN	X				X	X	X	X	
	RO	X				X	X	X		**5**
	CJEU					X	X			

[27] Ibid., Articles 14-16.

[28] Ibid.

[29] European Commission, Press Release IP/13/42, Internal energy market: Commission refers Bulgaria, Estonia and the United Kingdom to Court for failing to fully transpose EU rules, accessed from http://europa.eu/rapid/press-release_IP-13-42_en.htm

[30] European Commission, Press Release IP/13/580, Internal gas market: the Commission takes Poland to Court over regulated gas prices for business consumers, accessed from http://europa.eu/rapid/press-release_IP-13-580_en.htm

[31] European Commission, Press Release IP/13/1113, Renewable Energy: Commission refers Austria to Court for failing to transpose EU rules, accessed from http://europa.eu/rapid/press-release_IP-13-1113_en.htm

Table 2. Infringement Procedures for Failure of National Transposition Measures – (as per December 2013) (Continued)

		INFRINGEMENT PROCEDURE STEP								
		2009/28: renewable energy	2009/125: eco-design requirements	2010/30: labeling standards	2009/71: nuclear safety	2009/72: common ules for the internal market in electricity	2009/73: common rules for the internal market in gas	2010/31: energy performance of buildings	2009/119 (revised): securing stocks of crude oil and/or petroleum products	Total Infringement Procedures 2010 – 2013
CY	LFN	X		X		X	X	X	X	**6**
	RO	X		X		X	X	X	X	
	CJEU	X								
CZ	LFN	X		X				X	X	**4**
	RO	X		X				X	X	
	CJEU									
DE	LFN							X		**1**
	RO							X		
	CJEU									
EE	LFN	X				X	X	X		**4**
	RO	X				X	X	X		
	CJEU					X	X			
EL	LFN	X			X			X	X	**4**
	RO	X			X			X		
	CJEU									
ES	LFN	X				X	X	X	X	**5**
	RO	X				X	X	X		
	CJEU									
FI	LFN	X				X	X	X		**4**
	RO	X				X	X	X		
	CJEU					X	X			
FR	LFN	X					X	X		**3**
	RO	X					X	X		
	CJEU									
HU	LFN	X						X	X	**3**
	RO	X						X		
	CJEU									
IE	LFN	X				X	X			**3**
	RO	X				X	X			
	CJEU									
IT	LFN	X		X		X		X		**4**
	RO	X		X		X		X		
	CJEU									
LT	LFN					X	X	X	X	**4**
	RO					X	X	X		
	CJEU									
LU	LFN	X				X	X	X	X	**5**
	RO	X				X	X	X		
	CJEU									
LV	LFN	X						X	X	**3**
	RO	X						X		
	CJEU									
MT	LFN	X						X	X	**3**
	RO	X						X		
	CJEU									
NL	LFN	X				X	X	X	X	**5**
	RO	X				X	X	X		
	CJEU									

Table 2. Infringement Procedures for Failure of National Transposition Measures – (as per December 2013) (Continued)

		INFRINGEMENT PROCEDURE STEP								
		2009/28: renewable energy	2009/125: eco-design requirements	2010/30: labeling standards	2009/71: nuclear safety	2009/72: common ules for the internal market in electricity	2009/73: common rules for the internal market in gas	2010/31: energy performance of buildings	2009/119 (revised): securing stocks of crude oil and/or petroleum products	Total Infringement Procedures 2010 – 2013
PL	LFN	X		X	X	X	X	X	X	
	RO	X		X	X	X	X	X		**7**
	CJEU	X				X	X			
PT	LFN				X		X	X	X	
	RO				X		X	X	X	**4**
	CJEU							X		
RO	LFN			X		X	X	X	X	
	RO			X		X	X	X	X	**5**
	CJEU					X	X			
SE	LFN					X	X			
	RO					X	X			**2**
	CJEU									
SI	LFN	X	X			X	X	X	X	
	RO	X	X			X	X	X		**6**
	CJEU					X	X			
SK	LFN					X	X	X		
	RO					X	X			**3**
	CJEU									
UK	LFN					X	X	X	X	
	RO					X	X	X		**4**
	CJEU					X	X			

LFN – letter of formal notice RO – reasoned opinion CJEU – referral to CJEU

Source: European Commission (http://ec.europa.eu/energy/infringements/index_en.htm, accessed on 6 December 2013).

Infringement Procedures against Bulgaria

Bulgaria is among the countries facing intensified penalizing action from the EU in the area of energy guidelines compliance. At the beginning of 2013, Bulgaria was taken to the Court of Justice of the European Union on the basis of a few referrals: one for a failure to transpose the EU Gas Directive, another one for the Electricity Directive, and one for antitrust proceedings in relation to digital broadcasting. Together with Estonia and the UK, Bulgaria was deemed to have transposed only partially the Union's rules for the internal energy markets in gas and electricity. The aim of these regulations is the creation of a common European market for gas and electricity by 2014, as described in the "third internal energy market package". The package outlines key provisions necessary for the proper functioning of the European markets in energy (incl. unbundling of networks, ensuring the independence of national regulators and delimiting their authority, rules to enable the functioning of retail markets for consumers, etc.). These and other provisions were to be fully integrated into the national legislation of all MSs by March 2011. Failure to do so, as per January 2013, referred Bulgaria, Estonia, and the UK to the Court of Justice and threatens the three countries with a daily

financial penalty in the amount of EUR 5,065. **Bulgaria is mandated to fully comply with the liberalization directives by June 2014.** In addition, Bulgaria was presented with the Commission's reasoned opinions (a step preceding referrals to the Court of Justice) on the country's **persistent record of poor air quality** (especially as regards Sulfur Dioxide and Nitrogen Oxide emissions, as well as dust) and questioned Bulgaria's progress on implementing specific measures to increase the energy efficiency of buildings in the country. Such measures include: establishing and applying requirements for the energy performance of buildings (both new and existing), implementing regular inspections of systems (e.g. heating and cooling), completing a process of energy performance certification of all buildings, and putting in place regulations so as to ensure that by 2021 all new buildings are "nearly zero-energy buildings", etc.

1.4. BULGARIAN ENERGY POLICY LEGISLATION: REACTIVE RATHER THAN PROACTIVE

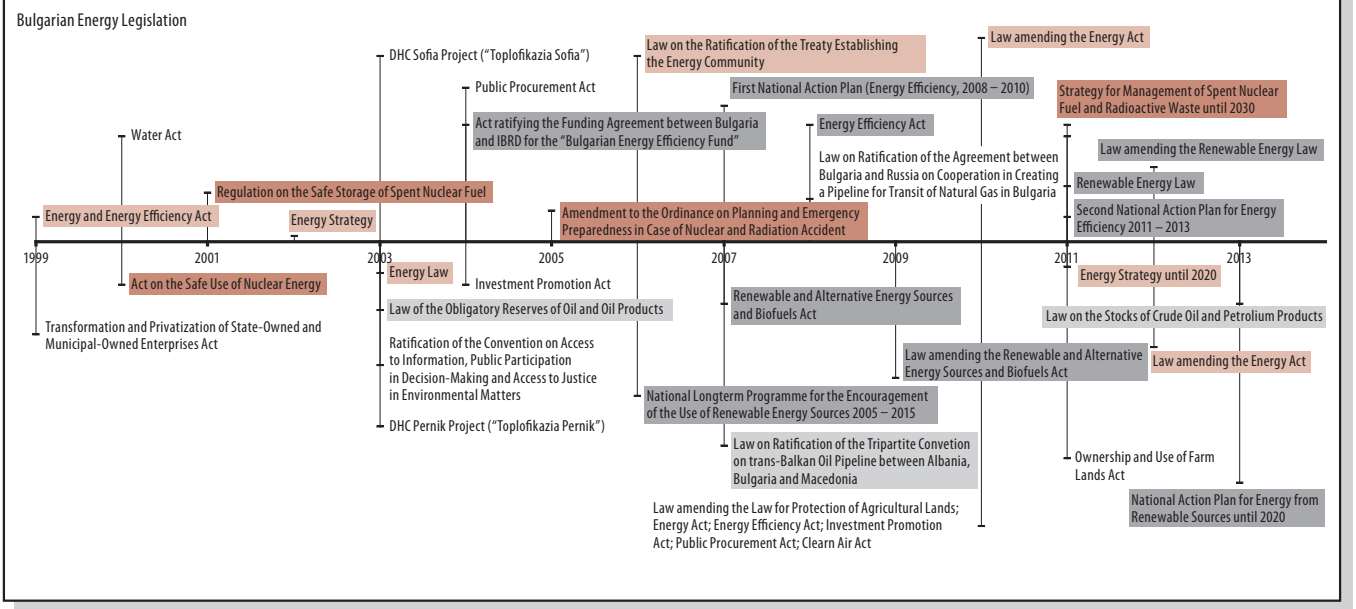
An evident characteristic of Bulgarian energy policymaking is it's short-term, and often ad-hoc nature.[32] Systematic failure to realize national strategy for development of the sector highlights governance incapacity that has been very often the result of state capture by corporate interests. In addition, with energy affordability issues being a prime social concern, extreme populism has blurred effective policymaking in the energy sector in Bulgaria and a sequence of reversing decisions and previously set goals was observed, especially in 2013 – 2014. As a whole, this has led to subprime policymaking and particularly low levels of predictability and investment security. In terms of EU's energy law compliance, the country retains its traditional position of a follower, rather than a forerunner, of the EU energy policy discourse. The introduction of energy efficiency measures via public programs and schemes was sustained throughout the period, as was the rhetoric on energy efficiency; yet, these schemes remain underutilized due to a number of market and non-market barriers. Main changes came as a reaction to social pressure, following the rising electricity prices during the period.

Particular volatility of legislative activity in the energy sector was witnessed in the 2012 – 2014 period. This has been particularly the case after the energy prices hike at the beginning of 2013 led to anti-government protests and eventually the ousting of the government. In the immediate aftermath, some emergency measures were taken in order to alleviate the social burden of energy poverty on the most vulnerable groups of Bulgaria's population, while a number of ad-hoc changes were also introduced in the course of the year. The main legislative changes for the 2011 – 2014 period in the energy sector include:

- Changes in the *Energy Law* (promulgated on 9 December 2003) in 2012 – 2013 period:
  - 18 May 2012;
  - 17 July 2012;

[32] CSD, (2011), "Energy and good governance in Bulgaria. Trends and Policy Options".

Figure 3. Roadmap of the Existing Legal Framework Governing the Energy Sector in Bulgaria



Source: CSD.

  - 26 October 2012;
  - 15 February 2013;
  - 28 February 2013;
  - 8 March 2013;
  - 5 July 2013;
  - 26 July 2013.
- Changes in the *Energy Efficiency Law* (promulgated on 14 November 2011) in 2012 – 2013 period:
  - 18 May 2012;
  - 17 July 2012;
  - 15 February 2013;
  - 12 March 2013;
  - 5 July 2013;
  - 26 July 2013;
  - 4 April 2014 – The Bulgarian parliament passed at first reading an amendment to the *Energy Law* eliminating the validity of the rules of the EU internal gas market for a newly defined "maritime gas pipeline" enabling the construction of the onshore part in Bulgaria of the South Stream Black Sea subsea section.
- Changes in the *Renewable Energy Law* (promulgated on 3 May 2011) in 2012 – 2013 period:
  - 10 April 2012;
  - 17 July 2012;
  - 15 February 2013;
  - 5 July 2013;
  - 2 August 2013;
  - 1 January 2014.

  - The parliament voted a new tax of 20 % on the revenue of renewable energy producers from January 1st, 2014. In addition, the SEWRC decided to impose an access fee equal to EUR 1.35 per megawatt (MW) for renewables to the network of the Transmission System Operator (TSO).

- Promulgation of the *Preserving Oil and Oil Products Law* (promulgated on 15 February 2013).

Major U-turns in Energy Sector Legislation

There were eight changes in the main energy law for the 2012 – 2014 period, indicating major shortfalls in strategic policymaking, predictability and sustainable development of Bulgaria's energy sector. Additionally there have been three changes in the electricity price for final consumers for the period. Some of the legal changes constitute legislative U-turns as they directly reverse previously set laws and proclaimed goals. With the changes in the *Energy Law* as of 17 July 2012,[33] EU's Third Liberalization Package requirements for liberalizing the natural gas and electricity markets were adopted as part of national legislation, including increasing the powers of the regulator SEWRC. On 28 February 2013,[34] in the aftermath of the social crisis that occurred as a backlash to high electricity bills in January 2013, changes in the *Energy Law* were promulgated, that provided ample opportunities for political influence and in fact **unleashed state regulatory intervention at the expense of SEWRC's independent discretion**. A Public Council supervising the work of SEWRC was created along with a new rule about setting electricity prices for the regulated market more than once per year (practically unlimited), as opposed to the power given with the establishment of SEWRC to set prices only once per year. New emergency measures were introduced during the Caretaker government in the period between March 2013 and May 2013. These measures mainly focused on developing a new approach to energy sector management, including changes in the price formation model and temporary alleviation of electricity price burden through limiting consumption of renewable energy and co-generation production, and reducing "cold reserves" capacity. On 5 July 2013,[35] another major redrawing of the main energy law was adopted, formulating another approach change to regulated electricity price formation, leading to a 5 % reduction in prices. The reasoning behind the legislative change could be summarized as follows:

- reviewing the existing rules on feed-in tariffs in order to ensure that they are not economically unjustified, discriminative, and obstructive to electricity export;
- removing 'green' and 'brown' surcharge (feed-in subsidies) on the export price of electricity;
- reviewing the level of "cold reserves" in order to avoid unnecessary redundancy of capacity, obliging the network operator ESO EAD to buy all cold reserve necessary through open and transparent tendering procedures;

[33] Bulgaria, State Gazette, Issue 17, July, 2012.

[34] Bulgaria, State Gazette, Issue 28, February, 2013.

[35] Bulgaria, State Gazette, Issue 5, July, 2013.

- limiting volumes of electricity production in cases of overproduction;
- introducing efficiency monitoring for electricity production of CHP cogeneration as per energy efficiency criteria in national and EU legislation;
- liberalizing the sale of greenhouse emissions allowances in order to subsidize the electricity producers and increase energy market liquidity.

The legal changes represented the third consecutive price formation model modification and accordingly price update in less than 12 months, following the changes from July 2012 and the changes prepared by the Caretaker government in the spring of 2013. As proclaimed by the government, the July 2013 changes targeted reduction of household prices and an increase in market liquidity through export facilitation; however, it has been severely criticized for failing to address a number of existing issues while creating other problems, including but not limited to:

- assuming unrealistic revenues of BGN 498 m from the sale of CO_2 emissions for 2013, while most optimistic projections show BGN 135 m – BGN 150 m per year;
- wholesale price reduction of Kozloduy NPP power, at the expense of its investment program execution (decapitalization);
- continued subsidization of non-efficient CHP co-generation plants (in particular Brikel Thermal Power Plant (TPP) and Bobov Dol TPP);
- occurrence of two types of revenue streams (one for produced electricity and one for availability) for the electricity produced by TPP AES Galabovo (Maritsa East 1) and Contour Global (Maritsa East 3) TPP; the guidelines allow for the electricity produced by these two plants to be once paid by the state due to a 82 % – 85 % mandatory state purchase quota and then purchased by CHP plants and re-sold through CHP feed-in tariffs.

Box 1. Evolution of the Role of SEWRC According to the Sequence of Legal Changes

Changes in the *Energy Law* (promulgated on 9 December 2003) in 2012 – 2013 period:

18 May 2012 /State Gazette, Issue 38*/:

- Staff and inventory expenditures of the SEWRC are limited.

17 July 2012 /State Gazette, Issue 54/:

- Amendments made in regard to the responsibilities and competences of SEWRC, calling for closer international and EU cooperation, implementation and compliance with EU law and boosting Bulgaria's energy market competitiveness. Additionally, in order to stimulate regulatory independence, change is made according to which the term of SEWRC's chairman would be changed every 2.5 years.** However, clauses allowing for direct government appointments are also introduced.***

Box 1. Evolution of Role of SEWRC According to the Sequence of Legal Changes (Continued)

28 February 2013 /State Gazette Issue 20****/:

- The new Article 31a allows SEWRC to **change the electricity prices** by (1) altering the availability and quantity of electricity regulated by the public supplier, taking into account the energy balance, and aiming at providing maximal protection to the interest of the end consumers, while balancing them with the interest of the energy enterprises, (2) changing the size of technological expenditures of the energy enterprises in production, transport and distribution of energy by determining their target values, and (3) altering other price-formation elements.

5 July 2013 /State Gazette Issue 59*****/

- SEWRC is allowed to determine, for each pricing period, the maximum value of the expenses of the energy network operator for buying availability of cold reserve through a public tender procedure. Additionally, instead of creating and controlling the conditions and rules for electricity, thermal energy and gas supply to consumers, it now accepts and controls the application of the **methodology of price setting** of the last resort distributor. The Commission is also given the power to determine the availability of energy to the producers for production of energy, from whom the public distributor is to buy the energy, as well as the quantity of energy, with which the public distributor to make contracts with the end suppliers. Additionally, guaranteeing **end-consumer protection** and a **balance between production and demand** of energy in the internal market are now guiding principles for the SEWRC. Further amendments **remove the power** of the Commission to control the electricity prices between energy producers and end suppliers and thermal energy prices between producers and heating system utilities and their customers. However it is allowed to control the price (component), through which all customers participate in public expense compensation. The amendments changed the rules on buying renewable energy and prices to be paid – after subtracting all profits from emission trading and gains from contracts for green energy sales. End suppliers are obliged to sell energy to the public distributor at the same prices as it was originally bought at. Issue 59 of State Gazette states that SEWRC should develop methods for the fair distribution among all consumers on the internal market of expenses caused by the obligation to buy renewable energy, while previously only the difference between the preferential and market price had to be allocated among all consumers, including export traders of electricity.****** This amendment is thus beneficial to those obliged to buy renewable electricity, leaving the price of renewable electricity to be distributed only among consumers.

Notes:

* *Law for the amendment and supplement to the Law for the Civil Servant, Additional Decrees, State Gazette Issue 38 from 18 May 2013, p. 23, para 41.*

** *Law for the amendment and supplement of the Energy Law, State Gazette Issue 54 from 17 July 2012, para. 7.*

*** *Article 11(2) of Energy Law*

**** *Law for the supplement of the Energy Law, State Gazette Issue 20 of 28 February 2013, p. 20.*

***** *Law for the amendment and supplement of the Energy Law, State Gazette Issue 59 of 5 July 2013, para. 1.*

****** *Law for the amendment and supplement of the Energy Law, State Gazette Issue 59 of 5 July 2013, para. 19.*

2. SNAPSHOT OF BULGARIA'S ENERGY SECTOR: ENERGY SECURITY PERSPECTIVE

2.1. ENERGY SECURITY: IMPLICATIONS FOR BULGARIA

Low levels of energy security usually result in high-levels of **energy dependency** and **energy poverty**. Energy security, energy poverty and energy dependency are inter-related terms as low energy security and supply dependence usually translate into higher prices, or energy supply disruptions, and eventually into energy poverty and *vice versa*. Both producer and consumer countries rely on abundant supply of energy sources and the smooth-functioning of the market to ensure adequate supplies of energy to the economy at competitive prices. In an attempt to insulate themselves from market fluctuations and pursue a long-term strategy for reducing their dependence on energy imports, some countries opt for boosting their energy efficiency, as **reducing the energy intensity of the economy is the main preventive measure directly affecting the energy security of the country** – a strategy that seems particularly sustainable for Bulgaria, as well.

Monitoring the energy developments in Bulgaria and accordingly devising energy policy strategies that would adequately address the energy security risks, that the country is facing, is of an immense importance to the economic, social, and political well-being of the country. Bulgaria is in a unique energy security position in the EU. It is a small and open economy, which lacks geopolitical weight to be a policy maker not only in regards to EU's energy policy but also vis-à-vis regional powers like Russia and Turkey. Bulgaria's energy sector is mostly state-owned, poorly managed and heavily dependent on Russian resources and technology. The *National Security Strategy of Bulgaria* adopted in 2011, states that one of the biggest threats to Bulgarian national security is poverty, and in particular energy poverty[36] as Bulgaria has been indicated in a number of studies as the country most susceptible to energy poverty in the EU. When devising the country's energy policy, it is important to be mindful of the following **characteristics of energy security in Bulgaria**:

a. **Availability of resources**: A sustainable strategy for Bulgaria has to incorporate a sizeable use of unconventional energy sources and map a route to the economy's transition to a more sustainable energy model. Furthermore, technologies have virtually revolutionized and democratized the oil and gas production industry – most countries in the world sit on unconventional resources and new technologies that allow for reintensification of production in depleted oil and gas wells. Bulgaria's major handicap in the process is

[36] Bulgaria, Ministry of Economy and Energy, (2011), *National Security Strategy of the Republic of Bulgaria*. Accessed from: http://www.mi.government.bg/files/useruploads/files/national_strategy1.pdf

that it has so far ignored local oil and gas production, does not have a national oil and gas champion plus sustainable strategy, including engaging local communities and other stakeholders, and has limited itself in developing local alternative supply options by introducing the moratorium on fracking.

b. Reliability: Considering the country's strained finances and extended state aid risks, measures to reduce the demand for energy are most logical for Bulgaria in both short- and long-term perspective due to the fact that the price to be paid will be distributed among the most dispersed number of actors. Further, it is imperative that the government's decisions for the construction of future energy projects are based on the projects' potential to diversify supply sources and ensure an uninterrupted energy supply. The set of criteria should be led by best value for money, with the value defined as effect on the resilience of the energy system to external and internal shock and the competitiveness of both consumers and the producers.

c. Environmental **sustainability:** A sustainable energy future would require a low-carbon growth through policies that expand well beyond the energy system and support complex concepts such as smart cities and transport, green buildings, etc. The most important steps for the next decade towards this future in Bulgaria are to enhance the energy efficiency of buildings and to lower the energy intensity of the economy.

d. Affordability:[37] Bulgaria faces critical issues in energy affordability: in 2010 over a third of the households report being unable to afford keeping their homes adequately warm, and roughly 60 % of the Bulgarian households have used wood for cooking and heating – a criterion for defining a household as energy poor[38] (Figure 5). Bulgaria is also a leader in the EU in terms of the share of households that have defaulted on their utility bills,[39] despite the fact that Bulgaria's pricing policy is devised around keeping electricity prices artificially low, with modest, yet frequent, price increases, to compensate for other economic weaknesses – a quite unsustainable approach in the long-term. The data from the 2011 census confirms these findings – nearly 54 % of the inhabited dwellings in the country use wood and coal as a main heating source, while in the villages, the respective share is 95.2 % (Figure 5). The residents of Bulgaria use disproportionately high amounts of environmentally harmful coal and wood, as well as costly electricity to heat their homes, and pay substantial portion of their incomes for energy bills (Figure 4 and Figure 5), while also not being able to keep their homes adequately warm. The limited reach of certain types of networked energy infrastructures (particularly gas) means that, in addition to affordability issues, energy deprivation is also predicated upon the spatial and technical limitations associated with switching towards more affordable fuel sources in the households. Some parts of the population have had no option other than using wood and coal for heating. In Bulgaria, switching towards this source of energy has clear positive income dimension. Subsidized household electricity

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[37] Pascual, C. and J. Elkind (2010). "Energy Security: Economics, Politics, Strategies, and Implications", *Brookings Institution Press* (Washington, D.C.).

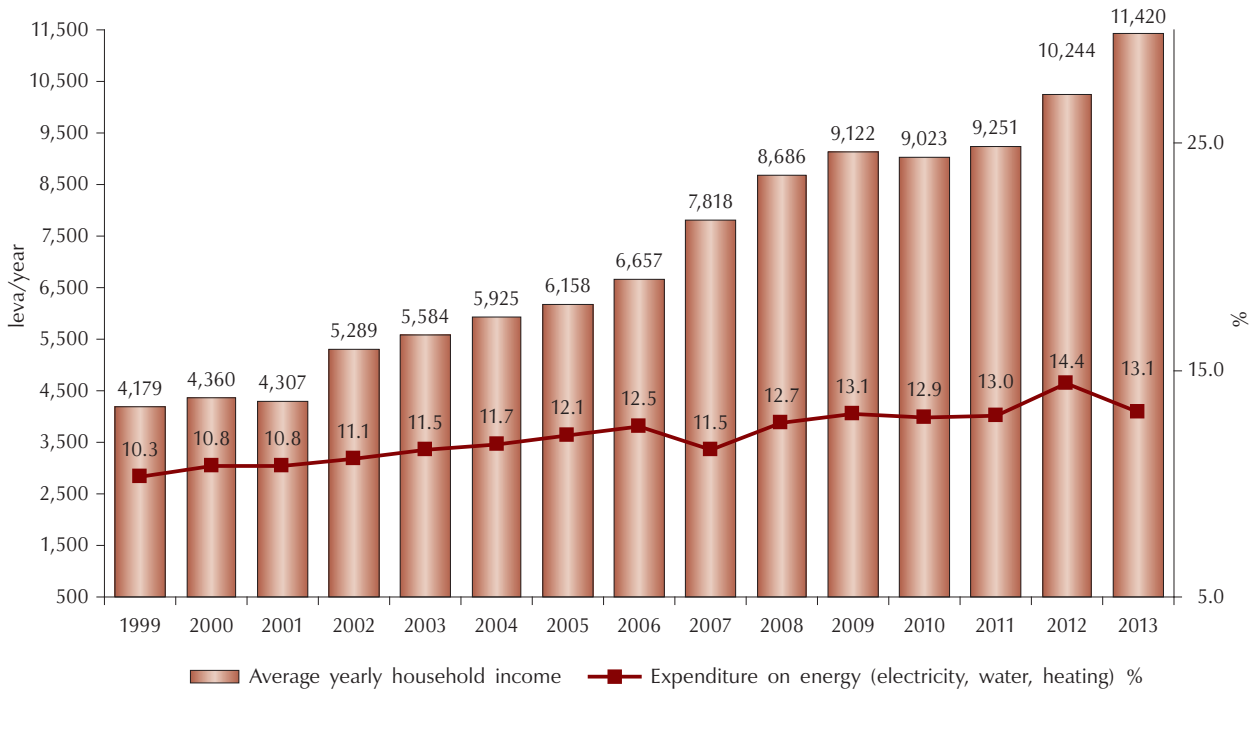
[38] According to the World Energy Outlook, energy poverty has two components: access to electricity and reliance on traditional use of biomass (mostly wood and coal, and inefficient stoves for burning them).

[39] According to Eurostat data.

prices have made Bulgarians in big cities overly reliant on electricity for heating. Hence, changes in electricity prices have had a disproportionately negative effect on energy poverty of households.

As a whole, Bulgaria is in a unique energy security position in the EU.[40] Energy poverty comes as the most serious energy security risk for the country with pervasive political and economic implications.[41,42] That is why focusing on energy efficiency, on developing alternative energy supplies and tapping into lower prices to help develop more efficient consumption are the most viable options for lowering the energy security risks for Bulgaria in the future. These options align well with European energy priorities on delivering clean, competitive, and secure energy. **Bulgaria should focus its severely constrained resources on implementing and leveraging EU policies**, which seems not to have been the case so far.

Figure 4. Energy Expenditure as a Percentage of Household Income in Bulgaria



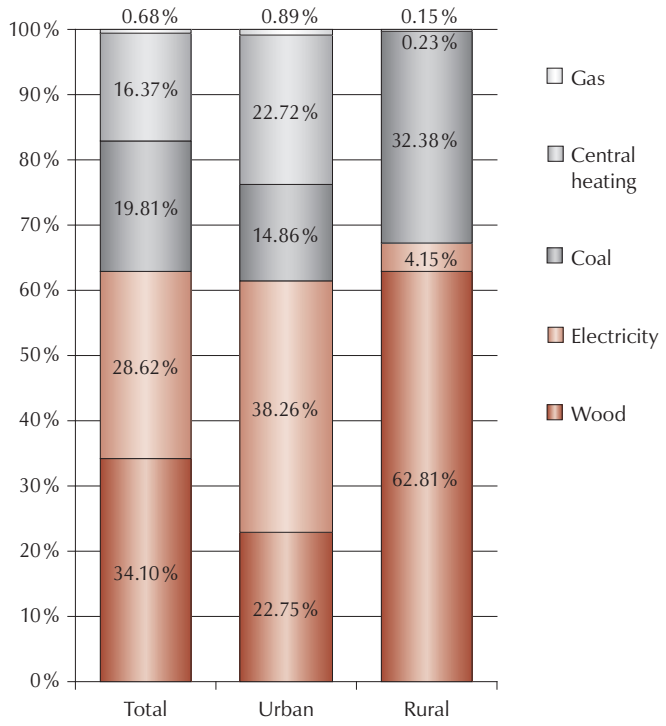
Source: NSI.

[40] CSD, (2013), *Bulgaria's Energy Security Risk Index*, Policy Brief No. 40, Center for the Study of Democracy, Sofia, September 2013.

[41] Bulgaria, Ministry of Economy and Energy, (2011), *National Security Strategy of the Republic of Bulgaria*. Accessed from: http://www.mi.government.bg/files/useruploads/files/national_strategy1.pdf

[42] Bouzarovski, Stefan. "Energy poverty in the EU: a review of the evidence". Paper presented at Workshop and Conference on Energy Efficiency – EU Regional Policy, Brussels, Belgium, November 29 – 30, 2011.

Figure 5. Main Heating Sources by Type of Settlement in Bulgaria



Source: NSI.

2.2. OVERVIEW OF THE ENERGY SECURITY POSITION OF BULGARIA

The International Index of Energy Security Risk (IIESR),[43] developed in 2012 by the Institute for 21st Century Energy at the American Chamber of Commerce shows that since 1980, **Bulgaria has had one of the worst energy security risk index scores** both nominally and compared to the OECD averages as Bulgaria's scores over the period averaged about 160 % higher than the average values for OECD countries. Reasons for the relatively low level of energy security in Bulgaria are deep-seated and while some of them are based on intrinsic and inherited inefficiencies of Bulgarian economy and energy sector in particular, others could be seen as the direct results of subpar policies in the area. However, unlike most of the other countries included in the index ranking, in absolute terms, Bulgaria's overall risk has been trending downward throughout the period (Table 3 and Figure 6).

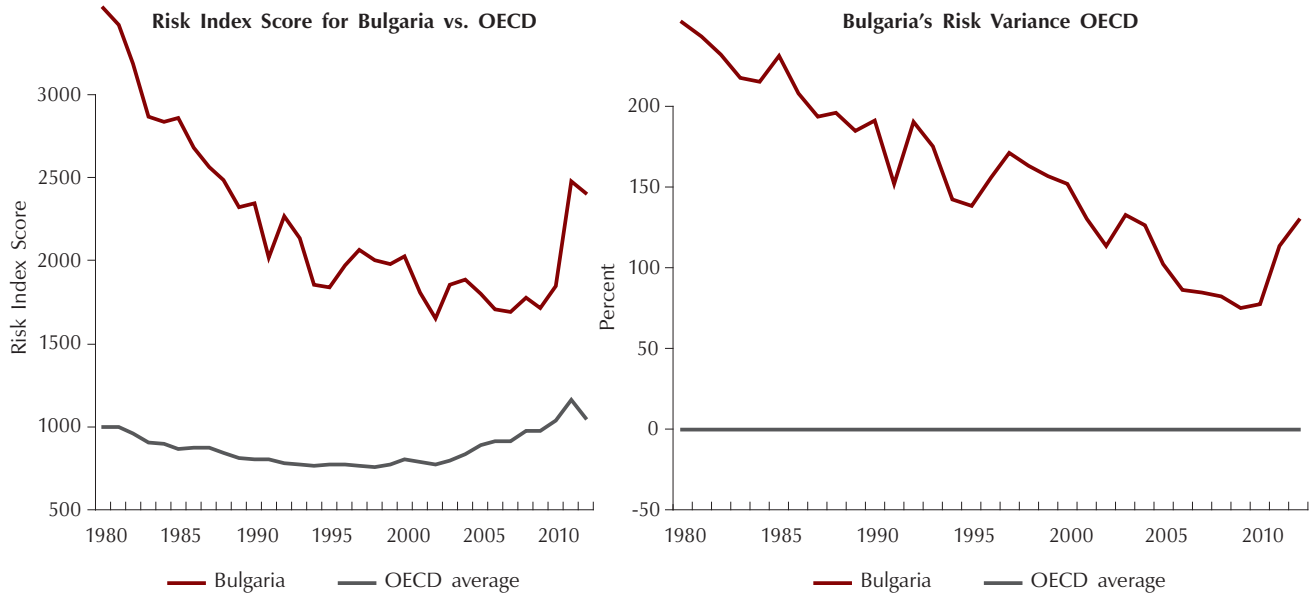
[43] "The International Index of Energy Security Risk", http://www.energyxxi.org/energy-security-risk-index

Table 3. Bulgaria's Energy Security Risk Summary

Risk Scores:	
2012 Energy Security Risk Score	**1,846**
2012 Top 75 Energy User Group Rank	73
Score in Previous Year	1,714
Rank in Previous Year	70
Score in 1980	3,524
Average Score: 1980 – 2012	2,238
Best Energy Security Risk Score	**1,654 (2002)**
Worst Energy Security Risk Score	3,524 (1980)
Risk Scores Relative to OECD Average:	
Average Annual Difference 1980 – 2012	158 %
Best Relative Score	75 % (2009)
Worst Relative Score	252 % (1980)

Source: IIESR, Institute for 21st Century Energy.

Figure 6. Energy Security Risk Index Score for Bulgaria vs. OECD and Bulgaria's Risk Variance OECD



Source: IIESR, Institute for 21st Century Energy.

From its peak of 3,524 – 252 % above the OECD average – in 1980, the country's total risk score fell to 1,654 in 2002 – still about 114 % higher than the OECD average, but with a considerable improvement. The total risk spiked again in 2010, as a result of the economic crisis in the country, increasing energy poverty and social tensions. Above all, the relative deterioration of Bulgarian scores are based on worrying results in terms of **energy expenditures volatility**, which according to IIESR have increased more than 10 times in the years since 2009, reaching in 2012 one of its highest levels since 1980.

Like many other European countries, Bulgaria has no indigenous production of energy resources other than coal. Its import risks for everything except coal have been exponentially higher than the OECD average for most of the period since 1992. As a result, the country's expenditures on fossil fuels imports as a share of GDP, although improving, have, over the years, remained much higher than the OECD average. The problem is not solely that the share of the energy imports is high or the capital outflow servicing those imports is rising, but the fact Bulgaria controls miniscule segments of the energy value chain.

On the positive side, Bulgaria's power sector is quite diverse. It is one of the few countries with capacity diversity scores (though only marginally) better than the OECD average. Typical of an economy in transition, its energy use and emissions per capita measures are worse than the OECD ones, and these appear to be improving at about the same rate as the OECD's.

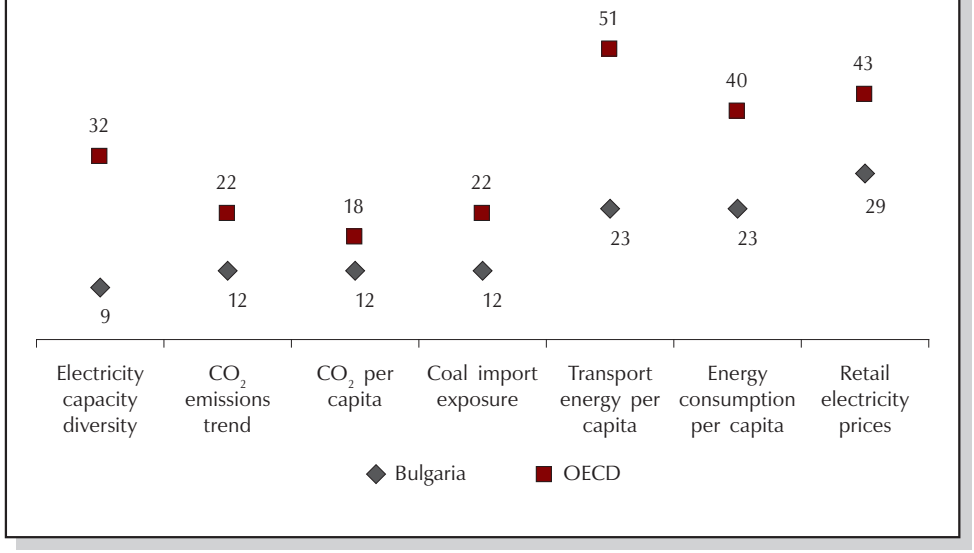
Bulgaria shows lowest risks for the following metrics:

- Coal import exposure (100 % below average OECD risk levels)
- Electricity capacity diversity (72 % below average OECD risk levels)
- CO_2 emissions trend (48 % below average OECD risk levels)
- Transport energy per capita (42 % below average OECD risk levels)
- Energy consumption per capita (42 % below average OECD risk levels)
- Retail electricity prices (31 % below average OECD risk levels)
- CO_2 per capita (30 % below average OECD risk levels)

From a developmental point of view only two of these comparative advantages look sustainable. These are the **coal import exposure** and the **electricity capacity diversity**. In Bulgaria, coal is the only indigenous energy resource, although it is only low-grade lignite coal. In electricity generation, Bulgaria has developed a variety of production options. However, a key challenge in this respect is keeping up with investment requirements for replacing existing generation capacity, e.g. nuclear, as well as better embedding the respective production in the local industrial and technological environment. It is advisable that investments cover both options – i.e. modernization and generation capacity upgrades to meet ecological standards and higher efficiency. Private owners and businesses should be given an option to meet standards before they are shut down provided that in the interim emission markets rebalance and prices shoot up.

The other demonstrated lower security risk level indicators are typical for less developed countries. CO_2 emissions trend and CO_2 per capita have been at lower levels because of the steep deindustrialization process of Bulgaria since

Figure 7. Index Components with Better Performance for Bulgaria



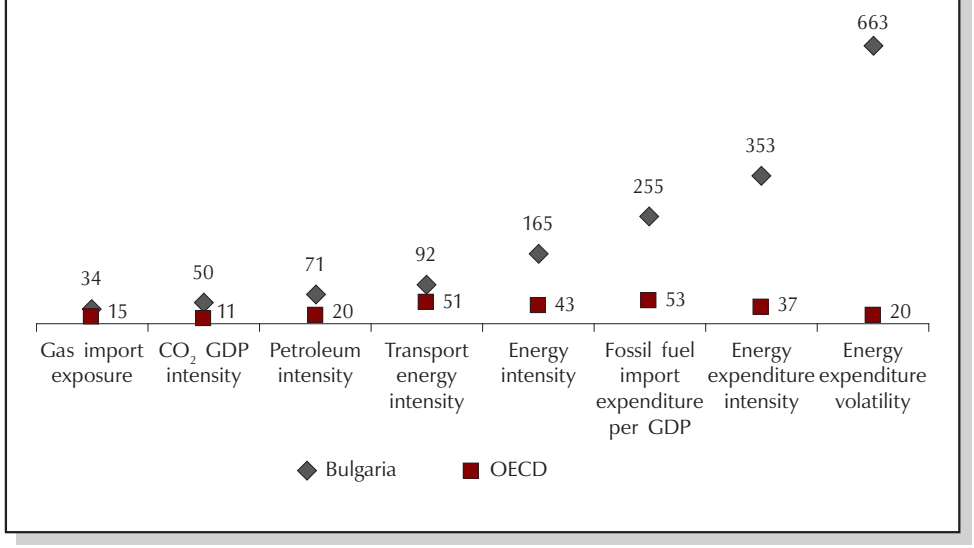
Source: IIESR, Institute for 21st Century Energy.

the collapse of its centrally planned industrial complexes in the 1990s. In fact, part of the steep decline in the industrial asset base has been the high price of energy, demonstrating the industrial dimensions of energy poverty. Transport energy per capita and energy consumption per capita have shown better scores as Bulgarians have been forced by lower incomes to use less energy for transport and consumption. The electricity retail prices have been lower because of continuing regulation of the household market. But their rise in 2012 caused widespread social discontent with substantial negative consequences for the country's security. This discussion comes to show that no single measurement of energy security risk should be regarded in isolation and without clear policy perspective. What is a low risk now can turn into a high risk potential in the future, due to changing circumstances, social and economic conditions, technological breakthroughs, etc. In terms of the main groups of metrics, the most **significant deficiencies** of Bulgarian energy sector has been demonstrated in the following groups:

- Energy expenditure volatility (3180 % above average OECD risk levels)
- Energy expenditure intensity (855 % above average OECD risk levels)
- CO_2 GDP intensity (370 % above average OECD risk levels)
- Energy intensity (289 % above average OECD risk levels)
- Petroleum intensity (252 % above average OECD risk levels)
- Transport energy intensity (197 % above average OECD risk levels)
- Gas import exposure (134 % above average OECD risk levels)

Similarly, Bulgaria's higher than the OECD energy security risk indicators also need careful consideration. Its low GDP and the high levels of hidden economy, combined with the country's aging energy infrastructure and deep-seated patterns of inefficient energy consumption (both industrial and residential energy use), lead

Figure 8. Index Components with Worse Performance for Bulgaria

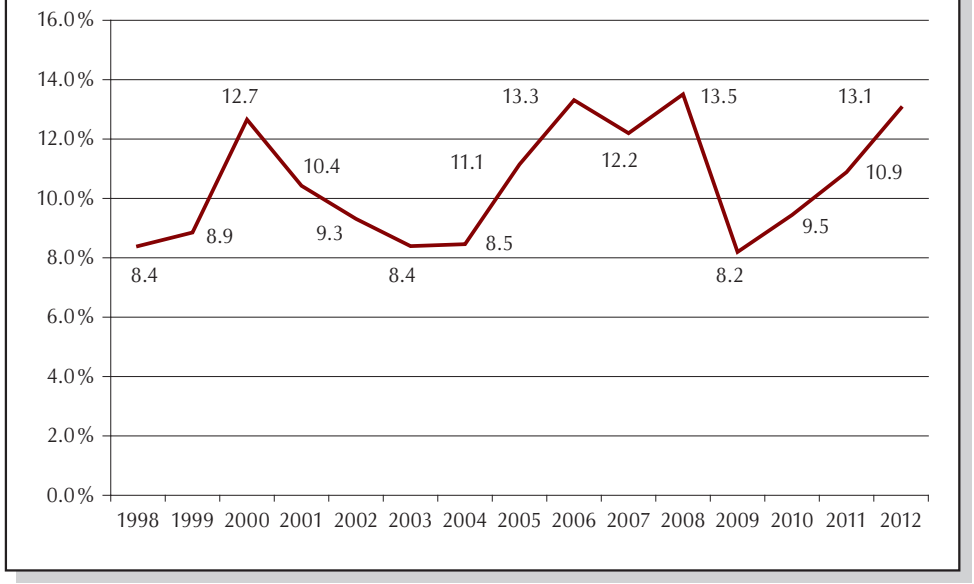


Source: IIESR, Institute for 21st Century Energy.

Bulgaria to face abnormally higher energy security risks on all energy intensity dimensions. These risks, however, are related to internal inefficiencies and costs and have been generally edging lower with the penetration of market economy rules in the country, yet are still at quite unsatisfactory levels. The highest demonstrated risk to Bulgaria's energy security is its high energy expenditures levels and their volatility. Energy expenditures metrics show the magnitude of energy costs to produce a unit of national income and the exposure of consumers to price shocks.

This is reminiscent of the country's high relative energy poverty and the low levels of its GDP. It also reveals the relation between the high exposure to fossil fuel import shocks, the low income levels, and the limited competitiveness of the Bulgarian economy (Figure 9). While gas import exposure risk does not appear that much higher than in the OECD countries, this is mainly due to the disproportionately low level of household gas consumption in the country, which relates to the overreliance of households on electricity for heating. The 2009 gas crisis in Europe has shown that while Bulgarian consumers, due to the low penetration of gas, can handle gas supply disruptions and price increase – they can't handle power cuts and electricity price hikes. In effect, Bulgaria was among the top three worst affected countries by the gas supply disruption in Europe in 2009. That is why, given the high and rising prices of electricity in Europe, and the country's energy poverty, developing alternative gas suppliers and tapping into lower gas prices to help develop household gas and central heating consumption is a viable option for lowering the energy security risks for Bulgaria in the future.

Figure 9. Nominal Fossil Fuel Import as a % of Nominal GDP (1998 – 2012)



Source: Bulgarian National Bank (BNB), National Statistics Institute (NSI).

2.3. BULGARIA'S ENERGY SECURITY CHALLENGES

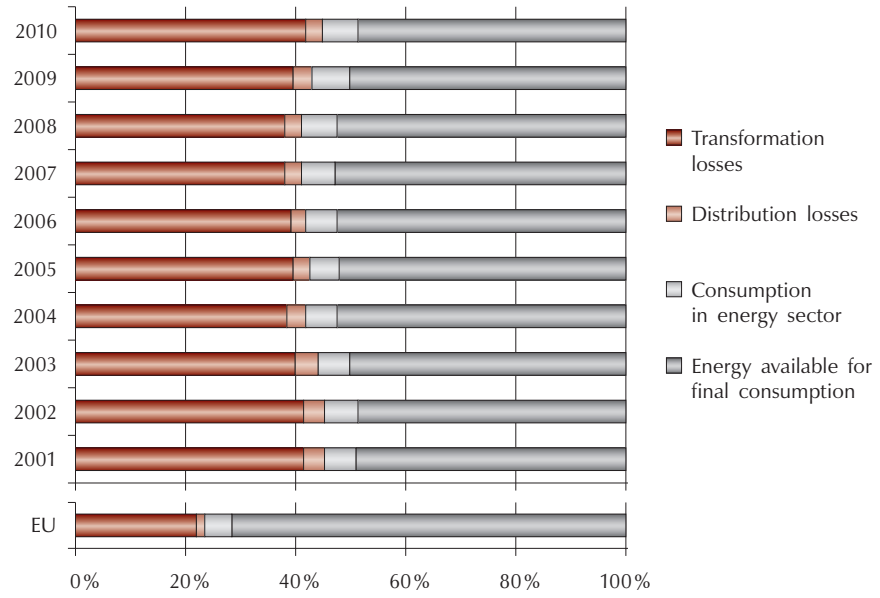
2.3.1. The Energy Efficiency Challenge: Energy Waste and Outdated Infrastructure

Over half of the energy produced in the country **is lost in the processes of transformation, transmission, and distribution**, while in the EU these losses are less than 30 % (see Figure 10 and Figure 11 below). Moreover, with regards to electricity, losses during the process of electricity distribution amounted to 4,480 GWh, far exceeding the amount of electricity produced by wind and solar energy in 2011 (which were 834 GWh and 100 GWh, respectively).[44]

The country's energy intensity is historically high (Bulgaria is a leader in the EU in terms of energy intensity) and has actually worsened since 2010. Gross inland energy consumption decreased in 2011 but consumption in the energy sector has increased in absolute terms and also relative to other CEE countries, as historically only Romania's energy sector shows higher rates of intensity. For comparison, distribution losses in Slovakia are nearly 9 times smaller than losses in Bulgaria and Romania (Figure 11). In addition, the slow economic growth has been fuelled by a disproportionate growth in fossil fuel imports (Figure 9). Considering that Bulgaria is not rich in conventional energy sources and imports a significant amount of energy resources, such wasteful energy trends seem

[44] According to preliminary data by Eurostat for 2011.

Figure 10. Energy Losses and Energy Available to End Users (% of Primary Energy Consumption)



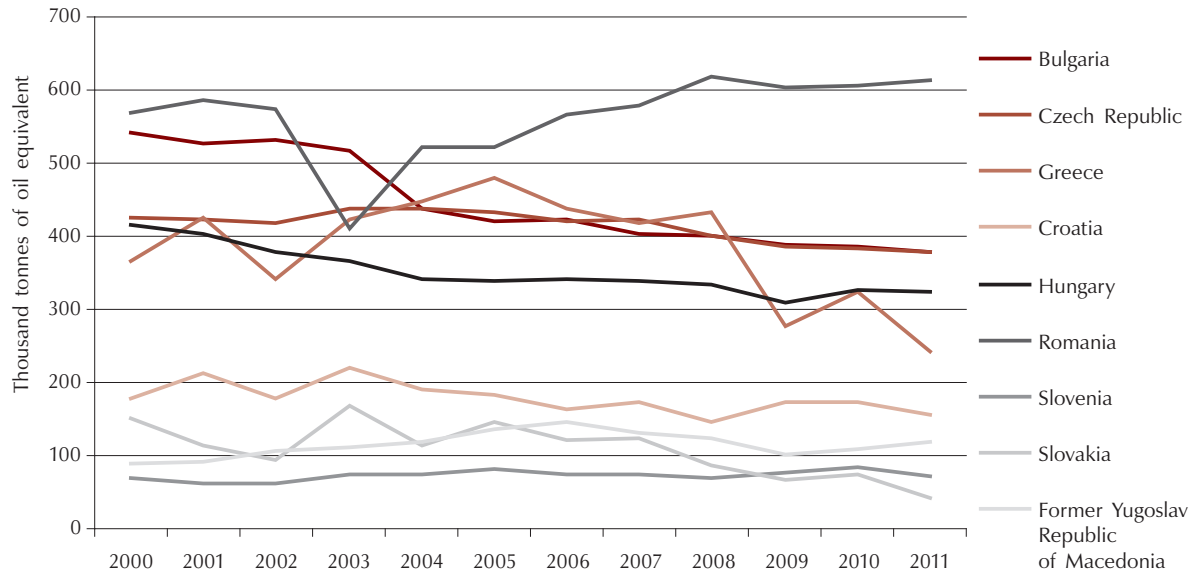
Source: Center for the Study of Democracy calculations, 2012, based on Eurostat data.

unsustainable. While charging customers for maintenance of the energy grid on a monthly basis, the past 20 years have seen a **continuous underfunding of the grid** leading to high depreciation and frequent blackouts. Moreover, as the country introduced a preferential regime in 2007 to boost the development of projects generating energy from renewables, as per EU latest regulations and developments in the energy sector, it became clear that the aged energy grid has no capacity to accommodate these advancements and is not physically located to serve the bulk of these projects.[45] However, ESO grid development plan for 2010 – 2020[46] concludes that no new capacities are necessary to balance out the system (incl. irregularities related to renewable energy production), given that wind energy does not exceed 1,832 MW of installed capacity by 2020 (and solar does not exceed 600 MW), TPPs Bobov Dol and Varna shut down, and HPP Tsankov Kamak is built. As of 2013, however, despite finishing HPP Tsankov Kamak and extending the license for operation of TPP Bobov Dol (while TPP Varna is also upgrading its systems, thus, not likely closing down), the regulator proclaims issues with balancing the grid as overwhelming and, subsequently, decisive for the latest amendments in the *RES Law*.

[45] For instance, the bulk of developed wind park projects in Bulgaria are located in the North-East, while the bulk of the transmission capacity (as per grid location) is concentrated at the Center and West.

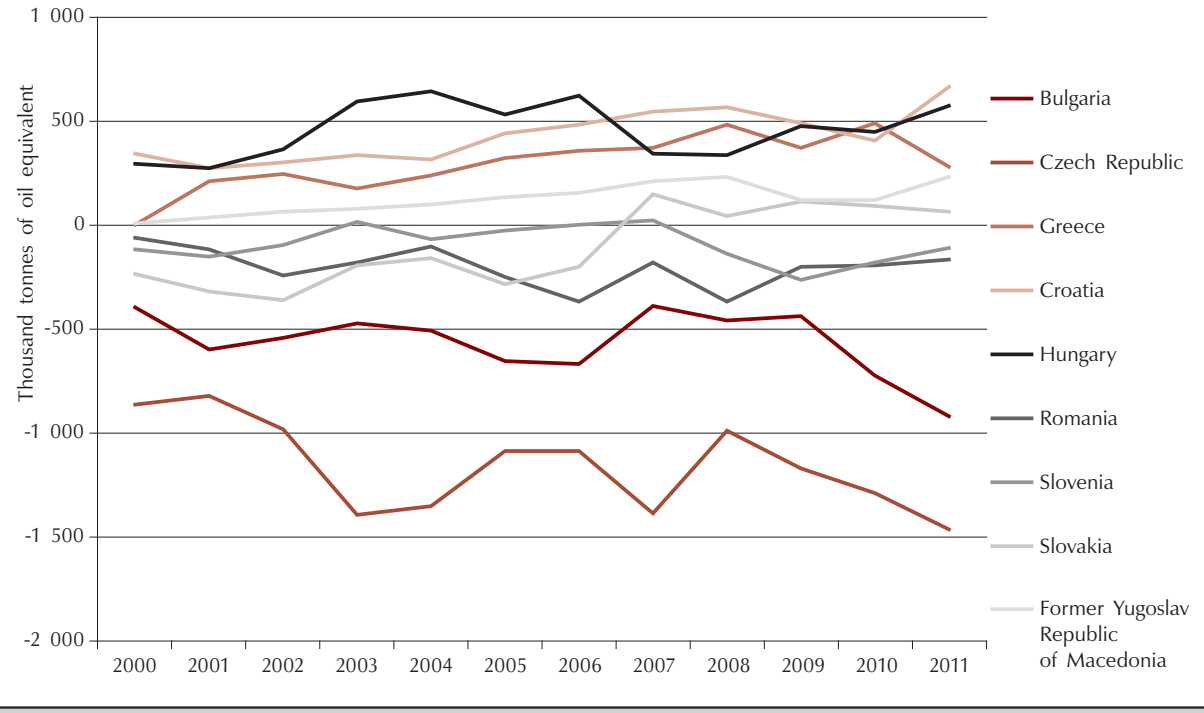
[46] Bulgaria, ESO, (2010), A Plan for the Development of the Electricity Transmission Networking Bulgaria for the Period 2010 – 2020.

Figure 11. Energy Distribution Losses in CEE Countries



Source: CSD, based on Eurostat data.

Figure 12. Gross Inland Consumption of Electrical Energy in CEE Countries



Source: CSD, based on Eurostat data.

Box 2. Energy Efficiency Initiatives Across EU MSs

The EU has put great emphasis on energy efficiency in buildings, setting specific targets through the Energy Performance of Buildings Directive (EPBD). In particular, it requires MSs to develop strategies on how to make the national building stock energy efficient and climate neutral, as well as introduce mandatory requirements for all new constructions to be nearly Zero-Energy Buildings (nZEB) after 2020. In view of these requirements, most countries have imposed specific legal obligationsthat buildings must fulfil in order to achieve the overall energy efficiency goals set by the EU, imposing a relatively small financial burden on the government. However, given the current harsh economic climate, governments all across Europe have developed grant and loan schemes so that poor households are not deterred from investing in energy efficient technologies. Some of the schemes developed by various MSs include:

Germany: The government has developed the most comprehensive and ambitious energy-saving plan in the EU, which is based on a three-pronged approach including strict national regulation on renovations and use of renewable energy resources, financial incentives such as loans and grants provided by a government-sponsored public investment bank (Kreditanstalt für Wiederaufbau) and dissemination of information and awareness raising through pilot projects aimed at behavioural change.

United Kingdom: The "Green Deal" scheme allows homeowners to employ certified contractors with energy efficiency credentials. The cost of the renovations is paid through the electricity bill and the certificate is linked to the building rather than the owners.

Italy: The government has set minimum requirements for new and existing buildings undergoing major renovations. Buildings are awarded energy certificates and there are tax reductions for up to 55 % on the installation of energy-saving technologies in households.

Portugal: In the residential sector, a progressive tax scheme has been implemented based on the energy class of the building. Furthermore, homeowners have access to low interest rate loans for renovations as well as subsidies to build new buildings with energy class A, A+ or A++.

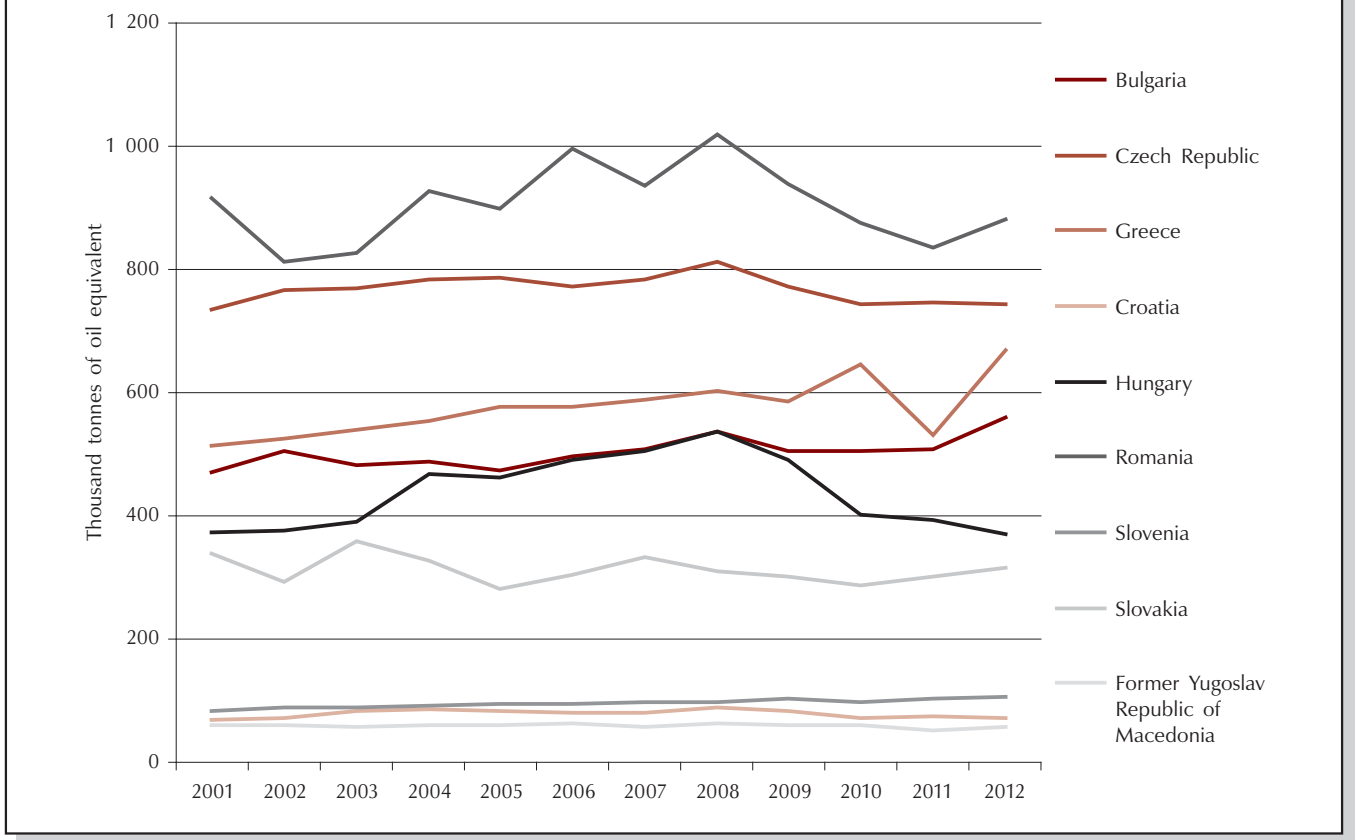
Czech Republic: The Green Savings programme funds the installation of heating systems using renewable energy sources as well as energy saving renovations and new buildings, such as insulation. The funds for the program were raised through the sale of emission credits under the Kyoto Protocol on greenhouse gas emissions.

Hungary: The government provides financing for the renovation of old buildings and the use of energy efficient technologies in new buildings. The financing is proportional to the cost of the renovation and can reach up to 60 % of the value of the work. In case a building is awarded energy efficiency class B or above, there are opportunities for additional financing.

Latvia: Homeowners can receive a credit for energy efficient home renovations, as well as grants to help them fill in the application documents through the Joint European Support for Sustainable Investment in City Areas (JESSICA) programme.

Estonia: A revolving fund scheme for the energy efficient refurbishment of housing has adopted a 'do more, get more' approach – homeowners receive grants proportional to the energy label that will be awarded following the renovation. As a result, projects that apply for loans under the scheme achieve average energy savings of 33 %.

Figure 13. Consumption in the Energy Sector



Source: CSD, based on Eurostat data.

Bulgaria's physical residential infrastructure is seriously weathered and outdated. Despite this fact, Bulgaria is set to exceed the 9 % energy saving target set out in the Energy Services Directive,[47] and expects to achieve 16.9 % energy savings by 2016 (against a 2007 baseline).[48] The reductions achieved to date have come predominantly through the decline of certain inefficient industry sectors such as metallurgy, which have helped to reduce the total amount of energy used in the country.

A quarter of the energy consumed in Bulgaria is used in the residential sector (Figure 15).[49] Unlike other sectors, **energy usage in Bulgarian households has actually increased in recent years** – the total final energy consumption of the residential sector increased by around 3.6 % between 2007 and 2009, while showing direct negative correlation between rates of energy efficiency and level of central heating penetration.[50]

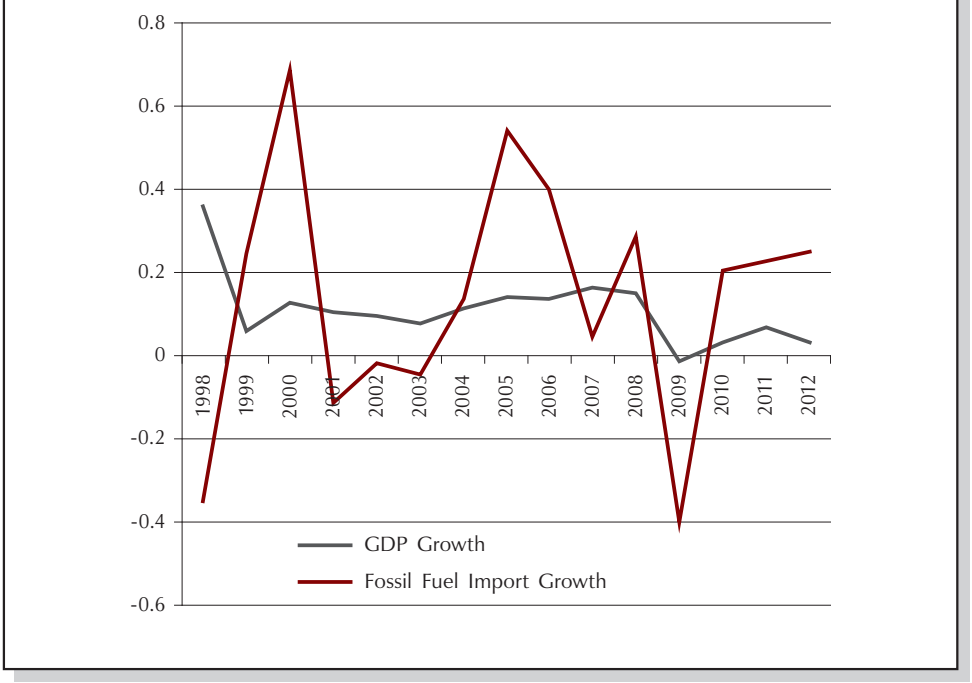
[47] *Directive 2006/32/EC*, (05.04.2006).

[48] Bulgarian Government, (2011), *Second National Energy Efficiency Action Plan 2011 – 2013.*

[49] Eurostat, (2012), *Final energy consumption, by sector.*

[50] From 2073 kilotonnes of oil equivalent (ktoe) in 2007 to 2149 ktoe in 2009. Bulgarian Government, (2011), *Second National Energy Efficiency Action Plan 2011 – 2013.*

Figure 14. Growth of Nominal Fossil Fuel Import vs. Nominal GDP Growth (1998 – 2012)



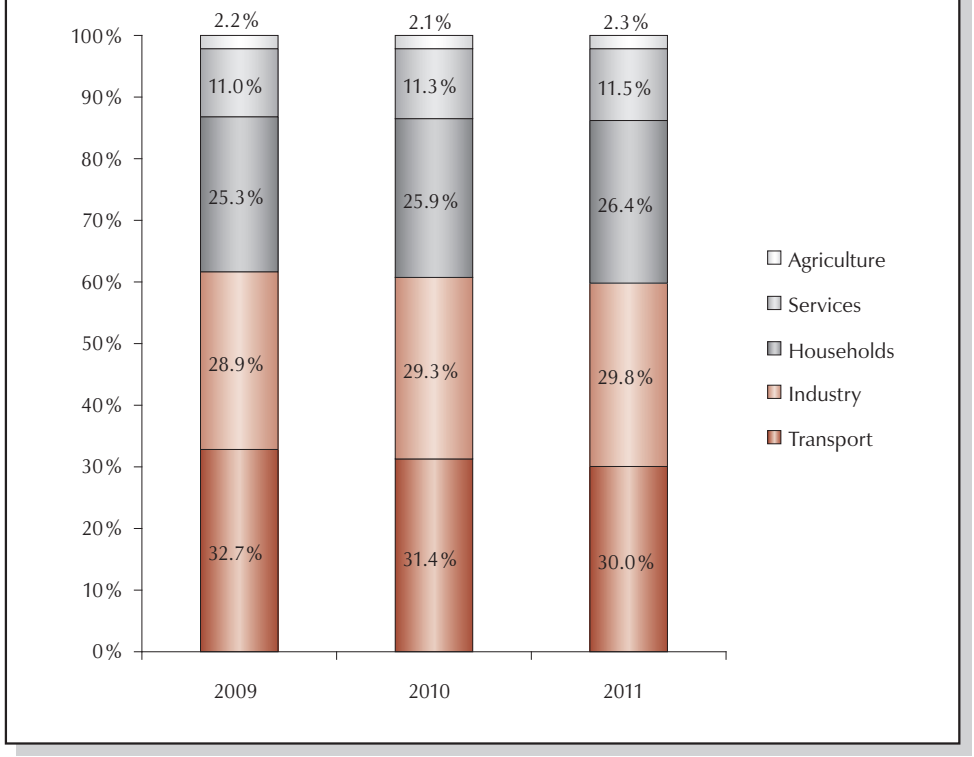
Source: Bulgarian National Bank (BNB), National Statistics Institute (NSI).

The 2011 census provides the first nationwide statistics about the levels of energy efficiency of Bulgarian homes. According to this data, **88 % of all residential buildings in Bulgaria were built before 1990** and only 5 % were built after 2000. Therefore most residential buildings were not built in line with any energy efficiency considerations.

Despite the proven economic and lifestyle benefits of wall insulation and energy efficient windows, only 16 % of all households have installed insulation. Urban homes are significantly more active in this regard with 42 % having energy efficient windows, of which only 41 % also have wall insulation. In rural areas on the other hand, where residential buildings are significantly older, less than 4 % of all households have installed energy efficient windows and wall insulation. Overall, it appears that if a family must choose between the two measures, energy efficient windows prevail with 22 % of all households, while 2.9 % of all homes only have wall insulation.

In terms of heating materials, **the most popular fuels are wood and electricity, used by 31.1 % and 28.6 % of households** respectively. Only 0.7 % of households use gas, which is a result in part of the low levels of gasification even in urban areas. The energy mix varies significantly between urban and rural areas. 38.3 % of urban households use electricity for heating, followed by wood and central heating. The vast majority of rural households on the other hand use wood (62.8 %) and coal (32.4 %).

Figure 15. Bulgaria's Final Energy Consumption by Sector, 2009 – 2011[51]



Source: National Statistical Institute (NSI).

The European Commission has estimated that in urban areas, **a Bulgarian home can produce on average 1600 KWh/m² every year**, amounting to 30 % of the average household electricity consumption. The census data shows that this potential remains largely untapped, as only 1.5 %, or 30,629 out of the total 2,060,745 residential buildings in the country, had installed solar panels at the beginning of 2011. More than half of them – 60 %, are in urban areas. The majority of solar panels – 87 % are installed in single family homes.

Key Challenges for Bulgaria in Improving the Energy Efficiency of the Domestic Sector

While there is huge potential for improving the energy efficiency of housing in Bulgaria, there are some key challenges and barriers to be overcome, including:

- Lack of data on both the housing stock and, more specifically, on the energy consumption of the residential sector which make targeting (and monitoring progress) difficult.
- Lack of mandatory audits in place as part of an incentives program to measure energy and carbon footprint at household level.

[51] Eurostat, (2012), *Final energy consumption, by sector.*

- Increasing use of energy consuming domestic appliances is likely to lead to a higher level of energy use in the residential sector in Bulgaria if steps are not taken to counteract this. A high proportion of flats in multiple ownership buildings, particularly large panel residential buildings, also have direct negative effect on attaining sustainable levels of efficiency gains.
- Critical issues in taxing cars based on engine power and not on emissions – not green tax – therefore limiting purpose collection of proceeds from green taxes and channelling them to cover.
- Dated district heating systems and prevalence of central heating compared to other European countries.
- The lack of dual accounting which reward savings (night) and consumer driven RES power generation at present.
- Low average incomes and high levels of energy poverty, which are a barrier to being able to afford energy efficiency improvements.

Box 3. Government-Funded Programs for Energy-Efficient Measures in Bulgarian Homes

Some progress has already been made towards energy efficiency in residential buildings through financing programmes set up by government agencies. It was estimated that 700,000 residential units, inhabited by over 2 million Bulgarians, could greatly benefit from retrofitting energy-efficient technologies. Approximately 50 % of primary energy consumption could be saved through retrofitting, which would result in a 600 EUR annual savings from energy bills per household. The average cost for these renovations was calculated to 5,000 EUR per household, which would be returned in a 7 year period.

Support for energy efficiency in multifamily residential buildings

In 2013, the Ministry of Regional Development and Public Works (MRDPW) launched a three-year (2012 – 2015) nation-wide programme for energy efficient renovations. The "Energy renovation of Bulgarian homes" project is supported by the Operational Programme Regional Development, co-financed by the Regional Development Fund of the EU, for a total of BGN 50 million and is available to associations of home owners in 36 towns and cities. A year after the programme was introduced, and as a result of the very low interest from home owners, in April 2013 the size of the grants part was increased from 50 % to 75 % of the total cost of renovation. The programme covers insulation, replacement of windows and doors, refurbishment of heating installations, mounting of RES (e.g. solar panels), and replacements of heating/cooling/electrical/ ventilation installations. Since the launch of the programme, only BGN 218 135 have been claimed, implying a persistently low level of engagement of home owners.

Residential Energy Efficiency Credit Line (REECL)

Homeowners can also benefit from the joint program of the Sustainable Energy Development Agency (SEDA), the European Commission and the European Bank for Reconstruction and Development, which have set up a EUR 40 million Residential Energy Efficiency Credit Facility running until 2014, providing credit lines to banks to make loans to householders and associations of home owners for specific energy efficiency measures. To help stimulate the project, an additional EUR 14 million in grant financing has

Box 3. Government-funded Programs for Energy-efficient Measures in Bulgarian Homes (Continued)

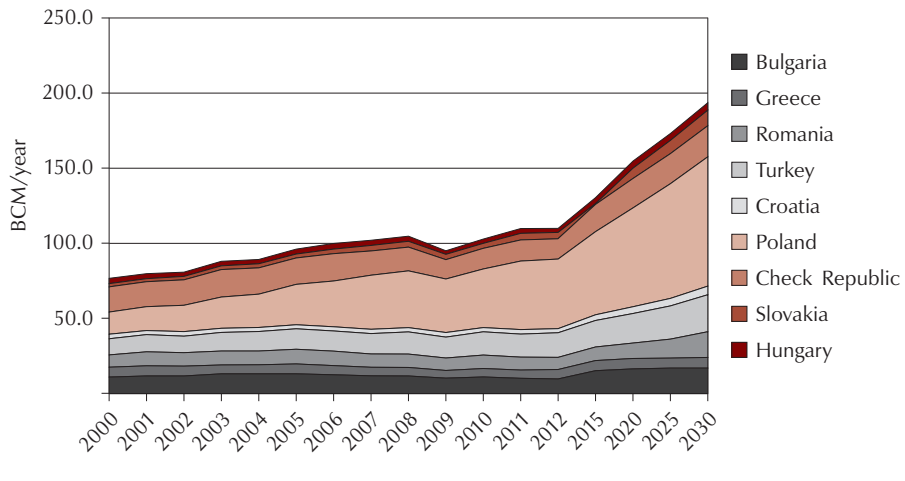
been made available by the Kozloduy International Decommissioning Support Fund (KIDSF). Borrowers can benefit from up to a 35 % incentive towards the cost of their energy saving projects, once an independent consultant has assessed their eligibility. It is estimated that up to 30 000 households could benefit from this scheme. Since 2006 the program has committed to 41,496 energy efficiency loans, while EUR 11 903 952 have been issued as incentive grants.

2.3.2. Security of Oil and Gas Supply Challenges

a. Security of Gas Supply

Gas supply diversification and disruption risks are closely related to energy security and also to energy poverty and electricity prices, as affordable gas supply is the most viable option for the Bulgarian economy to receive cheaper energy alternatives comparable to coal and wood, which are very harmful to the environment and the living conditions in settlements. Although gas supply and diversification risks stand as one of the most pressing challenges to the country's energy security in the next decade, no significant mitigation of the negative circumstances in that regard has been achieved in the 5 years after the Russian-Ukrainian gas supply crisis of 2009. **Having achieved little progress in terms of diversification, Bulgaria is currently paying some of the highest natural gas prices in the EU** (Figure 17), also leading to unsatisfactory progress in the level of natural gas consumption compared to peer countries (Figure 16). In addition, the very high concentration of the Bulgarian gas market-monopoly

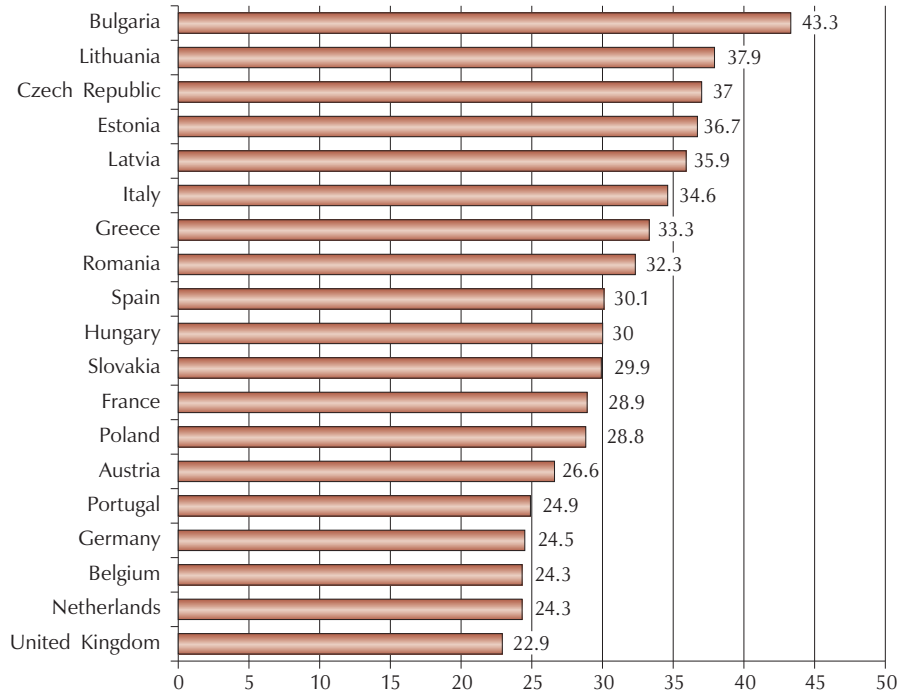
Figure 16. Natural Gas Consumption (2000 – 2030)



Source: Innovative Energy Solutions, CSD.

of supply and distribution provides ample opportunities for lack of transparency and rent-seeking behaviour of state actors. What also presents a very troubling case is that **the bulk of information on gas transit through the country (i.e. tariffs, taxes, fees, and revenues) is not publicly available online**. Unlike transit tariffs, the tariffs for transmission and distribution, as well as storage, are regularly published on the web. The decision of the Bulgarian government to leave the transit fee revenues with Bulgartransgaz EAD infuses an additional element of non-transparency. It prevents state authorities and taxpayers from overseeing what part of the payments go to the company for the actual transportation of gas, and what share goes to royalties for the state for using its territory for transit. Thus, independent oversight on gas transit revenues is reduced and public understanding of the transiting company's performance efficiency is blurred.

Figure 17. Average Gas Price per EU Country (EUR/MWh)



Source: European Commission.

Domestic Organization of the Gas Sector

Following EU accession in 2007, Bulgaria had to implement the *Second Gas Directive*, which stipulated that the state-owned natural gas supplier, Bulgargaz has to be unbundled. The restructuring led to the creation of the Bulgargaz Holding EAD, and the business was split off into newly established, separately-owned companies: Bulgartransgaz EAD and Bulgargaz EAD. The former has played the role of the gas TSO transiting the natural gas via the Transbalkan pipeline and distributing natural gas to domestic consumers. The latter was, until 2012, the de-facto monopoly

wholesale supplier on the natural gas market in Bulgaria. An amendment to the *Energy Law* from July 2012 has allowed gas customers to independently choose their supplier, and hence remove Bulgargaz as a sole intermediary selling natural gas to its customers, including its main competitor, the largest private natural gas distributor, Overgas EAD, owned by Overgas Holding (50 %), Gazprom Export (49.51 %), and Gazprom (0.49 %).

While the market has been liberalized since 2007, Bulgargaz has been able to prevent competition in the distribution of natural gas by purchasing in advance the whole transit capacity wholesale at the Romanian border. On 15 November 2012, Gazprom Export, a subsidiary of Gazprom, signed a new 10-year take-or-pay contract with Bulgargaz for the deliveries of 2.9 bcm/y to Bulgaria. The new contract adopted the changes in the *Energy Law* from July 2012 and removed the natural gas intermediaries allowing for de-facto competition on the domestic market. Private distributors like Overgas or Citygas can conclude natural gas delivery contracts directly with Gazprom without passing first through Bulgargaz. The result of the EU liberalization has been a double-edged sword for Bulgargaz and Bulgarian consumers. On the one hand, the liberalization of the Bulgarian internal market would allow consumers a direct choice of a gas provider, but on the other, it imposes further pressure on the financial health of Bulgargaz, which will continue to lose market share. By the end of 2012, Overgas with all of its subsidiaries controlled 65 % of the natural gas distribution market, and close to 35 % of the total amount of gas consumed.

While liberalization of the natural gas market is taking place (as per the Third Liberalization Package), **third-party access to the Bulgarian gas transmission network is permitted but the sector as a whole is not unbundled**. The largest Bulgarian distribution company, Overgas, the majority share of which is owned by Gazprom and its subsidiary Gazprom Export, violates the condition that the owner of the natural gas resource cannot also be the owner of the distribution company. In this respect, the Bulgarian gas sector remains dependent on one source of gas, and in the near future possibly also on one distribution entity.

Furthermore, the entry into force of the EU rules on **the liberalization of the gas market create the conditions for another gas distribution monopoly** by Overgas that threatens to price out Bulgargaz EAD unless Bulgaria applies for derogation until alternative supply routes and sources are made available. The financial situation in Bulgargaz remains difficult. The state regulator, SEWRC, cut gas tariffs by around 10 % in Q1 2013 and by another 3.89 % in Q2 on the back of lower import prices and a more favourable USD/BGN exchange rate. SEWRC has also continued squeezing the company's profit margins, so that the gas price for domestic consumers remains one of the lowest in the EU. Meanwhile, the domestic supply fell by 18 % y/y in Q1 2013 on the back of declining industrial activity. In addition, the Bulgarian heating and power companies owe Bulgargaz around 300 mln leva for delivered gas because they are unable to collect unpaid bills by customers in large cities. The start of the South Stream pipeline at the start of 2015 will further expose the company to a long-term financial risk. As one payment option, the company mulls using future transit fees as leverage. The gas distributor has tried to stabilize the financial situation by sharply decreasing imports from Russia in Q1. In addition, the company plans to borrow up to

USD 150 mln to purchase the natural gas necessary to fill the storage facility at Chiren. SEWRC and Bulgargaz have also negotiated to keep the gas tariffs practically unchanged until the end of 2013, which will give the gas monopoly some breathing space. Nonetheless, it will be difficult to maintain long-term financial stability if the government does not stop subsidizing gas tariffs at the expense of Bulgargaz hoping for a drastic change in Bulgaria's dependence on expensive gas imports.

Table 4. Oil & Gas Demand Projections

	2005	2010	2015	2020	2030
Gas Demand (Mtoe)	2.8	2.8	2.8	3.0	3.3
Oil demand (Mtoe)	4.9	4.6	4.9	5.0	4.8
Import Dependence (%)	47.4	49.5	51.5	45.8	43.3
GDP (mn '000 EUR)	21.9	25.8	30.5	34.7	42.2

Source: Bulgarian Energy Strategy 2020.

Local Production, Storage and Usage

Bulgaria depends on imports for approximately 90 % of its natural gas requirements, with domestic production accounting for the remaining 10 %.[52] All gas imports come from Russia under long-term contracts with Gazprom. Bulgaria has only 2 bcm of conventional gas reserves but has significant shale gas reserves relative to the size of the gas market. Domestic natural gas production is limited. In terms of conventional exploration and production, in 2012, extraction of natural gas in Bulgaria was 389,454 thousand cubic meters (tcm),[53] marking a 12 % decrease in extraction rates compared to the previous year. Extraction in the first quarter of 2013 was 73,561 tcm – a 30 % decrease y-o-y compared to Q1 2012.[54] In comparison, in Q1 2012, the total volume of natural gas imports (solely through Gazprom Export) was 657,979 tcm, almost twice more than the existing indigenous extraction capacities.

Domestic production of natural gas was very limited until 2003/2004 when Melrose Resources Bulgaria developed the offshore Galata field. The company exploited the field between 2005 and 2009, when it was exhausted with only 8.5 bcf (240 mcm) of gas reserves left.[55] By 2008, the field was contributing to around

[52] Bulgargaz, (2013), Independent Annual Activity and Financial Report.

[53] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria.*

[54] Ibid.

[55] Galata Gas Field, Bulgaria, accessed from http://www.offshore-technology.com/projects/galata-field/

8 % of Bulgaria's gas consumption. The depleted field could be turned into a gas storage facility after Melrose signed a memorandum of understanding (MOE) with Bulgargaz for its construction in 3 phases for a projected capacity of 1.8 bcm. Since 2009, Melrose has also developed and started production from two satellite fields, Kaliakra and Kavarna fields, with a current output of 38 mcf/d (1.07 mcm/d) and with probable reserves of around 1.7 bcm.[56] The two fields are producing around 20 % of Bulgaria's natural gas needs, although still the dependence ratio on imported Russian gas is higher at around 85 % due to take-or-pay clauses in the gas import contract.

Conventional production capacity has recently been expanded with the discovery of gas deposits in Bulgaria's Black Sea shelf, and in the Moesia shale basin with potential commercial discoveries pending. Melrose is also developing the Kavarna East offshore gas field that is due to become publicly available in 2014, and which could contain reserves of around 277 mcm. **The total amount of prospective natural gas resources being explored offshore in the Black Sea is around 3.64 bcm**. In addition to the E&P activities of Melrose (recently acquired by the Irish Petroceltic) the French giant, Total, in partnership with the Austrian OMV and the Spanish Repsol were awarded an exploration contract of the so-called Khan Asparuh Block, which borders Romania's territorial waters, where exploration activities led to the discovery of 40-80 bcm of technically recoverable reserves.[57] Finding considerable natural gas reserves will diminish Bulgaria's dependence on imported gas, which is still about 40 % more expensive than domestic production. However, according to the EIA, Bulgaria also potentially holds technically recoverable reserves of 453 billion cubic meters (bcm) or 16 trillion cubic feet (Tcf) of shale gas and 200 million barrels of shale oil in the Moeasian platform.[58]

Additionally, Bulgaria holds a total daily extraction capacity of 4.5 mcm gas reserves in the USG Chiren storage facility almost entirely used during the gas crisis in January 2009. At the end of the gas crisis, plans were announced to expand the annual gas storage capacities to 1 billion cubic meters (bcm) and 11 mcm of daily withdrawal rate; however, no adequate progress has been achieved since. In fact, it is continually challenging to provide sufficient volumes of gas to be stored in Underground Storage Facillity (USG) Chiren due to the Bulgargaz' liquidity problems. There are plans to convert the Galata gas field into a gas storage facility. The first phase (not commissioned yet), would provide storage capacity of 700 thousand cubic meters; phases 2 and 3 would raise the capacity to 1.2 bcm and 1.7 bcm respectively. A storage facility in Mirovo is currently in the planning phase for 2014. This facility is a joint venture between the national company Bulgargaz and Gazprom. The salt cavern site is expected to have a capacity of 400 million cubic meters upon completion.

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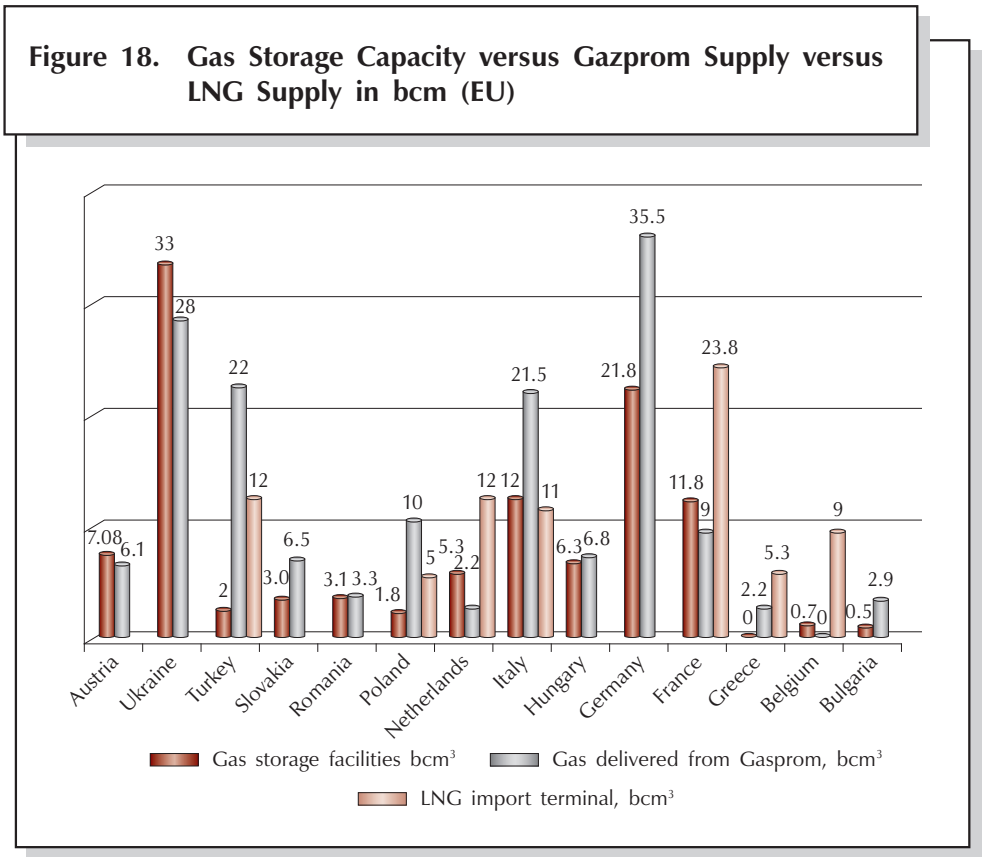
[56] Presentation of Melrose Resources Bulgaria at Romania Oil & Gas Conference, 4-5 December, 2012. "Black Sea Experience: Offshore Bulgaria and Romania".

[57] "French Total will look for oil and gas in the Bulgarian waters of the Black Sea", *Dnevnik*, July 25, 2012.

[58] US Energy Information Administration, (2013), Technically Recoverable Shale Oil and Shale Gas Resources: An Assessmentof 137 Shale Formations in 41 Countries Outside the United State.

Currently, the Chiren gas storage facility has the goal of balancing seasonal fluctuations of gas demand based on high consumption rates in the winter and very low demand levels in the summer. The expanded facility in Chiren and the new ones in Galata and Mirovo would play a strategic supply role assisting in the improvement of Bulgaria's energy security and the country's transformation into a regional gas hub. After the completion of the regional reversive interconnectors with Turkey, Greece, Romania and Serbia, the gas storage facilities in Bulgaria can become a regional trading hub for Russian and Azeri gas arriving through the Southern Gas Corridor via Turkey and the Transadriatic Pipeline (TAP) in Greece. For the interconnectors to be adequately linked to the gas storage facilities, the Bulgarian system operator has a comprehensive investment program for the construction of reversive flow links between the transit and domestic pipeline system; the inspection and rehabilitation of the gas transmission system; the increase in the number of gas compressor stations; and the development of electronic management systems.

Figure 18. Gas Storage Capacity versus Gazprom Supply versus LNG Supply in bcm (EU)



Source: CSD.

Due to the unfavorable gas market condition natural gas demand in the country has also been declining as total gas consumption for Q1 2013 was 923,209 tcm – a 10.19 % reduction from Q1 2012.[59] **Natural gas demand in Bulgaria has fallen over the past decade** – as the economy has undergone restructuring – but the demand trend has reversed in recent years, increasing in line with GDP growth

[59] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria.*

and investment in Bulgaria's gas network. Current annual domestic gas demand is approximately 3.2 bcm. Nonetheless, the structure of the economy does not allow for significance expansion of natural gas consumption beyond 4.5 bcm/y even in the longer term.

Unconventional Potential

Bulgaria imposed a moratorium on shale gas exploration on January 17th, 2012 after initially moving aggressively in developing the large Dobrudja shale basin. As a consequence, the government revoked the permit for exploration given earlier to Chevron. The main reason for the opposition is concern about the possible effect of hydraulic fracturing (fracking) on underground water in this large agricultural region. In the first study by the US Energy Information Administration in 2011, the geologists confirmed the existence of 260 bcm in technically recoverable shale gas reserves at a depth of around 3,000 meters, making them relatively less accessible, but also less environmentally damaging.[60] Two years later, the second study by the EIA revised its estimate of the technically recoverable reserves to 453 billion cubic meters showing more gas potential than was initially perceived. There has not been an official national study on the shale gas potential of the country. Yet the US energy company, Direct Petroleum, believed that it has made a discovery of 6 billion cubic meters of shale gas in Deventsi and 300 billion cubic meters in the Etropole basin.[61] Although there are no specific governmental policies on the taxation of shale gas exploration, in the future there will be a royalty on production ranging from 2.5 % to 30 %, depending on quantities and size of the production area. Hence, it is not surprising that there was a big interest in the development of shale gas resources from North American companies, among which Chevron, which successfully won a bid in November 2011 for the exploration of shale gas in the Novi Pazar field.

The decision to impose a moratorium on shale gas exploration in January 2012 was the result of environmental protests and it came as a surprise to the public, given that the government was a supporter of exploration up to the very day of the protests. The decision also coincided with the acceleration of the Bulgarian entry into the South Stream project, which is meant to transport 63 bcm/y of Russian gas via Bulgaria, Serbia, Hungary, Austria and ending in Northern Italy.

The arrival of the new government in the beginning of June 2013 did not bring a change to Bulgaria's gas strategy. The ban on fracking is based on a decision by the Parliament. In February 2012, the Ministry of Economy and Energy amended the ban to allow conventional drilling and the usage of the Chiren gas storage facility, which the framing of the ban also *de facto* forbade. The changes to the ban allowed at least to a certain degree the use of chemicals for conventional extraction and to a certain depth and pressure.[62]

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[60] US Energy Information Administration, (2014), Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 14 regions Outside the United State.

[61] "Shale Gas in Bulgaria – Is a Breakthrough Imminent", Natural Gas Europe, November 26, 2010, http://www.naturalgaseurope.com/shale-gas-in-bulgaria-is-a-breakthrough-imminent

[62] Center for Eastern Studies, (2012), Shale gas in Bulgaria, Czech Republic and Romania: Political Context – Legal Status – Outlook.

The shifting of fracking policy has revealed **a lack of strategic thinking on part of the Bulgarian government**, which seems torn between fostering diversification of energy sources and preserving the monopoly of Gazprom as a chief gas supplier. Amid the political crisis in Ukraine, other countries in the neighbourhood including the Baltic countries and the members of the Visegrad 4 Group sought ways to diversify their gas supply including by promoting unconventional exploration. Bulgaria, on the other hand, stalled efforts on regional gas infrastructure development, and instead pushed through amendments to the energy law that ease the start of the construction of the South Stream pipeline on EU territory.

Enhancing Bulgaria's energy security requires consistency of decision-making, which is crucial for long-term infrastructure investment decisions. Lack of predictability dissuades foreign investors from playing a more active role on the Bulgarian energy market, and allows dominant market players to lobby extensively the maintenance of the status-quo. Hence, the successful development of shale gas resources will require the independence of Bulgarian energy policy from shifts in the political colour of the government and from competing lobbies among the natural gas distributors and service companies. **State capture in the energy policy of the country by third-party interests**, mostly by Russian political and economic circles, **distorts Bulgaria's core interest**, which is the promotion of energy independence through domestic resources, diversified foreign supply and improvement of energy efficiency.

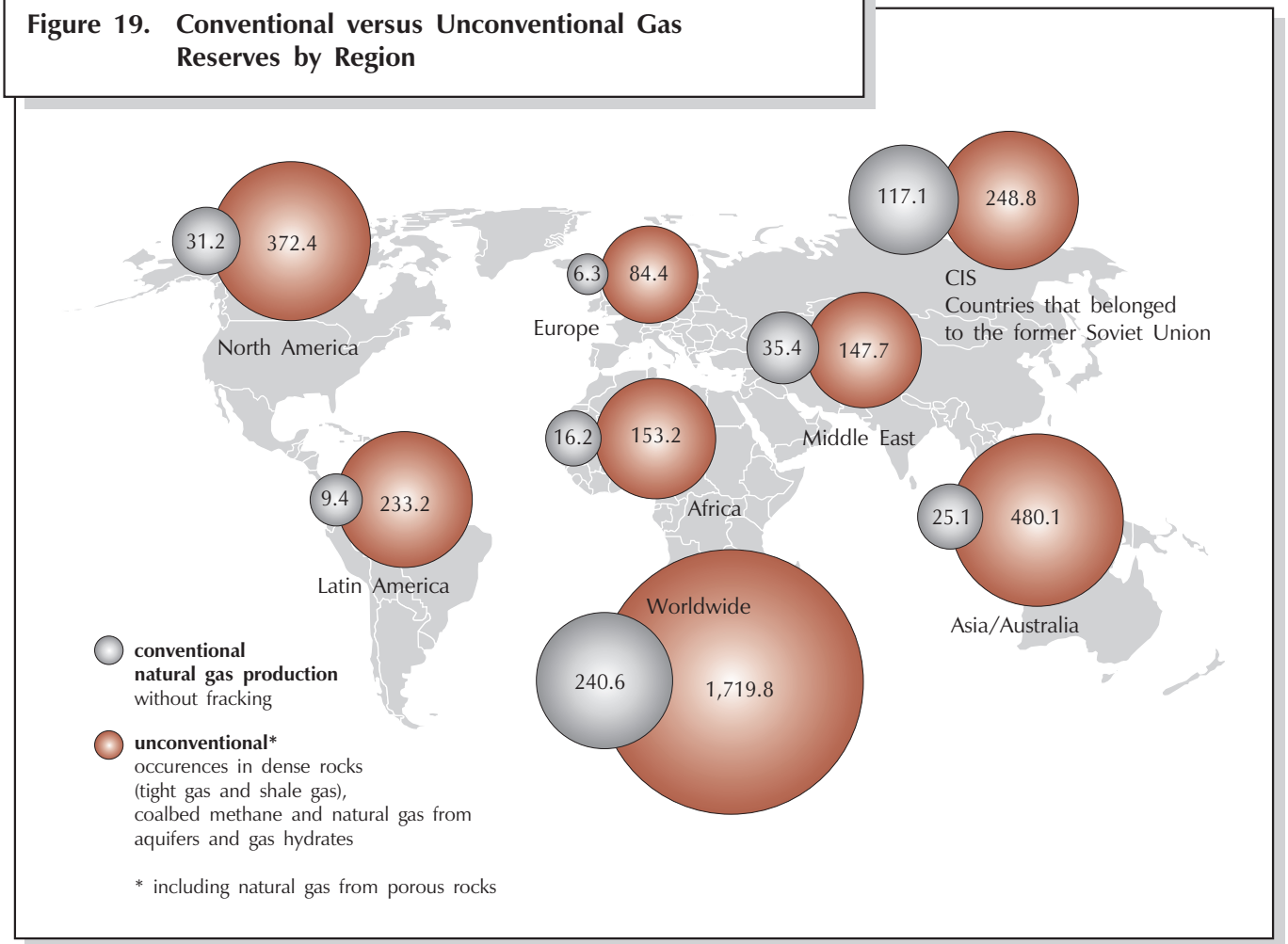
The Shale Gas/Renewables Nexus

The shale gas debate is also related to EU's climate change policy, which was recently updated with the Union's targets until 2030 and 2050. According to EU's new strategy, member countries have to reduce greenhouse gas emissions by 40 % below the level of 1990 by 2030 and expand renewable energy to 27 % of total energy consumption. The EU climate targets are very ambitious considering the trends in global energy demand until 2035. According to British Petroleum (BP) World Energy Outlook to 2035, primary energy consumption from renewables will hover around 14 % by 2035. For Europe (EU) and Eurasia (CIS countries, Turkey and the Western Balkans) the share is even lower – around 10 %. At the same time natural gas will remain the fuel of choice for the continent, as coal and oil demand declines somewhat (albeit not enough to grant big relief from greenhouse gas emissions).

Most of the increase in natural gas consumption is likely to come from increased imports from Russia, Norway and Qatar. Natural gas can provide the continent with the opportunity of decreasing its carbon footprint as gas emits almost half the amount of CO_2 that coal emits. In addition, under a scenario of enhanced exploration and development of unconventional gas resources, natural gas prices in the EU may go down substantially, allowing for a more comprehensive and economically sustainable shift in electricity generation from coal to natural gas. According to the EIA, by 2035 49 % of the natural gas production in the US will originate from shale gas extraction. With EU and Norway's conventional gas reserves on the decline, most of the new indigenous natural gas reserves will come from the development of an estimated 84.4 trillion cubic meters of

unconventional gas reserves in Europe spread all around Europe. The increase in unconventional gas output will hit two birds with one stone. On the one hand, it will diminish the EU's dependence on gas imports, enhancing the energy security of the continent, and on the other, it will help diminish the carbon footprint from electricity generation without an excessive cost burden on consumers.

Figure 19. Conventional versus Unconventional Gas Reserves by Region



Source: Federal Institute for Geosciences and Natural Resources.

Box 4. Poland – Shale Gas Development

Medium-term prospects for shale gas production in Europe seem brightest in Poland, where there is a combination of vast underground resources and relatively minor above-ground contentious issues. More recently, though, doubts about the shale prospects have become more visible. According to the Energy Ministry, commercial extraction of shale gas would begin this year. There is not a common agreement about the exact amount of natural gas trapped in shale rock formations. The EIA has said recoverable Polish shale gas reserves are some 148 trillion cubic feet and shale oil reserves are 1.8 billion barrels.

Box 4. Poland – Shale Gas Development (Continued)

The EIA also noted that the Polish Geological Institute had estimated recoverable shale gas reserves at a much lower 230.5 – 619.4 billioncubic metres (8-22 tn cubic feet). Although Exxon decided to pull out of shale gas exploration after disappointing initial drilling results, Poland, which aims to diversify its gas consumption away from Russian imports, granted more than a hundred exploration licenses in the past two years covering circa 2.5 mn acres of land. The government has continued to push through the shale gas agenda despite setbacks. The largest Polish refiner PKN Orlen agreed to purchase Exxon's exploration licenses at the end of 2012. The company drilled 6 exploration wells in 2013 with a total investment of USD 150 million. A partnership agreement between PGNiG, ENEA, KGHM, PGE, and TAURON Polska Energia have launched an investment plan in July 2012 to invest EUR 408 million by 2014 – 2015 in shale gas projects in the Northern part of Poland. The Polish government has stood firmly behind the new joint venture and might succumb to pressures from the industry to give tax breaks to shale gas exploration projects.

After dredging over a year on the creation of final shale gas legislation, in March 2014 the government of PM Donald Tusk passed new regulations that will help develop the source of energy. The government has said that it is dropping an original plan to create a state shale gas operator called National Mineral Energy Operator (NOKE) that would have to have a stake in each concession. The eventual passing of the shale gas framework by parliament, depending on how profits are taxed, and the dropping of the NOKE initiative should help moods in the shale gas industry. In addition, the Polish state-owned company, PGNiG, will oversee concession activities and the timely execution of production targets. One of the main changes was a delay of taxes. In a previous version of the bill actually released in October 2012, royalty taxes on shale gas were to total 40 % of gross profits from 2015. This scared a lot of industry players, many of which have already left Poland. In line with announcements made in 2013, PM Donald Tusk said royalty taxes on shale gas would de facto not be charged until 2020. Another previous sore point was the creation of a NOKE that was to have stakes in each concession. This also scared investors worried about excessive state interference. But the rules get rid of the NOKE conception, though state regulations will exist to protect state interests. Another change is to be the creation of one type of concession for exploration and for production, down from the current three variations. The government said this should help speed up commercial production of shale gas. Concessions will be given for 10-30 years. Environmental decisions tied to shale gas exploration will also be made more favourable.

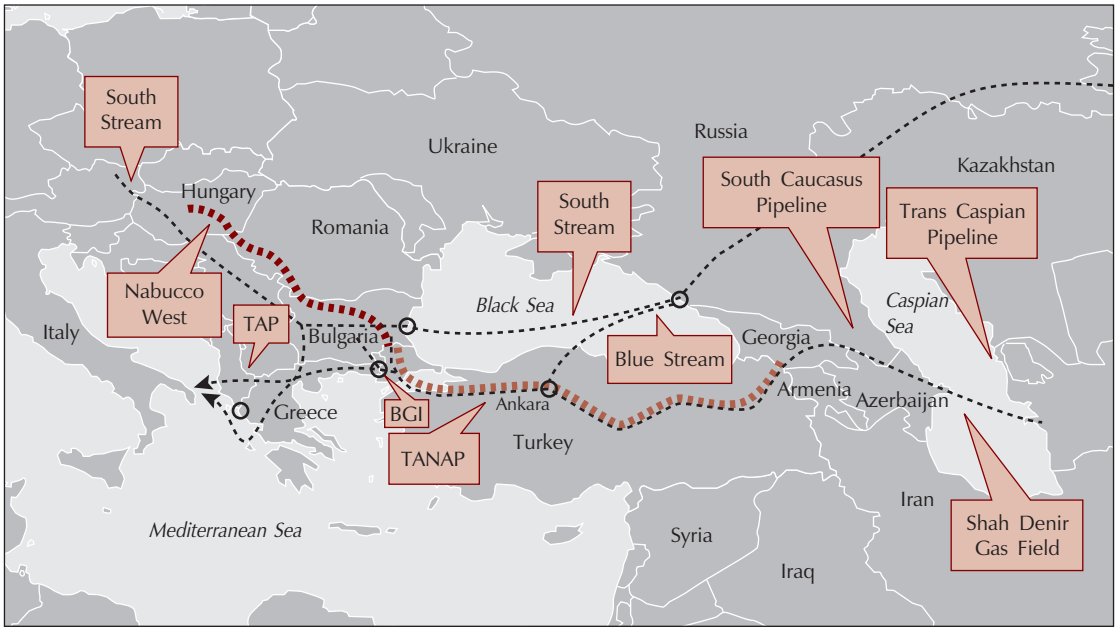
However, shale gas production in Poland could still be problematic due to higher production costs and potentially low purchase price agreements. Production costs are estimated to be 3-4 times higher than in the US due to the larger depth of reserves and the lack of infrastructure on the ground. The creation of a flexible fiscal/tax incentive, backed by a concessionary structure, will create the necessary commercial logic to justify entry into this market.

Gas Transit Arrangements and Involvement in International Pipeline Projects and Regional Interconnectors

Bulgaria meets around 90 % of its gas demand through imports from Russia through a single pipeline, the TransBalkan Pipeline. The import and transit pipeline systems are physically separated. **The transit system has been effectively reserved for Gazprom's use by contract until 2030**, although Gazprom has agreed to let

the transit pipeline to Greece in SW Bulgaria to be used for regional supplies. Under existing contracts, Bulgaria receives a payment from Gazprom for the transit of up to 17 billion cubic meters (bcm) annually for Turkey, Greece, and Macedonia above the actual shipping volumes as per the ship-or-pay clause. This was more than six times the entire internal demand of the country for 2010.[63] These current arrangements between Bulgaria and Russia for gas supply and transition are a constraint from security of supply standpoint, while also being in clear violation of EU's market liberalization guidelines with regards to third party access to pipelines and the "take or pay" clauses, utilized by Gazprom. The "take or pay" issue is related to payment of volumes of gas that have not been effectively taken by the Bulgarian importer. Similar complaints by other EU importers on non-compliance with EU legislation have triggered a wave of legal precedents against Gazprom on the part of RWE, Eni, Transgaz, OMV.[64]

Figure 20. The Southern Gas Corridor Competition



Source: CSD.

Bulgaria is at the crossing point of two major competing international pipeline projects for new gas supply to Europe and plans the development of as much as four interconnectors to all of its neighbouring countries, including reverse flow options with Turkey and Greece on the existing pipeline networks. However, the country has so far not provided detailed independent public cost-benefit

[63] "Gazprom Export – Bulgaria", accessed July 30, 2013, http://www.gazpromexport.ru/en/partners/bulgaria/

[64] "Gazprom lost the case on an important condiction in its European contracts", *Capital Weekly*, 25.10.2012, accessed from http://www.capital.bg/politika_i_ikonomika/sviat/2012/10/25/1933012_gazprom_izgubi_delo_po_vajno_uslovie_ot_dogovorite_si/

analyses[65] for the different options and there is no clear cut prioritization or preferred options, which leads to lack of transparency and frequent (real or perceived) inconsistencies in the Bulgarian position regarding major energy projects. This also creates higher energy security risks and uncertainty about the effects of these projects for Bulgaria's economy.

Nabucco and EU's Southern Corridor Pipelines

Bulgaria has voiced repeatedly its preference towards the development of the EU's Southern Corridor pipelines, and in particular the Nabucco project as part of its EU integration project. Through the BEH 16.67 % stake in the Nabucco's consortium, Bulgaria is a founding partner in the project, which aims to bring as much as 30 bcm of gas annually to Europe. The fact, that commercial funding was unlikely to be secured until capacity was booked and future transit fees budgeted for, led to the creation of a smaller Nabucco-West project. However, it became obvious that a phased development would be necessary with different pipelines delivering gas to the Turkish-Bulgarian border and another one transferring it across the region. In that context, an intra – 'Southern Corridor' competition emerged between other planned Southern Corridor pipelines such as TAP and SEEP plus eventual connection to the ITGI interconnector system. As the TAP project does not cross Bulgarian territory, the ITGB interconnectors would offer Bulgaria access to Azeri gas contracted by Bulgargaz and other traders and further on to SEE/CEE countries. It was obvious that, if affordable, a connection between the Trans-Anatolian gas pipeline (TANAP) and Nabucco-West would be the ultimate Southern Corridor solution for Bulgaria. The project may have also aided the development of a competitive national energy market, through adding competitors to the current sole supplier – Gazprom, and permitting half of the capacity to be available for third party access.

On 28 of June 2013, the Shah Deniz Consortium (SDC) announced its choice of the TAP pipeline for gas to be linked with TANAP in Turkey, dealing a heavy blow to the Nabucco idea, and effectively halting the project. This choice is expected to have far reaching implications not only for Bulgaria but also for Central and Eastern Europe and the Southern energy corridor – a cornerstone of energy security for the European Union, Central Asian and Caspian countries in the short to medium term perspective. Although the quantities of potential gas deliveries from Shah Deniz are too small to directly challenge Russian gas dominance, they could tilt critical gas market balances in SEE with a multiplier effect across Central and Eastern Europe.

The decision for the Shah Deniz consortium to name TAP as the priority pipeline for the deliveries of new gas supply from 2017 to Europe does not fulfil the strategic purpose of EU agenda for diversification. The TAP gas pipeline, instead would cross countries, whose dependence on monopoly gas exporters, including Russian, is far lower than the one facing the CEE region and is

[65] Over the last decade, the Center for the Study of Democracy (CSD) has championed the introduction and widespread utilization of internationally recognized energy project management principles and cost-benefit analysis tools such as Extractive Industries Transparency Initiative (EITI) and COST in Bulgaria (for more information on EITI initiative in Bulgaria, visit http://www.csd.bg/artShow.php?id=15111).

due to drop further in line with emerging into the prospective timeline alternative gas sources. The reliance of Greece on Gazprom gas has come down from 83 % in 2005 to 51 % in 2011. Italy's gas market is one of the most diversified in Europe and dependence on Gazprom gas is less than 38 %. Over the same period Bulgaria's dependence on Russian supplies has remained at the same high level well above 85 %.[66]

It seems that the selection of TAP over Nabucco West is indicative of a broader trade-off, in which South Stream scraps the southern leg of the pipeline, which allows TAP to be the only gas link between Greece and Italy, in exchange for the Consortium's dropping of the alternative Nabucco West route. Such an agreement was meant to effectively put an end to the Nabucco West project forcing the shareholders to write off substantial losses well in excess of 100 million euro, leaving a yawning gap for alternative gas supplies in SEE and CEE. The choice of TAP coincided with the buying by Azeri national oil company, SOCAR, of the Greek gas transmission company, DESFA. Gazprom, which also took part in the bid, at the final stage decided to withdraw from the competition. The latter raised concerns that there has been a **behind-the-scenes market-sharing agreement between the members of the Shah Deniz consortium and Gazprom**. The goal is that the Shah Deniz partners will not promote a competitive pipeline to the Russian-led South Stream, and Gazprom will not meddle in Greece's natural gas market.

The outcome of such a deal for the security of gas supply of the SEE and CEE regions is not solely associated with the availability of physical alternative gas flows but would decrease the CEE importers' bargaining power in on-going negotiations with Gazprom on prices, revision of the re-export ban, oil-indexation and other critical contractual terms. In effect, the result of a successful construction of the South Stream pipeline instead of Nabucco-West would further strengthen the ability of Gazprom and other Russian economic interests to directly influence political life in the region, largely ignoring the local interests of the countries.

South Stream

Bulgaria has also subscribed to the South Stream gas pipeline from its very beginning, despite the fact that there have not been publicly available cost-benefit or risk analyses of the project, for its Bulgarian part. The latter is to be operated by a company equally owned by Russia and Bulgaria, through Gazprom and BEH, which was set up in November 2011, following a 2009 Agreement of Cooperation between the two parties. Negotiations on the project have been opaque, characterized by pressure exerted from the Russian side during a number of unannounced visits from Gazprom's top management. Bulgaria has demonstrated a varying degree of willingness to proceed and up to a point was "kicking the can down the road" in the hope that the hot issues will be resolved at a higher EU – Russia level.[67] In November 2012, however, a memorandum of understanding (MoU) was signed that clarified to an extent the investment structure with few highly sensitive aspects discussed. A year later, on 30 October

[66] Statistics based on Eurostat data on energy dependence levels in the EU.

[67] Stefanov, R. and M. Tsanov. "Bulgarian Energy Policy", *Aspen Review*, (2012). http://www.aspeninstitute.cz/images_upload/files/Aspen%20Review/Bulgarian_Energy_Policy.pdf

2013, a bilateral agreement was announced stipulating that the construction of South Stream on Bulgarian territory would start by the end of 2013. According to the statement, the total cost of the project would be EUR 3.5 bln compared to EUR 3.3 bln referred to in 2012 and almost twice the cost estimated in 2008. The project is to be financed through 30 % equity and 70 % debt financing for the Gazprom-BEH consortium. BEH would finance its equity part through a loan from Gazprom's bank at 4.25 % interest for an amount of EUR 625 mln that exceeds the announced estimate for the 50 % equity part (EUR 525 mln) in the project.

A number of further questions are also raised regarding the lack of publicly available cash flow and demand projections; the time gap between the envisaged start date of gas transit (December 2015) and the first dividend payments (January 2018); the contingency issues related to dividends dependent on questionable pipeline capacity fulfilment requirements (at least 50 % of the 63 bcm) that delineate the commercial viability of the whole project and could turn out to be unrealistically high as no sufficient demand could be currently projected; the lack of clarity about the 70 % debt financing and expected high interest rates; compatibility problems between South Stream existing gas transit arrangements to Greece and Turkey and the related potential loss accumulation for Bulgratransgaz.

In addition to all of these issues, **the steady spikes in the price of the project since its inception have raised doubts about rent-seeking and poor resource allocation** by the state. The latter includes the uncertainty of revenues from transit fees as they are pegged to unrealistic assumptions of the actual volumes of natural gas flowing in the South Stream compared to the announced capacity of 63 bcm. Finally, the project also holds **little promise of improving the affordability aspect of energy security** in the country in the future without continuing subsidies from transit towards consumption, as it only provides a new route but not a different supplier. In December 2013, it was announced by the European Commission that the South Stream bilateral agreements (including the agreement between Gazprom and BEH) are in breach of EU law and need to be renegotiated from scratch.[68] According to the Commission, intergovernmental agreements cannot be the basis for the operation of South Stream as three major issues were highlighted:[69]

- EU's network ownership 'unbundling' rules need to be observed, meaning that Gazprom, which is both a producer and a supplier of gas, cannot simultaneously own and operate production units and transmission networks as well as trade.
- Non-discriminatory access of third parties to the pipeline needs to be ensured. There cannot be an exclusive right for Gazprom to be the sole supplier; and tariff structure needs to be made transparent after being renegotiated.

Transmission Network Challenges and Regional Gas Pipeline Infrastructure

Bulgaria's gas TSO, Bulgartransgaz, is operating a 2,645 km long network that reaches most of the country's largest cities. However, the distribution network is

[68] "South Stream bilateral deals breach EU law, Commission says", *EurActv*, December 4, 2013, accessed from http://www.euractiv.com/energy/commission-south-stream-agreemen-news-532120

[69] Ibid.

highly undeveloped and **residential demand remains only 6 % of the country's total gas demand.**[70] There have been plans for the expansion of the gas grid and the significant local gasification of cities but the process remains stifled by disputes between the transmission company and the main distributor, Overgas.[71] The other reason is that there has been only limited investment in the gas infrastructure by Bulgartransgaz despite its sound financial health based on solid transit tariffs. Overgas has proposed on a number of occasions to Bulgartransgaz to create a public-private partnership, which would invest in the gasification of the country. The planned investment according to the CEO of Overgas could amount to EUR 400 mln.[72] Currently, Overgas and the other smaller distributing companies have to pay transit fees to Bulgartransgaz for transmitting the gas to the end-consumers. The difficulties in negotiating the terms of access to the transmission network create a significant investment risk for distributors to expand the gas networks in the cities.

More regional approaches concerning supply, notably the construction of interconnectors and reverse flow links with Turkey, Romania, Greece and Serbia have become projects of immense strategic importance as a result of the lack of bargaining power and non-realization of national priorities regarding international pipeline projects coupled with the failure of far-reaching diversification efforts both through domestic production and through the promotion of alternative energy routes. Bulgarian diplomacy and companies could enjoy more influence on such smaller projects, making them an immediate priority on the agenda for achieving more competition of natural gas supply in Bulgaria, and potentially lower prices in the future. In addition, the EU has provided ¼ of the funds for all interconnectors to neighbouring countries, which makes the projects particularly cost effective for the country, though the question of ensuring gas supplies over the planned pipelines remains. As of September 2013, a sub-contractor has been selected for the construction of the reverse flow connection with Romania.[73] The Bulgarian part of the connection is constructed (up to Rousse) and is undergoing tests. However, for the under-river part, connecting Bulgaria and Romania, a contract has been signed between Bulgartransgaz EAD (Bulgaria) and Transgas S.A. (Romania) for project design and construction. The project is running behind schedule, as it was envisaged that the connection would be operational by Q1 2013.[74] The reverse flow connection with Greece is in its roadmap consulting stage and impact assessment and market interest analysis procedures are taking place in Bulgaria and Greece.[75]

As a whole, interconnectors and reverse flow connections are seen as essential for lowering energy security risks for Bulgaria, the surrounding region, and for

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[70] "Bulgaria's Natural Gas Sector: Country Profile", IHS, 2012.

[71] Bulgaria, (11.2008), Council of Ministers, Bulgaria Energy Strategy 2020.

[72] Peeva, V., "From an intermediary "Overgaz" is becoming a competitor to Bulgargaz", Mediapool, May 27, 2010.

[73] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria.*

[74] "The gas link with Romania delayed for next year", Mediapool, July 31, 2013.

[75] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria.*

the EU as a whole. The interconnectors' contribution to Bulgarian security of supply is three-fold: a) they allow reverse flow emergency supplies in the case of a supply disruption from other sources, and b) they enable import diversification for both the transit route and supply source, and c) they allow instant diversification and peak-demand balancing through virtual or at a later stage direct gas swaps. However, the share of pipeline capacity allocation between the countries sharing the interconnectors has not been decided yet, which, together with ensuring contracts for the supply of gas, has turned into a special point in the negotiations. The fact that despite EU financial support, it took Bulgaria more than three years after the January 2009 crisis to officially launch the construction of the first of these interconnectors (Bulgaria-Romania) shows that **the successful implementation of energy policies in the region faces various political challenges**, beyond financial and economic concerns. It is due to this reason that Bulgaria is facing legal action from the European Commission with regards to its failure to make sustainable progress in the area of reverse flow connections with neighbouring countries.

Box 5. Liquefied Natural Gas (LNG) as a Supply Factor

The demise of the Nabucco-West project has been seen as a failure of the Common European External Energy policy in the face of increasing dependence of the Central and Eastern European countries on Russian natural gas imports. However, the abandonment of a cross-Balkan gas link connecting the energy-rich Caspian basin with the gas hubs in Central Europe did not dissuade efforts for diversification along the Southern Corridor. A relatively new idea is to foster the construction and expansion of LNG facilities on the Mediterranean Sea. Recently built interconnectors between Hungary, Slovakia, Ukraine and Romania as well as introducing reverse flow options in almost all transit pipelines in the region, allows for an immediate and scalable growth in gas supply from indigenous or external sources – LNG and pipeline. The North – South Gas Corridor framework allows for integrating potential new LNG facilities as entry points for alternative gas supplies to the region and resides within the immediate grasp of the CEE governments. These efforts address immediate synergies and set the fundament for a more efficient mode of accommodating regional gas markets dynamics, individual countries' policies.

Existing LNG terminals in the region and planned new ones such as in the Gulf of Saros (Turkey), Alexandroupolis-Kavala (Greece) and Krk (Croatia) could significantly boost the resource base, increase the entry points from global gas; enhance gas market integration and trigger gas demand growth in the region. The LNG gas would not necessarily contribute in the short term to a significant reduction in gas prices but would enhance the security of supply, promote energy source diversification hence independence and improve the economics of new and existing projects in interconnectors, gas storage and pipeline transport. Even without full physical gas market integration a coordinated use of the free capacities at LNG terminals for direct or virtual gas swaps in the region could trigger immediate diversification of gas supplies even before the completion of planned interconnectors and the physical entry of alternative gas supplies.

The proposed new LNG terminal in the Gulf of Saros (Turkey) developed jointly with Qatar is well located to serve both a local Turkish European part gas market and via the Bulgarian and Greek interconnectors the whole regional market. The project is in early planning stage (announced at the

Box 5. Liquefied Natural Gas (LNG) as a Supply Factor (Continued)

beginning of 2013 with feasibility study ready by the summer of the same year) with proposed send out capacity of 6 billion cubic meters per annum. On the Greek side, the proposed new LNG terminals in Kavala (promoted by the gas company DEPA) or floating LNG in the port of Alexandroupolis (promoted by Copelouzos Energy Holding – CEH), enjoy certain advantages being part of the approved EU project list eligible for EU funding and enjoying the lobbying leverage of the Greek owned shipping sector, that has built a third of the world's largest LNG vessels and seeking to establish Greece as a regional LNG hub.

Croatia has also strongly pushed for the construction of an LNG terminal at the Northern Adriatic. The proposed LNG infrastructure at the island of Krk (Adria LNG) could allow for the regasification of up to 5 bcm/y supplying most of the natural gas needs of the countries in the Western Balkans. The terminal at Krk could also serve as an entry point of Qatari gas into the large Central European market. For gas traders, this would provide the opportunity of price arbitrage between Russian and Qatari supply at the European gas exchanges. In addition, increased liquidity on the CEE and SEE gas markets (virtually dominated by Russian gas) can create a competitive environment imposing downward pressure on prices.

b. Security of Oil Supply

The Bulgarian oil sector is entirely dependent on crude oil imports as the country's oil reserves are minimal at around 15 million barrels.[76] Bulgaria's Exploration and Production of Oil and Natural Gas company produced around 22 thousand tonnes in 2011. One way to boost the oil output is to invest in the rehabilitation of depleted oil fields in Tulenovo on the Black Sea shore and in Northwestern Bulgaria in the vicinity of Pleven. Most of the oil, above 80 %, is with Russian origin, while there is a more limited supply of Kazakh oil via the CPC pipeline and then via tankers from the port of Novorosiisk. Bulgaria consumed close to 80,000 barrels per day (bpd) or 3.8 million tonnes per year in 2012, around 20 % less than before the 2008 economic crisis. However, total crude oil imports are around 7.5 million tonnes per year as Bulgaria is a significant manufacturer of refined products from the Lukoil's Neftohim refinery and petrochemical complex with a capacity of 145,000 bpd, the largest refinery on the Balkans. After the privatization of the refinery, its output capacity was slashed from 220,000 bpd but plans for upgrade initiated in 2013 will see a significant capacity boost by 2015. Lukoil will invest USD 570 million in the upgrade of the existing refinery units increasing the output of the high quality EURO 5 diesel by 1.2 million tonnes per year.[77] Additionally, the Russian oil giant will build a new hydrocracker unit to come online in January 2015 expanding the capacity of the refinery by little over 50,000 bpd to around 200,000 bpd making one of the largest refineries in Eastern Europe and the single largest industrial enterprise in the country.

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[76] Nitzov, Boyan, R. Stefanov, V. Nikolova, and D. Hristov, "The Energy Sector of Bulgaria", Atlantic Council Issue Brief, April, 2010.

[77] Kennedy, Charles, "Lukoil Deal Makes Bulgaria Largest Eastern Europe Refiner", January 8, 2014, accessed from http://oilprice.com/Energy/Energy-General/Lukoil-Deal-Makes-Bulgaria-Largest-Eastern-Europe-Refiner

The distribution market is dominated by four companies including Lukoil Bulgaria, Rompetrol Bulgaria, Naftex Petrol and OMV Bulgaria. Nonetheless, Lukoil Bulgaria remains the largest distributor with revenues rising by 3 % year-on-year in 2012 to BGN 3.6 billion.[78] Together with the Lukoil refinery and port terminal, Rosenez, Lukoil is the largest company in Bulgaria contributing, according to the company itself, ¼ of the state budget revenue. Unlike in the natural gas sector, where the state-owned Bulgargaz yields significant influence on the domestic gas market, the downstream oil sector is entirely private. However, we can hardly talk about a hands-off approach towards the sector from the state. It influences the sector and its players via two main ways: 1) directly via the imposition of excise taxes and VAT on the fuel sales, and 2) indirectly by intervening in the market relations of the main players vis-à-vis one another and vis-à-vis the state.

Direct State Involvement – Price Formation

The Bulgarian state is directly involved in the formation of the fuel prices through the inclusion of excise taxes and value-added tax (VAT) on sales. According to the Bulgarian Oil & Gas Association, the VAT and excise tax on the diesel fuel contributes 40 % to the final price. In the unleaded A95 gasoline the taxing level is 44 %. The share of the taxes in the fuel price formation is in line with the EU legislation on the minimum excise duty of EUR 421 per 1,000 litres (0.421 cents per litre), and the Bulgarian excise duty is among the lowest in the EU at 0.424 cents/l.[79] Hence, the fuel price of A95 gasoline is the second lowest in the Union after Poland. With operational, refining and crude oil costs relatively similar in the different member states, Bulgaria has one of the lowest fuel taxation rates. Despite the low prices and the apparent liberalization of the sector, **there is high concentration of market power in the crude oil import and refining sector**, visible in the Commission for Protection of Competition (CPC) probing Lukoil Bulgaria in 2012 for abusing its monopoly power on the wholesale market for diesel and A95 unleaded gasoline. In March the commission found out that there has been an illegal agreement between Lukoil Bulgaria, Rompetrol Bulgaria, Naftex Petrol and OMV Bulgaria for the coordination of the price formation. Although three months later the commission announced that Lukoil Bulgaria's market behavior does not constitute a breach of competition law, there have been continuous allegations by non-governmental organizations and large fuel clients that by providing wholesale buyers with discounted fuel prices in exchange for loyalty, the company is dominating the downstream market in effect preventing the entry of international competition.

Indirect State Involvement – Political Protection

Bulgaria's 100 % dependence on crude oil imports, the majority of which of Russian origin has influenced two Bulgarian governments to issue stricter control

[78] "Lukoil Neftohim Bulgaria again tops the ranking of "Capital" 100 largest companies", *Dnevnik*, June 27, 2013.

[79] European Commission, Excise Duty Tables: Energy Products and Electricity – DG Taxation and Customs Union, July 2013.

over the business operations of the Lukoil Neftohim and Lukoil Bulgaria. The Bulgarian Customs Agency has tried to halt the practice of cooking the data coming from the tax warehouses storing the fuel products. In 2011, the director of the Customs Agency revoked Lukoil's refinery license after the company declined to install measurement devices at the entry and exit points of its fuel warehouses. The Customs Agency returned later Lukoil Bulgaria's license to sell fuels, following a several-month legal dispute between the two sides. The agency justified the returned license, saying that the oil refinery installed all the needed measuring instruments at its warehouse and thus complied with the new legislation for trading with excise goods. Lukoil Bulgaria officials confirmed the motion, approved also by the regional Court, which was in charge of the legal dispute. The company, however, has been given another 18 months to install all instruments at its port fuel depot Rosenez. In October 2012, the Customs Agency changed regulation № 3 requiring all tax warehouses to install measurement facilities until March 31, 2013 at each point where the fuel can enter or exit the facilities for sale purposes.

In April 2013, after customs officials noted the absence of installed devices the saga repeated itself. The Customs Agency again withdrew the license of oil refinery Lukoil Bulgaria for operating a tax warehouse which is a product pipeline with adjacent bases connecting the refinery with Sofia. In addition, the decision took into account findings from inspections that the volume of fuel at the warehouse did not correspond to the reported amounts. In response, Lukoil immediately appealed this decision before the administrative court, accusing the Customs Agency of administrative arbitrariness. It said that it had complained to the Finance Minister on the case, saying that the instalment of the measurement devices requires more time and is an excessive financial burden to the company, which implies unfair treatment by the state. Two days later, the administrative court in Sofia stopped the administrative decision by the Customs Agency in unprecedented speed.

The argument that the instalation of measurement devices constitutes excessive financial burden on Lukoil Bulgaria seems ungrounded considering the dominant position of the company on the Bulgarian fuels market. In addition, its refusal to abide by the government's regulations and the quick revocation of the state license has placed the Bulgarian consumers under increased energy risk. During every tax crisis with Lukoil the company has threatened to cut the supply of finished fuel products to the market, and hence has been able to influence milder subsequent treatment by the government. In November 2013, the Customs Agency sharply changed its position towards the measurement devices officially, stating that the existence of tax measurement devices is considered "department secret", which means that **the Customs Agency will no longer provide information about the current status of instalment of measurement devices**. This comes at a time when the Supreme Administrative Court is looking at Lukoil's complaint about the Customs Agency's regulation of the instalment of measurement devices. The Russian company lost the case at first instance and has brought the case to the highest court of order.

Overall, **Bulgaria's oil sector remains not fully transparent** and not entirely independent of state involvement at least partially helping the dominant company

preserve its monopoly status. Moreover, different sources point to **the existence of substantial shadow sector in the oil industry**, in which almost a third of all refined products are not accounted by tax authorities. Estimates of the size of this underground market vary between EUR 800 million to EUR 2 billion.[80]

Box 6. Balancing Geopolitical Interests – the Case of the Burgas-Alexandroupolis Pipeline

The TransBalkan pipeline also known as Burgas-Alexandroupolis was dubbed one of the strategic ways of avoiding the Bosphorus strait for the passage of crude oil tankers. The pipeline was planned to be built by a consortium consisting of the BEH, the Greek energy consortium HELPE-Traki, as well the Russian Rosneft, Transneft, and Gazpromneft. The Russian consortium would have held 51 % of the venture, which means that the Bulgarian and Greek side would have divided their participation in shares of 24.5 %. The change of government in Bulgaria in 2009 brought a centre-right government of Boyko Borissov, which was quick to change Bulgaria's energy priorities and abandon the project. The official explanation was the environmental evaluation of the pipeline, which reached the conclusion that the dangers for a potential oil spill close to some of the largest sea resorts of the country poses too big of a danger. The unofficial explanation for the change in Bulgaria's position was the Bulgarian government is afraid that the pipeline does not yield enough rent to cover for the investment and maintenance costs. Transit fees are expected to vary between USD 20 and USD 40 m annually, which is well below the Bulgarian proposal of USD 330 m.

Burgas-Alexandroupolis has been also stalled because of the general geopolitical situation. Russia, on the one hand, will not be able to supply enough oil for the pipeline. Currently, 80 % of Russia's oil exports go to the EU via pipelines through Ukraine and tankers through Bosphorus. Another 12 % go to Asia, but this number is likely to rise as China and Russia opened this year a major pipeline. One of the ways for Russia to secure the capacity of the Transbalkan pipeline is to use the Caspian Pipeline Consortium, which brings oil from the Tengiz fields in Kazakhstan to the port of Novorosiisk. The capacity of the pipeline is similar to that of Burgas-Alexandroupolis, which makes it unlikely that its supplies will be enough to fill the new pipeline. Despite attempts for the expansion of its capacity, the CPC could not be included in the Balkan project in the short run.

Moreover, the route of the Transbalkan pipeline, despite being the shortest and most economically viable, goes against the new geopolitical redistribution in the Black Sea region. The energy rapprochement between Russia and Turkey has made the alternative oil route, Samsun-Ceyhan, more attractive. This Black Sea-Mediterranean oil link is part of a larger triangular cooperation between Russia, Italy and Turkey. The Italian giant "Eni", which has also a 50 % share in *Blue Stream* and *South Stream,* is looking to capture the oil transit market. It is already involved in oil exploration in the Russian Caspian shore, which could secure additional oil for the Samsun-Ceyhan connection.

[80] Nitzov, Boyan, R. Stefanov, V. Nikolova, and D. Hristov, "The Energy Sector of Bulgaria", Atlantic Council Issue Brief, April, 2010.

2.3.3. Sustainability vs. Affordability Challenges: Costs and Operational Stability Risks

The EU's strategic energy policies set ambitious goals for reaching a carbon-neutral power supply in Europe by 2050. The strategy is seen by many as the only sustainable approach to the future economic development of Europe. Expansion of renewable energy production and introduction of clean technological solutions in Europe's industrial and household sectors is being incentivized on EU and national level, including through subsidy schemes (e.g. feed-in tariffs for renewable electricity production and CHP cogeneration). However, many challenges, lie ahead on the road to 2050. In fact, the renewables take-off brings about far-reaching consequences that affect the way electricity systems are operated in terms of both costs and the operational stability. Bulgaria is one of the EU countries where **state failure to adequately accommodate European policies has led to exponential growth of renewable energy production**, which posies risks to the balance of the electricity system.

Booming Costs

During the 2009 – 2013 period, a total of 1,568 MW of renewable energy capacities have been installed in Bulgaria, including 942.1 MW of photovoltaic and 342.9 MW of wind power generating capacities.[81] Overall, one of renewable energy capacities installed in the country amount to 1,651 MW with more than 80 %, of which installed between 2009 and 2012.[82] In 2012 alone, 136 MW of wind (84 % growth y-o-y) and 823 MW of solar energy (523 % growth y-o-y) generating capacities have been connected to the electricity grid, while projections for the next 3-5 years indicate that further 1,741 MW of solar and 651 MW of wind electricity generating capacities will be connected to the grid.[83] Similarly to the situation in other European countries, the exponential growth of renewable energy installed in Bulgaria has come about as the result of the introduction of feed-in tariffs (FITs) for the development of renewable and CHP energy production. In Bulgaria, the price for solar and wind energy is respectivelly EUR 118.13 MW/h[84] and EUR 66.35 per MW/h[85]. For reference, the price for electricity produced by Kozloduy NPP is EUR 13.5 per MW/h.[86] There was also almost a threefold increase in the purchased amounts of CHP cogeneration electricity in 2012 at prices between EUR 65 per MW/h and EUR 70 per MW/h.[87] There is a 'green' supplement for subsidizing the higher prices of renewable electricity of EUR 5.505 per MW/h and a 'brown' supplement of EUR 1.915 per MW/h, both paid through the final consumers' bills.

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[81] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria* and data by the Bulgarian Photovoltaic Association as per December 2013.

[82] Ibid.

[83] Ibid.

[84] SEWRC website, www.dker.bg

[85] Ibid.

[86] Ibid.

[87] Bulgaria, (07.2013), Ministry of Energy and Economy, *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria*.

Box 7. Lessons from Renewable Energy Development in Spain

Spain has been one of the countries with the most outstanding growth of renewable energy production in the period between 2007 and 2013. At the same time, large financial deficits in Spain's energy system have been accumulated as a result of a widening gap between the sum paid by companies to power generators and the amount utilities have recouped from their customers. The main contributor to the deficit problem was a poorly designed policy that kept consumer rates low even as supply costs climbed, so the true costs were never passed on to the user. According to Bloomberg, this annual discrepancy between utility payments to renewable power producers and the revenue they collected from customers was 5.6 billion Euros ($ 7.3 billion) for 2012, despite the introduction of new taxes. The trend is worsening, as the 2012 gap represented a 46 % increase over the previous year's shortfall. All told, the entire deficit – which has been growing since 2005, but really took off in 2008 with the financial crisis – exceeds EUR 25.5 bn.

The Spanish government has proposed new measures to address this situation, including a 7 % tax on generation, and a drastic cut in subsidies for new clean energy projects. To deal with the financial ramifications of this issue, the utilities are working to bundle this increased debt into securities that will be sold to investors (to be paid by consumers on future electricity bills – or so the securities investors hope).

Meanwhile, in March, Fitch downgraded five existing Spanish electricity tariff deficit securizations, citing the structural imbalance and the negative trend observed on the overall electricity system cash flows, as well as the uncertainty of the regulatory environment affecting the electricity sector. Despite the government's efforts in 2012 to tackle the on-going tariff deficit problem, Fitch believes that the Spanish electricity system will likely continue generating tariff deficits beyond 2013.

On the one hand, introducing FITs is a powerful mechanism to attract investment in the renewable energy sector, and to accelerate the transition to cleaner and lower carbon energy as they provide long-term contracts (usually 20 years) for electricity generated from RES. This helps attract private investment, and engages citizens, farmers, businesses and investors directly in the transformation of the electricity system. FITs have been implemented in different jurisdictions around the world, and most prominently in the EU and the US, and despite all the criticism they have received, they remain one of the most widely used renewable energy policies. However, if a comprehensive policy to scale-up privately financed renewable energy investment is implemented, it is also necessary to establish a credible, long-term mechanism to ensure that those costs will be recovered over time. **This policy includes ensuring that the overall framework has the broad support of tax-payers, and that it is based on clear and well leveraged financial and capacity demand projections, which would make it resilient to changes in governments, and overall economic conditions.**

As was the case in some other European countries (namely Spain, Czech Republic), it could be said that to a large extent **the introduction of FITs in Bulgaria was mismanaged and has led to the creation of a speculative investment environment because it was not part of a strategic framework**

planning moderated with adequate subsidization buffers. Large deficits started accumulating in the period after subsidy schemes were introduced in 2008, as the costs of generating electricity rose faster than what utilities can lawfully recover from electricity rates, while capacity demand actually shrunk during the economic crisis. In view of large untapped energy efficiency potential in addition to modest economic growth projections for the Bulgarian economy, it could not be expected that energy demand would fluctuate significantly away from the pretty much levelled trends of the last 10 years.

Besides the effect from the renewable FITs, price hikes have also been further exacerbated by the cogeneration subsidization that is often the subject to speculations. According to government officials, "booming sale of CHP electricity frequently occurs without meeting the minimum permission conditions (e.g. reaching required levels of high-efficiency production, sale only after primary production necessities are met)".[88] The root cause for the emergence of the subsidization gap is the fact that the amount by which electricity prices can increase is regulated by the state. **The independence of SEWRC as a regulator is highly compromised** and real market reflection, including accounting for renewable subsidization, is constrained by evident political and social circumstances. The liquidity issues created as a result of subsidizing the renewable and CHP sector coupled with the losses occurring from other long-term purchase contracts, cold-reserve management and "black hole" investment projects, inevitably trigger large deficit accumulation primarily for NEC and the whole energy system on Bulgaria (See Section 3). According to different estimates, electricity produced from renewable sources **accounts for 13 % of the electricity available for final consumption and for 36 % of the final electricity price mix**.[89] Estimates of the cost of renewable FITs paid by consumers in Bulgaria vary from EUR 400 m (excluding newly-built hydropower capacity) and nearly EUR 650 m.[90] **EUR 150 m is the estimated annual deficit** – the sum that could not be recovered by electricity rates but is payable to producers under the FITs arrangements.

From an investment security standpoint, the approach to renewable energy development was initially flawed from the very beginning in 2008 as it did not provide adequate FITs buffers, while also not accounting for market, social and economic risks in a country with persistently high rates of energy poverty. The Bulgarian authorities failed to step in pro-actively and cut subsidies when the renewable investment bubble continued inflating over the 2010 – 2012 period – there were caps on new capacity introduced while RES outputs grew beyond control**. The possible crisis management options for policy manoeuvring during the 2014 – 2020 period are very limited and include mostly retroactive measures, such as introducing new grid access tariffs, capping profits, introducing various tax cuts or production freeze schemes.** It is highly likely that the problem will remain politicized while temporary remedies could achieve little to no effect – projects often are entitled to receive subsidies over a 20 years period.

[88] "Assen Vassilev: The surcharges for "green" and "brown" energy are remained", Energy Online. bg, 17 May, 2013, accessed from www.energyworld.bg/2013/OS/асен-василев-всички-такси-за-зелена-и/

[89] Data by the Bulgarian Photovoltaic Association quoted by www.renewables-bulgaria.com on December 12, 2013.

[90] Tasev, A. "Energy on crossroads – or what can be done", Trud, July 3, 2013.

The adjustment and remedial costs will remain high regardless of the measures. Furthermore**, this would inevitably denigrate the investment environment, exacerbate debt servicing risks and invite a deluge of lawsuits challenging the legality of such measures.** The net effect and the outcome scenarios will also depend to a great extent on the price levels – the higher the price, the lower the gap between FIT and price. Hence, the survival of subsidies is conditional upon adopting a policy for targetted social support for energy poor consumers and **fostering energy efficiency on a mass scale rather than subsidizing prices**. Positive measures could also be related to developing a national strategy for more active social engagement by the renewable sector, including adopting mandatory local education and R&D investment schemes, community 'give back' programs, NGO and expert community engagement, etc.

Power Ramps: Costs and System Stability Risks

Another immediately appearent shortfall of abrupt growth of renewable electricity production is that renewable energy supply is intermittent in its very nature and solar and wind power facilities cannot offer operational flexibility and respond to fluctuating electricity demand. In addition, long-term supply contacts mandate the purchase of RES energy which creates severe limitations for the sale of conventional electricity, during the months with the largest number of sunshine hours and/or adequate wind flow. RES also impose an additional cost for balancing capacities. RES pose numerous challenges, including reduced operating hours and extra management expenditures – and hence profitability – of other generators used for back-up while also potentially creating the need for constructing adequate infrastructure to integrate the varying output of different RES. More importantly, they put stress on the system's stability and require more flexibility and back-up resources in other parts of the power system, with **the greatest risk being the low level of demand in the April – May and September – October periods** when demand collapses below 2600 MW in the daytime and 650 MW at night – too little to keep the system on standby and in stable condition.

An issue arises from the fact that RES introduce a new layer of complexity to load fluctuation. Traditionally, power generation follows the load, i.e. the sum of the requirements of all consumers connected to the power grid, plus losses throughout the grid itself. Although the load varies throughout the year (summer vs. winter), the week (working day vs. weekend) and the day (night vs. daytime), such variations are largely foreseeable. Power plants are dispatched (i.e. called upon to generate electricity) following the merit order according to their marginal cost. However, with the introduction of substantial RES production, load fluctuation problems are further intensified. Wind farms and photovoltaic systems generate electricity only upon minimum thresholds of radiation and/or wind speed. As long as the share of variable RES in a given market/power system is low the system can operate as usual. Yet, as RES start to be deployed on a large scale, new challenges emerge. This is precisely the situation that many European countries, including Bulgaria, are facing today. When the wind stops blowing or the sun stops shining the remainder of the installed capacity has to make up for the loss of variable RES. On the other hand, when sun is high and winds are blowing, FITs scheme mandates purchase of RES production, so mandatory quotas are achieved and days with unfavourable conditions are compensated for, often

at the expense of conventional electricity producers. Such sudden and massive demand peaks, so-called power ramps, create new requirements for conventional generators, including fossil-fired, nuclear and dispatchable RES.

The "start-stop" mode of conventional power plants operation is very costly and environmentally harmful**.** Hydropower plants are the most responsive plants and can be called upon to generate electricity within very short timeframes. In Bulgaria, back-up requirements are almost entirely met by hydropower plants production. However, power ramps create additional security requirements and call for further investments in an overly decapitalized energy system; the overall environmental and financial risks associated with RES back-up capacities plus the opportunity costs from reduced operating hours and hence severely limited profitability pose a serious threat to the sustainable development of renewable energy in countries like Bulgaria.

2.3.4. Electricity Market Liberalization Challenges

Bulgaria's energy sector transformation towards becoming a well-functioning part of the planned European internal energy market, as required by the Third energy package of the EU, is taking place at a very slow pace. Given that the inevitable changes will have an effect on both industries and individual consumers, politicians have been reluctant to sign on the dotted line and initiate the final stages of liberalization of the retail market. This has made ample room for speculation on the potential outcomes of this process, based on rather limited technical knowledge and expertise. **The date for full liberalization is still unclear and has been changed several times.** A growing number of commercial consumers have switched to the unregulated market. Although on paper all consumers, including small enterprises and households, have the right to switch their supplier since 2007, this is still not possible as the necessary regulatory changes have not yet been introduced.

Table 5. The Third Liberalization Package

Key aims:[91]	Key provisions:[92]
• reducing prices and increasing efficiency through enhanced competition • increasing investment and innovation in new technologies • diversification of energy supply leading to energy security • emphasis on RES in line with climate change provisions	• unbundling of transmission and distribution network operators from vertically integrated undertakings • ensuring the independence of national regulators and determining their authority • establishing rules to enable the functioning of retail markets

[91] Directive 2009/72/EC, (13.07.2009).

[92] CSD, "Energy and Good Governance in Bulgaria: Trends and Policy Options", Sofia, 2011.

As electricity has traditionally been provided as a universal good, selling it on a competitive market has been a slow and long process that is not yet completed in several MSs, including Bulgaria. The string of directives providing increasingly specific rules is reflective of **the reluctance of MSs to commodify electricity**. While industrial and retail markets have been open since 2004 and 2007 respectively, many MSs maintain some form of regulation on small commercial and domestic consumers.[93]

The assessment of the European Commission from November 2012 regarding the progress towards the development of a fully competitive electricity market in the EU suggests that there is still a lot of work to be done before the 2014 deadline for the full implementation of all legislative provisions, running of efficient cross-border markets and the implementation of plans for smart grids. MSs are persistently reluctant in changing national legislation to be more outward-looking, putting several obstacles ahead of market liberalization. To a large extent, this is the result of politicians' primary concern with maintaining public support, particularly at a time of economic hardship. In order to achieve the long-term goal of creating a competitive environment, which will lead to more competition and lower consumer prices, it is necessary to introduce new measures and invest in the modernization of the electricity grid. These changes require significant financial costs, which are ultimately borne by the general public through their utility bills. In the current climate, **an increase in energy prices would lead to widespread discontent, which politicians want to avoid, even if this leads to EU sanctions**. In Bulgaria, it is particularly apparent that short-term interests prevail over long term societal benefits.

Bulgaria's Progress

Bulgaria has made only moderate progress towards putting in practice the requirements of the EU Directives and lacks a comprehensive strategy and sufficient financial resources for the overall restructuring of the sector. This is primarily the result of short-term planning dictated by personal interests and populist agendas, rather than by long-term social benefits. While in principle all consumers have been free to choose their electricity supplier since 1 July 2007, as required by EU law, in practice they are still subject to state-regulated prices and can only purchase electricity from the only authorised supplier in their area.[94] Currently, a more viable option for these consumers to reduce their costs are on-site generation (using renewable resources such as solar and wind power) and investing in energy efficient technologies and materials.

Albeit slowly, some progress was made towards liberalizing the electricity market by changing key legislation to comply with EU requirements, while some other policies hinder the process. In particular, the introduction of additional taxes for producers of RES (in particular solar and wind power, which represents further discrimination in the sector) go against EU requirements,

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[93] Slovenia, ACER, "ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2011", 2012, Ljubljana.

[94] Ministry of Economy, Energy and Tourism, (2013), Development of the power market, http://www.mi.government.bg/bg/themes/razvitie-na-elektroenergiiniya-pazar-222-299.html

effectively becoming market barriers, as the liberalization directives encourage the use of RES. **These taxes represent a significant cost for the small and medium renewable energy producers and make Bulgaria an unpredictable international trade partner.** These policies led to a formal notice in September 2011 and a reasoned opinion in February 2012. The European Commission referred Bulgaria, to the European Court of Justice in January 2013 for failing to fully transpose EU rules on the energy markets. Bulgaria has only until 1 July 2014 before it has to start paying daily fines of EUR 8,448 if it fails to rectify its shortcomings. The public outcry against high electricity prices and the lack of competition among suppliers at the beginning of 2013 was a clear sign that the current system needs to change. At the same time, **public opinion is among the main factors slowing down energy reforms as people are much less willing to accept any more price increases**, which are necessary to implement the required changes. Energy poverty in Bulgaria is widespread, and although nominal prices are the lowest in Europe, they are among the highest in terms of purchasing power parity.

In an attempt to soothe public discontent about electricity prices, the government introduced amendments on the *Energy Law* at the beginning of July 2013, which are a clear sign of a U-turn on the progress made in the energy sector. One aspect of the reform is particularly worrying. The "green" and "brown" fees for RES and cogeneration (introduced by the previous government) will be transferred from the transmission tariffs to the producers and will be borne entirely by the domestic market instead of being imposed on exports too. This means that instead of eliminating these tariffs, the new government will simply 'shift' them and electricity on the domestic market might become more expensive than the exported energy. The fundamental weakness of this approach is that the absolute revenues generated in the system will decrease. Therefore there will not be sufficient funds for the maintenance and upgrade of the system. Furthermore, the reform will combine all tariffs in one, making them much less transparent and difficult to understand.

In order to guarantee the sustainable modernization and liberalization of the energy market and comply with EU regulation, **the government should focus on implementing reforms in three main areas**:

- ensuring total **independence of the regulatory authority**, as well as the effectiveness and quality of its decision-making process;
- unbundling of the transmission and distribution system operators in order to enhance competition;
- **extending access to the open electricity market** to small enterprises and household consumers.

Regulation of the Unregulated Market

Although the aim of the Third Energy Package is liberalization, this does not mean that the electricity and gas markets will be left completely unsupervised. Instead, in order to ensure that the free market is run properly, the European Commission has emphasised the importance of an independent national regulatory authority, with sufficient power and discretion to guarantee the correct application of the

legislation in this field.[95] **In the case of Bulgaria, public consultations might also be necessary in order to ensure that social needs are also taken into consideration in the decision-making process.**[96] This independence can be achieved by allocating a separate budget to the regulator, which it can implement autonomously, as well as by setting up a limited term of office, so that no one individual can gather too much authority over a prolonged period of time.

In theory, once the market is fully open, final consumers should be able to choose the supplier, who offers them the most suitable electricity deal for their consumption needs. However, some aspects of the market will still be subject to some regulation, namely network tariffs, which are an important component of the final price paid by customers. The regulator is responsible for approving these tariffs or the methodology used to formulate them, as well as monitoring the effectiveness of market liberalization in collaboration with the national competition authority. It also has to ensure that the transmission and distribution system owners comply with the rules governing their operation and penalise them accordingly if they don't. In relation to this, the regulator should ensure that new market players are granted network access in order to avoid the formation of regional or national monopolies in the electricity sector.[97] The greatest challenge the regulator is facing in **creating a competitive market is designing and implementing policies at the lowest social costs possible**.

Key challenges:

- The SEWRC already acts as a market regulator, however, **its independence and the quality of its decision-making have been deemed inadequate**. The European Commission has identified several operational shortcomings, such as insufficient financial and human resources necessary to attract independent and qualified professionals. Experts often leave due to low salaries, preventing the Commission from maintaining a strong internal knowledge base, necessary for a coherent long-term operation.[98]
- The independence of the regulator derives from its **commissioners**. Currently they **are appointed and dismissed by the Council of Ministers**, as stipulated by the *Energy Law*.[99] There has been a proposal to assign the task of appointing the members of the commission to the Parliament,[100] which should make the choice more democratic and open to debate, reducing the chance of political appointments. Removing the formal potential for political affiliations or influences should have a positive effect on the autonomy of the regulator. However, it is much more difficult to limit the influence of private economic

[95] Directive 2009/72/EC – preamble 33.

[96] Ibid., Article 35.

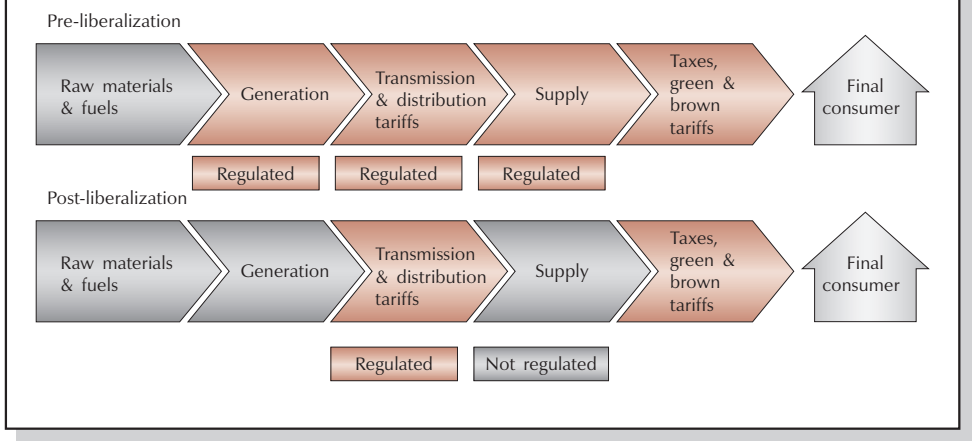
[97] Ibid., Articles 36 and 37.

[98] European Commission, "Findings and recommendations related to Bulgarian energy policy", published by the Ministry of Economy, Energy and Tourism, http://www.mi.government.bg/bg/theme-news/konstatacii-na-evropeiskata-komisiya-i-svetovnata-banka-za-balgarskiya-energien-sektor-1194-m0-a0-1.html

[99] Bulgaria, *Energy Law*, Art. 11, para 2, State Gazette, Issue 66, July, 2013.

[100] "The MPs passed an amendment to allow SEWRC to be appointed by parlament", Capital Weekly, 19.02.2013, http://www.capital.bg/politika_i_ikonomika/2013/02/19/2006280_deputatite_glasuvaha_dkevr_da_se_izbira_ot_parlamenta/

Figure 21. Power Market Prior to and after Liberalisation



Source: CSD.

interests in the sector through regulations. Therefore, the administrative procedure should also be specified in more detail to make it as transparent as possible.

- A key issue that needs to be addressed is the degree of **political influence** that is exercised over the Commission once the market is fully open. Previous attempts by government officials to stop regulated prices from rising for fear of public discontent at the time of renegotiation with suppliers[101] should be avoided. Furthermore, the industry is often influenced by **private interests**, which have poor corporate governance standards. These interests have often been reflected in SEWRC's decisions when prices increased, instead of promoting efficiency and system savings. Switching to a free market should ensure that prices are formed based on supply and demand, eliminating any incentive for political involvement.
- SEWRC has not always fulfilled its duties as a strict **regulator** by failing to impose appropriate and proportional sanctions[102] to the three distribution system operators, when they did not comply with the *Law on Public Procurement* by employing firms which are part of their vertically integrated undertaking and avoiding tender procedures.[103] If this is the result of a political pressure, improving the independence of the authority should lead to more effective law enforcement and consequently to a more competitive market.
- At the core of the free energy market is the idea of prices being dependant on supply and demand, rather than regulation. The *Energy Law* stipulates that the **prices of electricity should not be subject to regulation** if the Commission deems that sufficient competition exists and prices are set according to market forces.[104] However, in practice, many components of the final energy bills for

[101] Capital Weekly, April 10, 2013, http://www.capital.bg/politika_i_ikonomika/redakcionni_komentari/2013/04/10/2039405_nezavisimi_regulatori_drug_put/

[102] Bulgaria, *Energy Law*, Art. 21, para. 43, State Gazette, Issue 66, July, 2013.

[103] Public Financial Inspection Agency „Results of the public procurement inspection of the three distribution system operators", http://www.adfi.minfin.bg/bg/pubs/73

[104] *Energy Law*, Art. 30, para. 3.

households and small enterprises are still regulated, including the prices paid by final consumers to their supplier. As one of the key roles of the regulator is to monitor and promote the opening of the market, the Commission will have to shift its focus from setting tariffs to promoting competition by facilitating the entry of new market players at all stages of the electricity system.

- A proportion of the final consumer bill is composed of different taxes, which will be regulated even after the market is fully liberalised. These include tariffs for the access and use of the transmission and distribution networks, as well as the **public service obligation tax** which covers the obligation of the government to purchase electricity produced from RES (green and brown fees). The so-called 'green' fees have raised great public concern and are often identified as the main reason for the constantly increasing electricity prices. SEWRC introduced additional fees for RES producers to have access to the electricity network, which were quickly revoked by the Supreme Administrative Court, only to be recently replaced by yet another similar fee. A great challenge for the regulator is to **find a balance between supporting renewable energy resources and the rise of retail prices**.

Unbundling

In order to guarantee non-discriminatory access to the transmission network, the Bulgarian transmission system must also be independent from any vertically integrated undertakings which are involved in the generation and/or supply of electricity. The Directive offers three possible unbundling options for transmission system operators:

– Ownership unbundling (OU);
– Independent System Operator (ISO);
– Independent Transmission Operator (ITO).

The OU option provides for an entirely separate legal entity to assume both the ownership and the operation of the transmission system. In case this new entity was previously part of a vertically integrated company, the latter may retain only a minority stake, without voting rights in the operator. As in most cases this entity is state-owned, control over the new TSO is entrusted to a public authority different from the one that administers the vertically integrated company.
If a MS decides for an independent system operator, then the vertically integrated company it was originally part of retains ownership of the transmission system. The regulatory authority then certifies an independent system operator, which must be legally separate from the vertically integrated company and be under the control of a public authority other than the one in control of the transmission system owner.

In the case of an independent transmission operator, the vertically integrated company transfers the assets and management of the transmission network to an autonomous operator who can be part of the group, but a separate legal entity with guaranteed autonomy of management. A public authority in charge and the vertically integrated entity can participate in the supervisory body of the ITO.[105]

[105] CSD, (2011), "Energy and good governance in Bulgaria: Trends and policy options".

Table 6. Types of Transmission Network Unbundling

	Network owner	Control
Ownership unbundling	TSO (ESO)	No external control
ISO	Vertically integrated entity (NEC)	Different pubic authority than that controlling vertically integrated entity e.g. Ministry of Finance
ITO	TSO	Public authority (Ministry of Economy) and vertically integrated entity (NEC) can participate in supervision (including in decisions about financing)

The aspect of liberalization which final consumers, particularly small enterprises and households, will experience first-hand is their ability to choose the supplier from which to buy electricity instead of having a contract with the only supplier licensed to operate in their area. In order to ensure free competition among suppliers, distribution system operators (DSOs) must also be legally and operationally unbundled from the vertically integrated undertakings, whose activities include production and distribution. Unbundling these undertakings should give DSOs the incentive to grant network access to other suppliers too. The parent company will only be permitted to approve the annual financial plan of the DSO and to set limits to its levels of indebtedness. The regulator will monitor closely distribution system operators to ensure that they don't grant privileged network access to their parent company.[106]

Key challenges:

- After a long delay, which was the result of the close financial interdependence between NEC and ESO, the transmission system operator **(ESO) has finally been unbundled by the vertically integrated undertaking (NEC)**. ESO is in the process of being certified as an independent transmission operator by SEWRC. Given their close ties in the past, it is important to ensure that the unbundling will not only be a formality, but will be reflected in ESO's operation and that it will move away from previous practices of favouring producers, which are part of NEC.
- High electricity prices prompted mass protests calling for the end of the **supply monopolies** of the three electricity suppliers operating across the country and even the withdrawal of their license to operate. This reflects one of the main downsides of a regulated consumer market as households have no choice but to purchase power from the only licensed supplier to operate in their area. The three distribution system operators are already legally unbundled from the vertically integrated undertaking they are part of. However, given that there is only one licensed supplier in each area (the

[106] Directive 2009/72/EC, Article 26.

supply branch of their vertically integrated undertaking), they have no choice but to grant them access to the network, thus creating a monopoly. In order to end this monopoly the regulator should **grant nationwide supply licences to the three current suppliers as well as to new market entrants**, most probably large foreign firms, so that they have an incentive to perform better and lower their prices. In order to guarantee the end of supply monopolies, the regulator could impose a maximum market share for each supplier in order to encourage new entrants.

Market Opening

Guaranteeing the independence of the TSO is not only important for the equal access to the transmission network. Indeed the TSO also has another crucial function for the proper development of the liberalized market: running the electricity market. For regulated consumer prices, all electricity production is sold to NEC in its capacity of universal provider. For the industrial sector a multi-layered market is already in place in order to meet the demands for electricity and accommodate production fluctuations. A physical supply of 1 MWh of electricity to the final consumer may be the result of several earlier transactions between the market players. The market is split into several parts:

- Bilateral contracts between market participants on individually negotiated prices for reach delivery time interval;
- Day-ahead market on which registered participants can place offers and make bids to buy or sell electricity for each one-hour delivery interval for the day following the transaction;
- Spot market in which electricity is traded for almost immediate delivery;
- Balancing market run by the TSO in order to ensure that demand is met by generation. The TSO buys or sells electricity in order to compensate for potential changes in the estimated levels of production or consumption.
- The Directive is not very specific about the exact way in which the market is to be opened, other than specifying that this is to be done gradually by dividing customers in groups based on their consumption capacity. Each MS must define the eligible customers for the next section of market opening at the beginning of each year. The deadline for opening the retail market was July 2007.[107] However, many MSs still haven't completed this process, including Bulgaria, despite national legislation being fully adapted.

Based on the criteria of size of consumption, each group is set a deadline, by which it has to switch to an unregulated contract, either with its current supplier or with an entirely new one. Until a consumer switches to such contract, they will be able to purchase electricity through a default distributor at regulated prices. The same firm can be a default supplier and a free market supplier at the same time, until all of its customers which purchase electricity at regulated prices, switch to free market prices. Eventually switching to the free market will become compulsory. However, those who are not able to switch supplier, for example due to being in a remote location, can still maintain their contract with a supplier of last resort, but this will also have to be based on market mechanisms.

[107] Directive 2009/72/EC, article 33.

Box 8. The Liberalization Process in Other MS

The greatest concern for Bulgarians is the impact that these changes will have on their monthly electricity bills. Given that MSs' energy markets will be increasingly connected, price trends in Bulgaria must be considered in the context of European energy policies. The 2050 Energy Roadmap aims to decarbonise Europe's economy, by phasing out fossil fuels and consequently reducing greenhouse gas emissions to 80-95 % below 1990 levels by 2050. As electricity will play a growing role in this process, the sector will also need to be gradually restructured to move away from carbon-intensive generation methods. Early projections indicated that average EU prices would rise until 2030, when they will start to decrease again. However, on average, technological and resource decarbonisation, as well as improvements in energy efficiency have led to smaller increases than expected. Nevertheless, price increases due to decarbonisation measures depend largely on the existing infrastructure, and given Bulgaria's outdated and highly intensive energy system, prices may rise significantly over the coming years. By 2030, households and small and medium enterprises are expected to spend about 16 % of their incomes on energy and transport – in 2012, Bulgarian households spent 14.4 % of their incomes on energy. In order to offset the rising electricity prices, MSs are encouraged to promote energy efficiency in order to reduce energy consumption. In Bulgaria, the potential benefits of improving households' energy efficiency still remain largely untapped, despite several government financing schemes being available. This is likely due to the fact that lowering energy prices artificially through populist government measures acts as a disincentive to invest in energy efficient technologies among the population.

3. GOVERNANCE DEFICITS IN THE BULGARIAN ENERGY SECTOR

3.1. GOVERNANCE OF STATE-OWNED ENTERPRISES

The financial outlook of state-owned enterprises has become **increasingly problematic in the 2011 – 2014 period.** The main problems continue to be the i**ntra-system indebtedness, inefficient governance and sustainability of major financial drains** undermining the financial health of the companies of the BEH. Additionally, scarce public information on the involvement of certain state-owned enterprises in large energy infrastructure projects suggests that state energy companies are overloaded with enormous (in terms of both size and cost) infrastructure projects and burdened by social functions that restrict their investment opportunities. The lack of capacity to manage large projects and to identify and mitigate project risks has led to management collapse and draining of SOE in favour of banks, service providers and subcontractors. Above all, Bulgargaz and the NEC continue to be characterized by poor financial state and desperate lack of liquidity due to inherent state-capture inefficiencies in the governance of the Bulgarian energy system, such as state intervention, poor debt collection, unreasonably high supply prices, market hostile practices of electricity grid connection and non-market pricing mechanisms, etc.[108]

An overview of the financial performance of BEH enterprises shows that **NEC EAD, ESO EAD and Bulgargaz EAD are loss-making companies for 2012** (Table 7). As per Q3 2013, the three companies are still characterized by challenging financial situation. In 2012, Bulgargaz registered losses amounting to BGN 113 million, while NEC's financial loss amounted to more than BGN 94 mln. Short of BEH's temporary rescue loans, both Bulgargaz and the NEC are dependent on regulated prices for natural gas and electricity. State-regulated prices (kept artificially low) and the absence of market-based pricing are serious hurdles to bettering the financial conditions of both enterprises. Adding to these, **NEC's poor financial results can be directly attributed to its involvement in fraudulent infrastructure projects** like NPP Belene and HPP Tsankov Kamak. As per Q3 2013, NEC's long-term debt approximates BGN 627.2 mln due to outstanding loans for investment projects realized by NEC, while the financial indicators of the company suggest that merely 4 % of the current expenses are readily payable.[109] While consumers and producers are footing the bill for what was announced as costs incurred for "green" energy production, the question of who covers the vast expenses already incurred by NEC for large energy projects like NPP Belene, remains open. The lack of

[108] This section presents an analysis of the state of BEH's main enterprises based on an analysis of their annual reports and financial results reported by the Ministry of Finance. The financial health of state-owned enterprises has deteriorated in 2011 – 2013 period.

[109] National Electric Company, (2012), Annual Report.

transparency of governance creates a huge uncertainty over the predictability of cash flows in and out of NEC. Moreover, NEC's indebtedness has been a major hurdle in the process of unbundling the ESO from NEC,[110] which is an EU requirement for liberalization (as per the Third Energy package). This ought to had happened by March 2011, and Bulgaria is facing an infringement procedure for a failure to comply with EU regulations. Bulgargaz EAD is in challenging financial state due to unfavourable market prices for fossil fuel imports and the fact that the company is obliged to sell gas to its consumers at prices lower than the purchase price. Toplofikatzia and other District Heating Companies (DHC) have piled debts to Bulgargaz. BEH bought the debt of Toplofikatsia Sofia to Bulgargaz but this has resulted in lower reserves in Chiren gas storage and shorter liquidity.

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand)

	2007*	2008*	2009	2010	2011	2012	Q3 2013	
	Bulgarian Energy Holding (BEH EAD)							
Total Assets	1,156,969.00	2,595,023.00	2,812,369.00	2,826,957.00	2,937,377.00	3,082,401.00	3,726,792.00	Balance sheet
Total Debt	28,707.00	276,354.00	61,663.00	4,707.00	3,948.00	3,324.00	na	
Equity	1,128,262.00	2,318,669.00	2,750,706.00	2,822,250.00	2,933,429.00	3,079,077.00	3,147,423.00	
Current assets	84,581.00	665,928.00	311,369.00	306,204.00	479,109.00	647,515.00	na	
Inventories	60.00	60.00	1.00	1.00	30.00	2.00	na	
Cash	58,295.00	212,976.00	64,243.00	93,422.00	167,173.00	75,683.00	84,146.00	
Current liabilities	28,190.00	276,027.00	58,135.00	2,675.00	2,591.00	3,044.00	na	
Long-term debt	517.00	327.00	3,528.00	2,032.00	1,357.00	280.00	na	
EBIT (Operating Income)	17,231.00	50,166.00	50,420.00	103,406.00	168,109.00	241,974.00	244,816.00	P&L
EBT	14,704.00	53,753.00	76,377.00	111,763.00	183,950.00	258,224.00	264,295.00	
Net Profit	13,134.00	52,259.00	72,531.00	115,295.00	186,943.00	285,897.00	na	
D&A Costs	-906.00	-936.00	-992.00	-2,100.00	-2,551.00	-2,197.00	-306.00	
Operating Cash Flow	-91,608.00	-65,099.00	-294,976.00	42,180.00	178,313.00	47,098.00	na	Cash Flow
Investment Cash Flow	-553.00	-280,220.00	-53,757.00	-13,001.00	-20,895.00	3,715.00	na	
Financing Activity Cash Flow	na	500,000.00	200,000.00	na	-83,667.00	-142,303.00	na	
Free Cash Flow to the Enterprise	58,295.00	212,976.00	64,243.00	93,422.00	167,173.00	75,683.00	na	

* *BEH EAD. Financial Statement as of 31 December 2008.*

[110] It is foreseen that NEC will be involved in electricity production and trade only, while ESO will be responsible for electricity transmission and management of the network.

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand) (Continued)

	2007*	2008	2009	2010	2011	2012	Q3 2013	
	National Electric Company (NEC EAD)							
Total Assets	4,159,975.00	4,863,477.00	5,911,966.00	6,300,870.00	6,296,169.00	6,798,056.00	6,987,911.00	Balance sheet
Total Debt	1,274,275.00	1,794,728.00	1,968,473.00	2,245,916.00	2,237,952.00	2,551,869.00	2,855,955.00	
Equity	2,885,700.00	3,068,749.00	3,943,493.00	4,054,954.00	4,058,217.00	4,246,187.00	4,131,956.00	
Current assets	715,203.00	902,325.00	491,418.00	497,434.00	439,408.00	536,484.00	849,048.00	
Inventories	35,249.00	25,780.00	16,986.00	13,345.00	11,677.00	12,551.00	13,213.00	
Cash	142,316.00	160,003.00	59,617.00	84,410.00	45,784.00	47,625.00	34,505.00	
Current liabilities	491,138.00	648,405.00	790,119.00	1,127,846.00	1,127,043.00	1,960,768.00	2,228,741.00	
Long-term debt	783,137.00	1,146,323.00	1,178,354.00	1,118,070.00	1,110,909.00	591,101.00	627,214.00	
EBIT (Operating Income)	na	96,153.00	-1,161	na	14,805.00	-192,727.00	-124,539.00	P&L
EBT	46,992.00	46,837.00	6,743.00	109,652.00	68,843.00	-99,919.00	-113,320.00	
Net Profit	39,400.00	40,075.00	8,533.00	102,570.00	68,572.00	-94,075.00	-113,320.00	
D&A Costs	-174,798.00	-152,456.00	-141,923.00	-161,673.00	-156,818.00	-158,031.00	-121,549.00	
Operating Cash Flow	123,509.00	135,744.00	216,675.00	413,877.00	326,425.00	103,919.00	78,360.00	Cash Flow
Investment Cash Flow	-227,079.00	-574,895.00	-281,765.00	-215,446.00	-225,649.00	-88,979.00	-54,280.00	
Financing Activity Cash Flow	168,676.00	466,814.00	-35,382.00	-173,642.00	-139,401.00	-13,093.00	-37,200.00	
Free Cash Flow to the Enterprise	142,316.00	160,003.00	59,617.00	84,410.00	45,784.00	47,625.00	34,505.00	

* *NEC. Consolidated Annual Financial Report as of 31 December 2007, www.nek.bg/cgi?d=1906*

	2007*	2008*	2009*	2010*	2011	2012	Q3 2013	
	Bulgargaz							
Total Assets	569,954.00	698,677.00	563,627.00	616,748.00	675,581.00	682,632.00	404,018.00	Balance sheet
Total Debt	137,197.00	356,268.00	195,315.00	285,828.00	417,861.00	538,485.00	245,732.00	
Equity	432,757.00	342,409.00	368,312.00	330,920.00	257,720.00	144,147.00	158,286.00	
Current assets	420,582.00	556,126.00	451,912.00	532,497.00	622,848.00	657,919.00	389,169.00	
Inventories	131,266.00	211,420.00	217,117.00	183,858.00	202,260.00	172,117.00	111,903.00	
Cash	104,411.00	22,759.00	90,282.00	151,996.00	196,162.00	111,624.00	19,279.00	
Current liabilities	123,119.00	356,197.00	144,995.00	285,828.00	377,670.00	499,935.00	193,965.00	
Long-term debt	14,078.00	71.00	50,320.00	291.00	40,191.00	38,550.00	51,767.00	

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand) (Continued)

	2007*	2008*	2009*	2010*	2011	2012	Q3 2013	
	Bulgargaz							
EBIT (Operating Income)	104,000.00	-98,680.00	62,743.00	-48,411.00	-58,310.00	-102,819.00	19,618.00	P&L
EBT	96,475.00	-93,751.00	33,761.00	-36,200.00	-73,133.00	-114,125.00	12,989.00	
Net Profit	86,989.00	-90,543.00	30,156.00	-37,392.00	-73,200.00	-113,573.00	14,138.00	
D&A Costs	-74.00	-56.00	-203.00	-248.00	-143.00	-150.00	-111.00	
Operating Cash Flow	85,847.00	-218,255.00	-48,664.00	61,154.00	50,060.00	-74,010.00	84,475.00	Cash Flow
Investment Cash Flow	-139.00	-108.00	-165.00	-3.00	-140.00	-57.00	-167.00	
Financing Activity Cash Flow	18,703.00	136,681.00	-126,323.00	-2,717.00	-2,695.00	-1,966.00	-2,756.00	
Free Cash Flow to the Enterprise	104,411.00	22,759.00	90,282.00	151,996.00	196,162.00	111,624.00	19,279.00	

* *Bulgargaz. Annual Activity and Financial Report, 31 December 2008, 31 December, 2010.*

	2007*	2008*	2009*	2010*	2011	2012	Q3 2013	
	Bulgartransgaz							
Total Assets	778,934.00	1,357,737.00	1,436,540.00	1,477,529.00	1,513,764.00	2,026,145.00	2,013,550.00	Balance sheet
Total Debt	35,724.00	108,667.00	106,522.00	85,710.00	83,433.00	147,133.00	145,803.00	
Equity	743,210.00	1,249,070.00	1,330,018.00	1,391,819.00	1,430,331.00	1,879,012.00	1,867,747.00	
Current assets	164,193.00	203,376.00	295,569.00	342,773.00	433,297.00	358,237.00	347,672.00	
Inventories	32,768.00	35,637.00	28,425.00	25,083.00	26,243.00	26,235.00	32,717.00	
Cash	68,097.00	4,258.00	153,450.00	254,168.00	100,208.00	72,221.00	223,442.00	
Current liabilities	30,851.00	47,794.00	45,180.00	10,056.00	11,025.00	17,400.00	17,105.00	
Long-term debt	4,873.00	60,873.00	61,342.00	75,670.00	72,408.00	129,733.00	128,698.00	
EBIT (Operating Income)	51,581.00	13,118.00	99,334.00	105,827.00	114,563.00	107,580.00	66,723.00	P&L
EBT	48,690.00	17,519.00	96,730.00	125,535.00	133,014.00	119,684.00	71,607.00	
Net Profit	43,801.00	15,613.00	87,036.00	112,979.00	119,697.00	107,681.00	66,265.00	
D&A Costs	-38,205.00	-51,242.00	-52,526.00	-54,557.00	-51,984.00	-51,235.00	-52,988.00	
Operating Cash Flow	85,312.00	-27,789.00	164,035.00	96,946.00	156,165.00	137,048.00	131,485.00	Cash Flow
Investment Cash Flow	-14,376.00	-14,785.00	-15,306.00	-1,780.00	-6,557.00	-34,726.00	-91,753.00	
Financing Activity Cash Flow	-4,843.00	-19,265.00	3,100.00	-192.00	-75,877.00	-178,052.00	-71,280.00	
Free Cash Flow to the Enterprise	68,097.00	4,258.00	153,450.00	254,168.00	100,208.00	72,221.00	223,442.00	

* *Bulgartransgas. Independent Auditor's Report and Annual Financial Report as of 31 December 2008; 31 December 2010.*

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand) (Continued)

	2007*	2008	2009	2010	2011	2012	Q3 2013	
	Kozloduy NPP							
Total Assets	1,851,428.00	1,832,865.00	1,899,397.00	2,038,905.00	2,086,729.00	2,590,422.00	2,515,042.00	Balance sheet
Total Debt	765,475.00	675,483.00	676,667.00	802,993.00	780,496.00	888,611.00	915,203.00	
Equity	1,085,953.00	1,157,382.00	1,222,730.00	1,235,912.00	1,306,233.00	1,701,811.00	1,599,839.00	
Current Assets	468,000.00	509,894.00	525,022.00	597,280.00	667,416.00	758,651.00	735,459.00	
Inventories	199,901.00	242,361.00	252,059.00	52,085.00	50,290.00	59,136.00	62,902.00	
Cash	169,283.00	125,308.00	82,847.00	72,822.00	183,609.00	78,985.00	24,769.00	
Current Liabilities	133,223.00	129,886.00	141,400.00	212,508.00	214,512.00	314,627.00	280,785.00	
Long-term Debt	632,252.00	545,597.00	535,267.00	590,485.00	565,984.00	573,984.00	634,418.00	
EBIT (Operating Income)	15,693.00	107,051.00	82,053.00	77,285.00	220,260.00	221,250.00	75,207.00	P&L
EBT	4,044.00	80,073.00	72,114.00	66,938.00	216,203.00	208,340.00	77,763.00	
Net Profit	3,459.00	70,801.00	64,890.00	60,437.00	114,192.00	146,584.00	13,915.00	
D&A Costs	-140,904.00	-143,955.00	-142,614.00	-138,034.00	-123,469.00	-124,562.00	-100,786.00	
Operating Cash Flow	160,662.00	220,347.00	133,136.00	188,332.00	291,692.00	na	81,883.00	Cash Flow
Investment Cash Flow	-84,789.00	-133,556.00	-126,512.00	117,718.00	-85,884.00	na	-80,042.00	
Financing Activity Cash Flow	-52,504.00	-131,860.00	-49,069.00	77,433.00	-95,021.00	na	-56,061.00	
Free Cash Flow to the Enterprise	169,283.00	125,308.00	82,847.00	72,822.00	183,609.00	na	24,769.00	

* *Kozloduy NPP Balance for 2007.*
** *Independent Auditor's Report for 2011.*

	2007*	2008*	2009*	2010*	2011	2012	Q3 2013	
	Maritsa East 2 TPP							
Total Assets	717,437.00	858,950.00	1,239,461.00	1,270,662.00	1,385,552.00	1,621,261.00	1,583,898.00	Balance sheet
Total Debt	347,885.00	445,614.00	597,237.00	647,924.00	756,810.00	704,846.00	713,795.00	
Equity	369,552.00	413,336.00	642,224.00	622,738.00	628,742.00	916,415.00	870,103.00	
Current Assets	130,102.00	139,091.00	145,593.00	116,055.00	138,322.00	101,347.00	134,862.00	
Inventories	43,760.00	52,206.00	62,588.00	68,509.00	64,833.00	57,799.00	57,429.00	
Cash	11,703	17,461.00	1,503.00	900.00	16,094.00	6,088.00	941.00	
Current Liabilities	110,439.00	152,825.00	228,121.00	211,534.00	297,181.00	338,133.00	382,349.00	
Long-term Debt	237,446.00	292,789.00	369,116.00	436,389.00	459,629.00	366,713.00	331,446.00	

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand) (Continued)

	2007*	2008*	2009*	2010*	2011	2012	Q3 2013	
	Maritsa East 2 TPP							
EBIT (Operating Income)	22,574.00	67,874.00	82,302.00	48,454.00	52,070.00	58,852.00	na	P&L
EBT	23,590.00	53,588.00	50,104.00	14,042.00	15,329.00	51,358.00	na	
Net Profit	22,182.00	48,148.00	44,738.00	12,724.00	15,164.00	45,506.00	na	
D&A Costs	-72,809.00	-76,271.00	-70,039.00	-81,138.00	-95,791.00	-130,137.00	na	
Operating Cash Flow	128,208.00	149,897.00	123,766.00	102,204.00	253,207.00	206,023.00	na	Cash Flow
Net Investment Cash Flow	-170,744.00	-222,601.00	-139,662.00	-149,959.00	-154,066.00	-121,005.00	na	
Financing Activity Cash Flow	50,094.00	78,462.00	-62.00	47,152.00	-83,770.00	-92,925.00	na	
Free Cash Flow to the Enterprise	11,703.00	17,461.00	1,503.00	900.00	16,094.00	6,088.00	na	

* *Maritsa East 2 TPP. Annual Financial Reports for 2008 and 2010.*

	2007*	2008	2009	2010	2011	2012	Q3 2013	
	Mini Marita East EAD							
Total Assets	522,558.00	735,042.00	782,619.00	775,174.00	782,604.00	1,106,369.00	1,089,542.00	Balance sheet
Total Debt	146,845.00	224,517.00	271,244.00	255,595.00	250,249.00	348,924.00	367,382.00	
Equity	375,713.00	510,525.00	511,375.00	519,579.00	532,355.00	757,445.00	722,160.00	
Current assets	191,040.00	201,584.00	225,607.00	193,095.00	212,461.00	251,359.00	217,634.00	
Inventories	92,063.00	97,489.00	90,896.00	92,598.00	78,372.00	92,526.00	113,626.00	
Cash	8,989.00	3,172.00	2,931.00	3,542.00	30,980.00	22,728.00	4,274.00	
Current liabilities	59,621.00	107,986.00	146,226.00	117,845.00	103,339.00	159,375.00	151,073.00	
Long-term debt	87,224.00	116,531.00	125,018.00	137,750.00	146,910.00	189,549.00	216,309.00	
EBIT (Operating Income)	na	5,907.00	8,659.00	11,374.00	23,983.00	8,441.00	-14,810.00	P&L statement
EBT	8,986.00	2,006.00	2,477.00	8,650.00	21,102.00	5,909.00	-17,085.00	
Net Profit	8,018.00	1,648.00	1,592.00	9,350.00	18,715.00	5,362.00	-16,976.00	
D&A Costs	-51,321.00	-61,606.00	-67,291.00	-61,244.00	-98,867.00	-67,504.00	-33,840.00	
Operating Cash Flow	66,026.00	44,762.00	8,976.00	na	86,364.00	31,601.00	-18,454.00	Cash Flow st.
Investment Cash Flow	-70,234.00	-52,097.00	-44,748.00	na	-25,860.00	-12,800.00	-6,500.86	
Financing Activity Cash Flow	9,894.00	1,517.00	35,531.00	na	-31,586.00	-27,053.00	-22,753.01	
Free Cash Flow to the Enterprise	8,989.00	3,172.00	2,931.00	na	30,980.00	22,728.00	4,274.00	

* *Mini Maritsa East TPP. Auditor's Report 2007, http://www.marica-iztok.com/files/finance_info/file_25_bg.pdf*

Table 7. State-owned Enterprises' Financial Results, 2008 – 2013 (BGN thousand) (Continued)

	2007*	2008	2009	2010	2011	2012	Q3 2013	
	ESO EAD							
Total Assets	96,576.00	116,970.00	97,140.00	156,495.00	238,613.00	124,971.00	178,526.00	Balance sheet
Total Debt	38,210.00	52,059.00	75,808.00	58,008.00	58,195.00	53,271.00	106,033.00	
Equity	58,366.00	64,911.00	21,332.00	98,487.00	180,418.00	71,700.00	72,493.00	
Current Assets	47,025.00	63,586.00	40,971.00	109,050.00	198,667.00	81,225.00	140,642.00	
Inventories	8,788.00	16,267.00	15,859.00	12,794.00	12,285.00	12,476.00	15,930.00	
Cash	9,844.00	5,941.00	516.00	1,369.00	32,835.00	16,752.00	13,487.00	
Current Liabilities	31,707.00	45,703.00	68,603.00	48,199.00	50,093.00	44,715.00	97,477.00	
Long-term Debt	6,503.00	6,356.00	7,205.00	9,809.00	8,102.00	8,556.00	8,556.00	
EBIT (Operating Income)	10,407.00	7,604.00	-46,820.00	86,425.00	116,735.00	-38,291.00	771.00	P&L
EBT	10,484.00	7,300.00	-47,427.00	85,741.00	116,226.00	-38,457.00	793.00	
Net Profit	9,433.00	6,567.00	-42,715.00	77,155.00	104,595.00	-38,117.00	na	
D&A Costs	-12,754.00	-12,033.00	-12,393.00	-9,916.00	-9,974.00	-9,918.00	-7,592.00	
Operating Cash Flow	12,561.00	-1,903.00	-973.00	na	35,357.00	-10,299.00	na	Cash Flow
Investment Cash Flow	-2,717.00	-2,000.00	-1,497.00	na	-3,891.00	-5,854.00	na	
Financing Activity Cash Flow	na	na	-2,955.00	na	-509.00	-166.00	na	
Free Cash Flow to the Enterprise	9,844.00	5,941.00	516.00	na	32,835.00	16,752.00	na	

* *http://www.tso.bg/uploads/file/ESO_finansov_otchet_2007_BG.pdf*

Source: CSD, 2014, based on information from Ministry of Finance.

Within BEH, state-owned enterprises that expected positive financial results at the end of 2012 are the coal-fired power plant Maritsa East 2, the Maritsa East coal mines (despite reductions in extracted coal quantities), and NPP Kozloduy. However, together with NPP Kozloduy, TPP Maritsa East 2, and Mini Maritsa East, NEC has high level of short-term liabilities, while all companies, except Bulgartransgaz and the BEH, are characterized with **low levels of free cash flow availability**. The level of "free cash flow" is a telling financial indicator (even more so than net income/profit/loss),[111] as it reveals the amount of cash available to the company for discretionary spending (like future investments).

[111] "Net Income" (EBIT) is determined by subtracting the company's total expenses from the company's total income to determine how much money the company has to spend, while "Freecashflow" indicates cash available for discretionary spending.

BEH itself reports expected profit of BGN 36 million for 2012.[112] While created in 2008 as a structure to improve the process of governance of state-owned energy enterprises, the Holding has since had a life-support role for poorly governed state enterprises. For example, in 2008 – 2009, the Holding's capital was increased by the government with € 204,5 mln to enable investment in the repayment of Toplofikacia Sofia's (the capital's central heating system) debt to Bulgargaz. In exchange, the Holding was to become a majority shareholder in Toplofikacia Sofia. Yet, as of 2014, procedures rendering the Holding a majority stakeholder in the capital's central heating system have not been completed.[113]

It is also often the case that BEH redistributes from better performing companies to poor performers which alongside the mandatory prepayment of dividends to the budget (80 % dividend mandatory repayable to the budget) has drained the coffers of BEH and its companies of liquidity and investments. Better-performing state-owned energy companies pay the bulk of their profits as dividends to BEH, which, in turn, offers low-interest-rate loans to the laggards. For example, in 2008, BEH offered a revolving credit line to Bulgargaz, the decision for which has already been renewed and, as of 2014, this practice continues. In 2009, BEH provided a loan to Mini Martisa East from the Holding's funds intended for investments to cover the mining company's current expenses. Further, another BGN 103 million also purposed for investments were transferred to NEC to cover outstanding loans for HPP Tsankov Kamak.[114]

As these practices seem to have fallen short of sustainability, BEH is preparing to issue bonds and sell its minority stake on the foreign stock exchange.[115] However, the worsening state and the deteriorating credit ratings of the BEH companies and the worsening forecast for revenues undermine the feasibility of the future sales (if ever) either through IPO and/or minority share sales. According to many analysts BEH is still at least 2 years away from an IPO. In that regard, it could be concluded that the systematic problem arises from the fact that the management of BEH's companies does not have a free hand to improve the financial performance and bases its decisions not on best choice but rather has to follow the social priorities of the government. In that sense, the source of the problems is not BEH's management *per se* but the direct intervention of the government, the failed restructuring of BEH and its affiliates, the lack of strategy and vision and abandoning of the original goal – i.e. public listing and gradually lowering the state's ownership that should have happened by the end of 2013.

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[112] "BEH expects BGN 36 million in profits in 2012", Capital Weekly, December 12, 2012, accessed from http://www.capital.bg/biznes/kompanii/2012/12/20/1973562_beh_ochakva_pechalba_ot_36_mln_lv_za_2012_g/

[113] Public Financial Inspection Agency, (2009), Report on Carried Out Financial Inspection of the Ministry of Economy, Energy and Tourism.

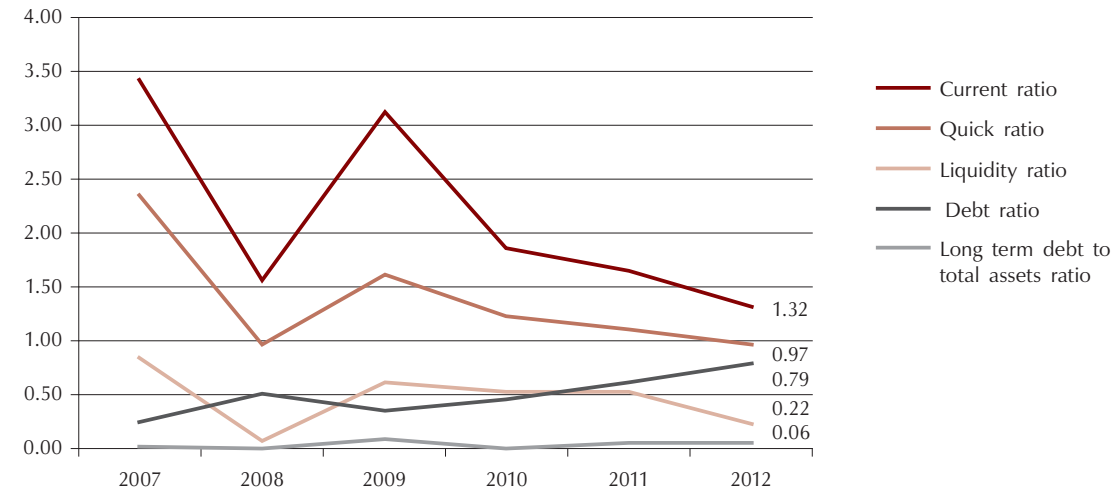
[114] BEH, (2011), Annual Report of the activities and a Financial Report; PFIA, (2009), Report on Carried Out Financial Inspection of the Ministry of Economy, Energy and Tourism.

[115] Plans included issuing bonds for at least EUR 350 m in 2012 and have a credit rating assigned by Fitch. However, the government has put on hold plans to sell BEH's minority stake on the foreign stock exchange, as market conditions have been seen as unfavorable.

Debt and Liquidity Pressure for NEC and Bulgargaz – Key Performance Ratios Analysis

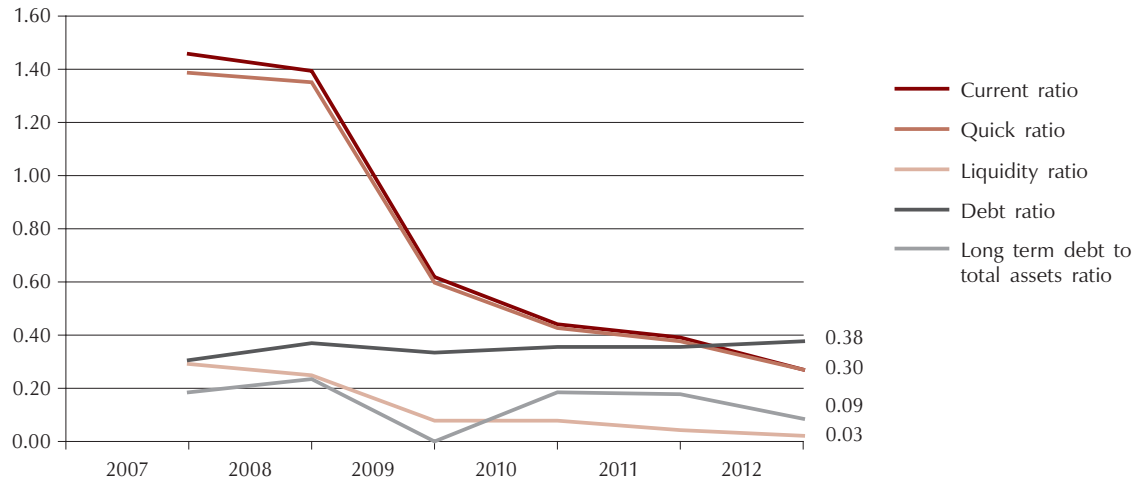
The financial results of NEC and Bulgargaz have deteriorated after 2007. Above all, levels of liquidity and quick access to cash and callable resources have significantly eroded, while debt has been re-accumulated. The very ability of the state-owned companies to repay short-term and long-term obligations has been put at risk. NEC is in a state of technical insolvency, while Bulgarsgaz is also in a particularly challenging financial situation (Figure 22 and Figure 23).

Figure 22. Bulgargaz Financial Ratios (2007 – 2012)



Source: CSD, based on Ministry of Finance data.

Figure 23. NEC Financial Ratios (2007 – 2012)



Source: CSD, based on Ministry of Finance data.

- **The current ratio** of a company is the ratio of current assets to current liabilities. It shows the company's ability to meet its short-term liabilities (debt and payables) with its short-term assets (cash, inventory, receivables). The higher the current ratio, the more capable the company is of paying its obligations. **A ratio under 1 suggests that the company would be unable to pay off its obligations if they came due at that point.** NEC's current ratio is well below 1 – 0.30, while Bulgargaz results are slightly better and above the technical bankruptcy threshold with 1.32 current ratio. Both NEC and Bulgargaz show extreme deterioration in the last few years as their current ratio levels have decreased by 78.5 % and 61.4 % respectively compared to levels in 2007.
- **The quick ratio** is an indicator of a company's short-term liquidity. The quick ratio measures the company's ability to meet its short-term obligations with its most liquid assets. For this reason, the ratio excludes inventories from current assets, and is then divided by current liabilities. The quick ratio measures the amount of liquid assets available for each unit of current liabilities. Thus, a quick ratio of 1.5 means that a company has USD 1.50 of liquid assets available to cover each USD 1.0 of current liabilities. The higher the quick ratio, the better the company's liquidity position. Quick ratios of both NEC and Bulgargaz are below 1 – 0.37 showing that **the companies have very limited access to liquid assets and would need external financing if they were to pay creditors at the current moment**. A negative trend of constant decrease in the ratio value is witnessed in the 2007 – 2012 for both companies.
- **The liquidity ratio** expresses a company's ability to repay short-term creditors out of its total cash. The liquidity ratio is the result of dividing the total cash by short-term borrowings. It shows the number of times short-term liabilities are covered by cash. If the value is greater than 1, it means fully covered. Liquidity ratios of NEC and Bulgargaz stand considerably below 1, 0.03 and 0.22 respectively. A negative trend of constant decrease in the ratio value is witnessed in the 2007 – 2012 for both companies.
- **The debt ratio** is a financial ratio that measures the extent of a company's leverage. The debt ratio is defined as the ratio of total debt to total assets, expressed in percentage, and can be interpreted as the proportion of a company's assets that are financed by debt. The higher this ratio, the more leveraged the company and the greater its financial risk. Debt ratios of NEC and Bulgargaz are below 1 but there is a negative trend of constant increase in the ratio values witnessed in the 2007 – 2012 period for both companies. There are suspicions that **the actual debt/assets ratio could be distorted by assets not being properly revalued to market benchmark** (i.e. they are kept artificially overvalued – asset value is reflecting different aspects – book value – market value – liquidation value). This is critical to understand why some of the assets are liabilities or not reconciled losses – like in the case of Belene NPP.
- **Long-term debt to total assets ratio** is a measurement representing the percentage of a corporation's assets that are financed with loans and financial obligations lasting more than one year. The ratio provides a general measure of the financial position of a company, including its ability to meet financial requirements for outstanding loans. A year-over-year decrease in this metric would suggest the company is progressively becoming less dependent on long-term debt to grow their business and vice versa. The latter is the case with Bulgargaz and NEC as long-term debt to total assets ratio is the only indicator

that yields slightly positive results for the two companies, possibly **indicating the existence of buffers for long lending as a way out from the particularly difficult financial situation**.

Box 9. BEH's Eurobond Sale and Related Credit Rating

BEH raised EUR 500 m through its debut Eurobond issue in late October 2013, collecting more than EUR 1.2 bn in orders. It has been announced that EUR 250 m of the loan will be used to cover a bridge financing provided by Citigroup to cover a loan from BNP Paribas to NEC in the spring of 2013. The remainder will be used to finance the building of new gas pipelines and cover deficits within the holding companies.

The five-year notes, which carry a 4.25 % coupon, priced at a reoffer price of 99.837 to yield 4.287 %, which is equivalent to a 320 basis point spread over mid swaps. Bond sale advisors Citigroup and Raiffeisen Bank International announced collecting in the low 300s area. Persisting concerns about the country's political outlook and the debut nature of the transaction were among the factors justifying a slightly higher premium compared to peers. The bond priced around 200bp over the Bulgarian sovereign curve, slightly more generous than the premium offered by other energy companies in Central and Eastern Europe.

Fitch assigned BEH's debut EUR 500 m eurobond issue a final foreign currency senior unsecured rating of "BB+" in the beginning of November. The bonds' rating mirrors BEH's long-term foreign and local currency issuer default ratings (IDR) of BB+/stable outlook. BEH's long-term IDRs reflects its dominant position in Bulgaria's electricity and gas markets and its strong links with the Bulgarian state. Developments that could lead to negative rating action include failure to maintain sufficient liquidity, negative change in the sovereign rating and/or weakening links between BEH and the state funds from operations net adjusted leverage exceeding 3x on a sustained basis. Positive rating action could be prompted by stronger corporate governance, progress in the liberalisation of the local electricity market and funds from operations net adjusted leverage below 1.5x on a sustained basis.

Investment and Renovation Activities of BEH Enterprises

Financial results of enterprises directly influence growth and re-investment capacities for the upcoming financial period. As the financial indicators for the state-owned energy enterprises have deteriorated, investment and renovation budgets have been reduced and/or have not been fully executed. In energy, failure to adequately finance renovation and re-investment leads to reduction in the security of supply, thus increases hazards for technological glitches (e.g. power outages or blackouts) and potentially environmental disasters. **In 2012, the BEH subsidiaries faced financial difficulties and could not meet the initially planned re-investment and renovation targets.** The situation with Kozloduy NPP is particularly worrying as the financial decapitalization on the back of administratively regulated prices had inevitable effects on the renovation funding required (Table 8). Moreover, Bulgargaz' negative financial results in 2012 prevented the company from securing the required amounts of gas to be imported in the Chiren USG facility.

Table 8. Execution of Investment and Renovation Programs of BEH Enterprises (2009 – 2012)

	2009		2010		2011		2012	
Investment program	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**
Mini – Maritza EAD	94	73 %	88	94 %	46	52 %	66	61 %
Maritza – East 2 EAD TPP	114	67 %	163	92 %	196	117 %	86	39 %
Kozloduy EAD NPP	147	59 %	211	82 %	142	74 %	73	37 %
NEC EAD	340	132 %	373	101 %	87	113 %	207	37 %
Bulgargaz EAD	na	na	na	na	na	na	na	na
Bulgartransgaz EAD	16	39 %	3	33 %	8	8 %	31	24 %
ESO EAS	na	na	na	na	na	na	na	na
Renovation Program	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**	**Execution (BGN mln)**	**% Execution**
Mini – Maritza EAD	49	92 %	52	132 %	55	86 %	64	98 %
Maritza – East 2 EAD TPP	51	96 %	24	79 %	23	58 %	35	143 %
Kozloduy EAD NPP	71	139 %	55	100 %	38	55 %	37	45 %
NEC EAD	52	128 %	55	100 %	32	99 %	24	47 %
Bulgargaz EAD	na	na	na	na	na	na	na	na
Bulgartransgaz EAD	na	na	na	na	na	na	na	na
ESO EAS	na	na	na	na	na	na	na	na

Source: CSD, based on Ministry of Economics and Energy data.

Public Accountability and Transparency

In light of the above, it is clear that **the current opaque system of governance of state-owned enterprises is prone to abuses** of public funds and serious neglect of the companies' interests. Sufficient public scrutiny over the consistency of reporting mechanism are, thus, necessary to increase the transparency of governance and improve the management of state-owned enterprises. Bulgarian regulations on monitoring of and reporting by companies that are applicable to state-owned enterprises (Decree 114)[116] stipulate that all companies ought to present: 1) quarterly and annual profit and loss accounts (income statement), and 2) balance sheet statements and additional financial analysis based on the presented results. A review of the compliance of state-owned enterprises with these regulations directed the report to the following conclusions:

[116] Bulgaria, Council of Ministers, (10.06.2010), Decree No 114 on monitoring and control of the financial condition of state-owned enterprises and companies with a majority government stake and the companies under their control.

- Currently, **most companies reveal the bare minimum of financial data required** by Decree 114;
- Reports by a number of state-owned energy enterprises **lack the required additional performance analysis**;
- While publishing their reports, NPP Kozloduy, NEC, ESO, Bulgargaz, and Bulgartransgaz are characterized by **a lack of consistency** in their reporting.

More specifically, an analysis of the compliance mechanism currently in place in Bulgaria revealed the following main issues:

- Mini Maritsa East, TPP Maritsa East 2, NPP Kozloduy, and Bulgartel publish **no annual financial reports on their official websites**.
- Often, one and the same company presents **different structure of information for consecutive reporting periods**, thus, hampering a comparison in time.
- There are **discrepancies between the annual reports uploaded on the Ministry of Finance's website and the annual reports uploaded on the companies' own websites** (notably, for NEC and ESO).
- Required **additional financial analysis** (i.e. analysis of financial results such as key performance ratios) is not available for all state-owned enterprises. Only NPP Kozloduy, NEC, ESO, Bulgargaz, and Bulgartransgaz publish this information.
- There are some **factual mistakes** in the presented information, most notably, in the case of TPP Maritsa East 2.
- The financial reports uploaded on the Ministry of Finance's webpage **lack a cash flow statement and/or unconsolidated cash flow** information. Instead, companies' balance sheets offer only the final free cash flow for the reporting period (excl. Bulgargaz, NEC, ESO, Bulgargaz, and Bulgartransgaz).

3.2. LARGE INVESTMENT PROJECTS: RECENT DEVELOPMENTS

3.2.1. Belene NPP

The plans for building a second NPP in Bulgaria near Belene were initiated in the 1970s, and the project has been stalled and revisited a number of times since then. The Belene NPP project poses a number of questions from an energy security perspective. Its proponents see it in terms of the weight inherent to large-scale energy production, while its opponents warn about the project's innate dependence on fuel imports and technology. Accordingly, the construction of NPP Belene has been a topic of constant and heated debate, especially since its renewed announcement at the beginning of 2008. The project has been sustained through the last 5 years of deliberations not least thanks to the existence of a vocal and powerful nuclear lobby in Bulgaria.[117] However, the project's economic feasibility has been questionable from its very announcement. For example, ESO's grid development plan for 2010 – 2020[118]

[117] CSD, (2011), "Energy and Good Governance in Bulgaria: Trends and Policy Options".

[118] ESO, (2010), A Plan for the Development of the Electricity Transmission Network in Bulgaria for the Period 2010 – 2020.

develops two scenarios (i.e. one for a minimum and one for a maximum growth in electricity consumption) and notes that adding NPP Belene to the Bulgarian energy system would result in an excess of electricity produced amounting to over 12,000 GWh by 2020. Thus, the plan notes that the viability of the NPP Belene project is conditional on the existence of long-term intergovernmental electricity export agreements between Bulgaria and other neighbouring countries, while the latter would also necessitate the construction of additional transmission capacity (that is currently not in place). Further, even under the maximum growth in consumption scenario, **NPP Belene is not deemed necessary in meeting domestic electricity needs**.

Adding to this, cost forecasts for the NPP Belene project have not been updated until 2012, while a publicized analysis from a markets perspective is entirely missing. The cost of NPP Belene, thus the price of electricity produced from the NPP, has become a subject of enormous controversy. As a rule, only part of the costs (namely, the overnight costs estimated at about EUR 4 billion) were publicized. Estimations of the additional expenses (incl. for grid access, project administration, etc.) and escalations (inflation-adjusted costs), adding up to a price of about EUR 6-7 billion, have come under public scrutiny only recently. Moreover, the information that nuclear power projects are very capital intensive (involving huge upfront costs) and include a sizeable share of interest rates to finance the project[119] is largely withheld from public debates. The full project costs of above EUR 10 billion[120] were finally announced creating public tensions. The withheld information is key for determining the price of electricity that will be produced by the Belene NPP, as 75-80 % of the price of electricity generated by NPPs is determined by the size of the initial investment.[121] While operating costs of NPPs are relatively low, their capital costs are the highest of all energy producing facilities and the costs for financing these upfront capital costs are significant. That is, the currently low prices of electricity produced by NPP Kozloduy owe to the fact that the plant's capital costs are already paid financially depriciated (thus, consumers merely cover the operating costs). Conversely, for the electricity produced by NPP Belene, Bulgarian consumers will have to cover all the capital, operating, and financing costs. Accordingly, estimations of **the cost of electricity produced by NPP Belene**, based on the latest total project cost assessment, **are not likely to match (and are likely to substantially exceed) electricity prices from the existing paid-out NPP Kozloduy**.

Therefore, **from an energy security perspective, NPP Belene project cannot be assessed positively**, as it is not likely to contribute to either the affordability component of energy security, nor to rendering the country less dependent on foreign resources and technologies. Moreover, various accidents with nuclear

[119] Interest rates on nuclear power projects vary depending on the duration of project construction. Thus, depending on the time it takes to build an NPP, the interest rates are likely to be 30 – 40 % of the total project costs. In the case of NPP Belene, this would mean over EUR 3 billion.

[120] In 2011, CSD provided a breakdown of the full costs of NPP Belene adding up to EUR 10 – 12 billion (CSD, (2011), "Energy and Good Governance in Bulgaria: Trends and Policy Options"). These estimates were later confirmed by HSBC, as the consultant was hired to perform a financial analysis of the NPP.

[121] World Nuclear Association, (2010), "The Economics of Nuclear Power".

power in Japan, the USA, the UK, Hungary, Russia, France, and others[122] provide serious grounds for questioning the sustainability of NPPs in light of increasingly recurrent extreme weather events. Finally, from a financial security perspective, NPP Belene has the potential to pose a serious threat to the financial security of the country due to the following factors:

- **Sizeable investment** (incl. substantial upfront costs) that is extremely sensitive to the duration of the construction phase: the costs of an NPP project increase with every additional year of construction. All NPPs currently under construction in Europe are behind schedule, thus, will end up being notably more expensive than initially estimated. Similarly, contract costs with Atomstroyexport for NPP Belene increased with more than EUR 2 billion in two years (from 2008 to 2010) and will continue to do so.
- The **return-on-investment** (ROI) timeframe is long (30-40 years) and hard to estimate in the current reality of increasingly liberalized European market. The past few years show that substantial changes to the energy markets occur over such timeframes that might totally shift focuses and alternatives.
- As suggested by the European Court of Justice's **audit report on decommissioning NPPs** in Bulgaria, Lithuania, and Slovakia, the process of decommissioning is commonly characterized by huge cost overruns. According to the ECJ, the currently available financial resources from both EU contributions and national funding will not be sufficient to complete the task of decommissioning, in the case of Bulgaria, NPP Kozloduy's reactors 1-4.[123]

Management issues (most notably, disposal) of high-level radioactive waste remain unresolved. Internationally studied deep-geologic placement is not only extremely expensive, but enjoys limited progress not least due to the inconceivable timeframe forecasts necessary for a long-term waste management solution (i.e. 10,000 years and above).

The timeline of project developments summarized below demonstrates the latest political complexities and turning points.

The course of the NPP Belene project is also a demonstration of the enormous share of political instead of economic considerations that go behind the scenes when deciding on large energy infrastructure projects. The result of a January 2013 referendum, which was not valid due to low turnout, showed that Bulgarian citizens are confused about the benefits of a nuclear power plant. Yet because of the implicit wording of the question asking voters whether they are support the development of nuclear energy in Bulgaria, the majority said 'Yes', which was used as a political dividend by the-then-opposition.

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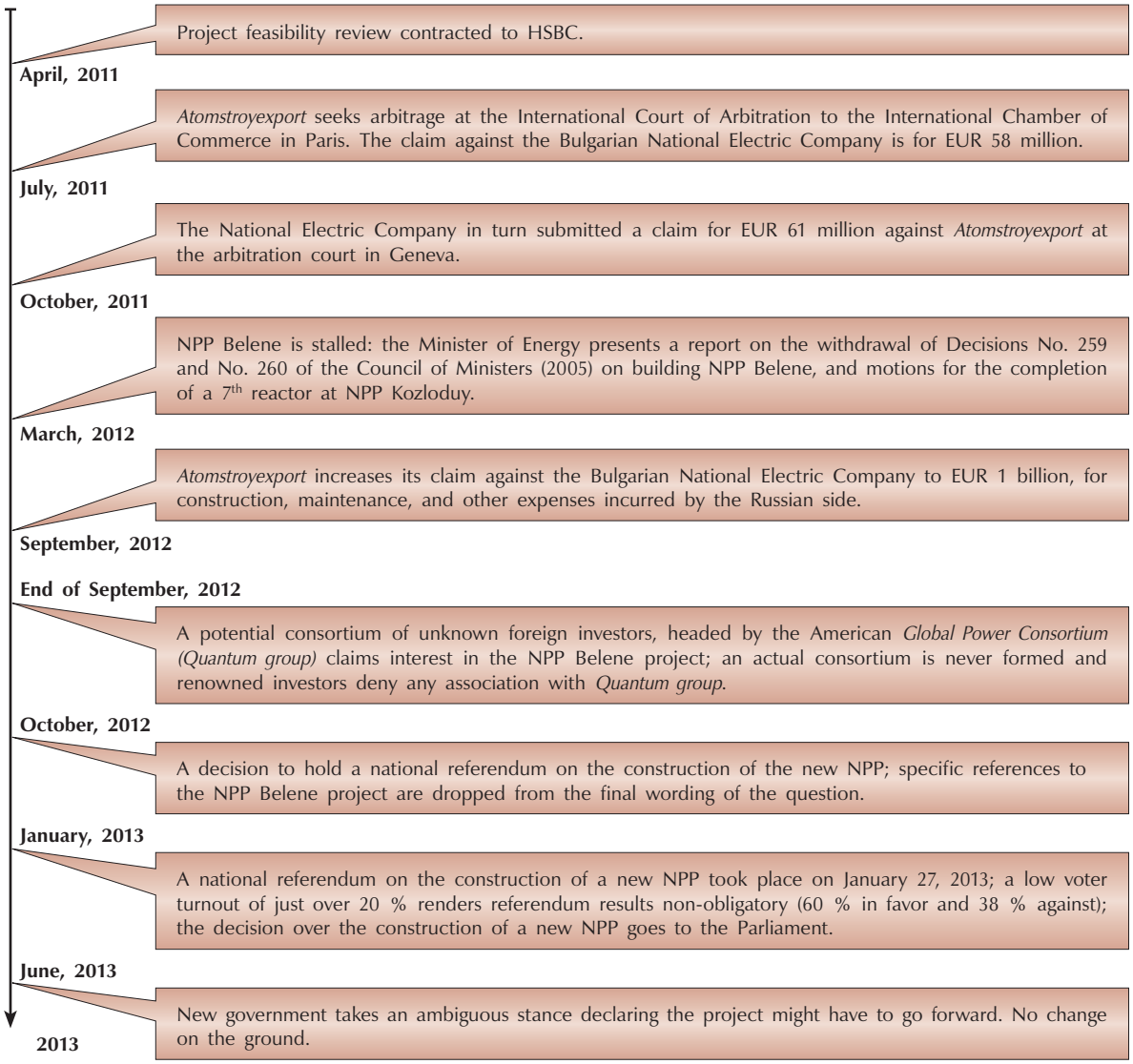
[122] Historic data for nuclear accidents was compiled by NASA in 2011. Some notable accidents include: 1) spills of spent fuel or enriched uranium in Erwin and Braidwood, USA, (2006 & 2005), Paks, Hungary, (2003); 2) damage to reactors in Fukushima and Onagawa, Japan (2011); Tomsk and Chernobyl, Russia, (1993 & 1986), Saint Laurent des Eaux, France, (1980), Three Mile Island, USA, (1979), Jaslovské Bohunice, former Czechoslovakia, (1977), Windscale Pile, UK, (1957), Chalk River, Canada, (1952), etc.

[123] European Court of Auditors, (2011), EU Financial assistance for the Decommissioning of Nuclear Plants in Bulgaria, Lithuania, and Slovakia: Achievements and Future Challenges, Special Report No 16.

Figure 24. NPP Belene – Timeline of Recent Project Developments



Source: CSD.

Box 10. The Arbitration Case against Bulgaria on the Belene NPP Project

The political struggle over the construction of the NPP Belene became international when Atomstroyexport, the leading contractor for the project and subsidiary of Rossatom, introduced an initial claim of EUR 58 million in the Paris-based International Court of Arbitration. Later in September 2012, the company raised it to EUR 1 billion. The claim is for compensation for the stoppage of the Belene NPP project earlier in 2012. NEC has filed a counter lawsuit against Atomstroyexport with the Geneva-based Court of

Box 10. The Arbitration Case against Bulgaria on the Belene NPP Project (Continued)

Conciliation and Arbitration for over EUR 61mn for delayed works. The case is extremely complicated and involves a number of stakeholders, which means that it is unlikely to be resolved anytime soon. However, the government has issued controversial statements on the case including one by PM, Oresharski, who said in June 2013 that Bulgaria is likely to lose the case in the Arbitration Court. Later, the opposition accused the government of purposefully delaying its preparation for the case citing a letter by the legal firm in charge of the Bulgarian defense. The latter was able to negotiate a postponement of the case in order to gather the necessary experts to represent Bulgaria. Since then in February, 2014, the Bulgarian Nuclear Regulatory Agency (NRA) prepared an analysis of the NPP Belene project and concluded that its completion can be positively assessed similar to the positive report by the International Atomic Energy Agency's mission. The outcome has been that the government's policy towards the Belene NPP project remains inconsistent, which not only hurts Bulgaria's chances in the Arbitration case, but also undermines its ability to formulate an independent, long-term energy strategy.

3.2.2. International Gas Pipeline Projects (South Stream and EU's Southern Corridor)

The South Stream is a natural gas pipeline project for transporting Russian natural gas through the Black Sea to Bulgaria and further to Greece, Italy, and Austria, bypassing Ukraine. As per a 2008 agreement between the Bulgarian and the Russian governments, the project plan includes two segments: North (transporting natural gas through the Bulgarian-Serbian border and further to Hungary and Austria) and South (transporting gas through the Bulgarian-Greek border, using segments of the existing transmission system in Bulgaria). In 2011, a Bulgarian-Ukrainian consortium (consisting of two companies related to Gazprom) selected to carry out the project's feasibility study. The study, carried out through 2011, provides a few route options for the pipeline, allowing for a rough calculation of the costs, yet, more precise calculations based on the upcoming Environmental Impact Assessment (EIA) are still missing.[124] The selection procedure for carrying out an EIA is still pending as of 2014. However, a final investment agreement has already been signed between Bulgaria and Russia.

The South Stream is considered a rival project to the EU's diversification plans for bringing Caspian and North Iraqi gas to Europe through the so-called Southern Corridor initiative. With a varying degree of willingness, Bulgaria has subscribed to the South Stream gas pipeline from its very beginning. There has not been a publicly available cost-benefit analysis of the project for its Bulgarian part. The latter is to be constructed by a company equally owned by Russia and Bulgaria, through Gazprom and BEH, which was set up in November 2011, following a 2009 Agreement of Cooperation between the two parties. Negotiations on the project have been opaque, characterized by pressure exertion from the Russian side through a number of unexpected visits at the highest political level and by the Gazprom top management. Despite the government's lack of firm position on the project,

[124] Bulgarian Energy Holding, (2011), Annual Report of the activities and a Financial Report.

in November 2012, a memorandum of understanding was signed that somewhat clarified an investment structure with some very sensitive aspects.

A year later, on October 30, 2013, it was announced as per a bilateral agreement that the construction of South Stream on Bulgarian territory is to be started by the end of 2013. According to the announcement, the total cost of the project would be EUR 3.5 bn as opposed to the announced only a year earlier EUR 3.3 bn and almost twice the initially planned costs in 2008. The project is to be financed through 30 % equity and 70 % debt for the Gazprom-BEH consortium. BEH would finance its equity part through a loan from Gazprom's bank at 4.25 % yield. A number of further questions are also raised as per the following issues: lack of publicly available cash flow and actual gas demand projections; the time gap between the envisaged start date of gas transit (December 2015) and the first dividend payments (January 2018); the contingency issues related to dividends dependent on questionable pipeline capacity fulfilment requirements (at least 50 % of the 63 bcm) that delineate the commercial viability of the whole project and could turn to be unrealistically high as no sufficient demand could be currently projected; the lack of clarity about the 70 % debt financing and expected high interest rates (above 8 %); compatibility problems between South Stream existing gas transit arrangements to Greece and Turkey and the related potential loss accumulation for BEH.

In addition to all of these issues, the steady spikes in the price of the project since its inception has led many observers to believe that the project can turn into a considerable strain on BEH's financial balance and indirectly onto the national budget, further exacerbating the bleak financial situation of Bulgaria's energy sector and the country's overall energy security risks. Finally, the project also holds little promise to improving the affordability aspect of energy security in the country in the future without continuing subsidies from transit towards consumption, as it only provides a new route but not a different supplier. In December 2013, it was announced by the European Commission that the South Stream bilateral agreements (including the agreement between Gazprom and BEH) are in breach of EU law, and need to be renegotiated. According to the Commission, intergovernmental agreements cannot be the basis for the operation of South Stream as three major issues were highlighted:

- EU's network ownership 'unbundling' rules need to be observed, meaning that Gazprom, which is both a producer and a supplier of gas, cannot simultaneously own production capacity and the transmission network.
- Non-discriminatory access of third parties to the pipeline needs to be ensured. There cannot be an exclusive right for Gazprom to be the only shipper.
- The tariff structure is not transparent and there is no economic reasoning behind it as well as guarantees for non-discriminatory tariffs for third parties.

The Bulgarian parliament reaffirmed its political support for the construction of the South Stream pipeline by its decision in the beginning of April 2014 to adopt at first reading amendments in the *Energy Law* granting South Stream a special status. **The goal of the bill is to circumvent the existing EU legislation on the liberalization of the internal natural gas market.** The decision creates a new legal norm which allows for the construction of a marine gas pipeline,

Box 11. South Stream – Official Investment Agreement Details between Russia and Bulgaria

- The officially announced cost for the construction of the Bulgarian segment of the South Stream is EUR 3.5 bn as per the start of construction on 31st October, 2013.
- Initially planned to be constructed with 30 % equity from South Stream Bulgaria (Gazprom and BEH joint project company with a 50 % ownership for each partner) and 70 % project financing.
- BEH would finance its 50 % equity investment though a loan for EUR 625 m from Gazprombank at 4.25 % yield.
- The pipeline would be open to other transit operators as per EU' Third Liberalization Package
- Construction to start by December 2013, dividends payable by January 2018.

defined as a gas pipeline, running through both Bulgaria's territorial waters, and onshore until it reaches "the connection point with another onshore gas infrastructure in the country". The latter also extends the definition of a "gas interconnector" to include marine gas pipelines entering the onshore territory of an EU member state, but "only used to connect the gas transmission systems of these EU countries". In this way, the Bulgarian Parliament has created the legal preconditions for South Stream to be treated not as an international gas pipeline between member-states of the EU and a third country, but as a marine pipeline, which connects to a series of gas interconnectors on EU territory. Among the justification for the proposed *Energy Law* amendments, the MPs, who introduced them, cite the EC's decision from May 2013 to exempt the TAP from the third liberalisation package, which demonstrates that the decision related to South Stream is subject to the approval of the EC, thus increasing the risk of sanctions and future losses for Bulgaria.

Independent analyses have demonstrated, on a number of occasions, that the project does not address the top priorities and public needs of Bulgaria's energy security, and is not of immediate urgency for the country. The determination, with which its implementation has been pursued by Bulgarian institutions, despite rising risks, **increases fears that it is not (solely) national public interests that drive the energy decision-making of the government**.

As parliament's decision has implications on the rest of Europe, and the European Commission has explicitly asked Bulgaria for more coordination and caution concerning South Stream, it would have made sense to at least consult the proposed amendments with EU partners in advance. Moreover so that the proposed amendments seem to create preconditions for circumventing common EU rules on the internal natural gas market by allowing the construction and exploitation of the South Stream pipeline on Bulgaria's territory without effective separation of the ownership of the natural gas and the pipeline transmission system. The adopted amendments at first reading to the *Energy Law* demonstrate yet again **the risks of state capture by third-party interests**.

3.3. PUBLIC PROCUREMENT IN THE ENERGY SECTOR[125]

Despite some limited progress in terms of anti-corruption measures and prevention of the misuse of public financial resources in general, the major problems in the energy sector keep reoccurring and some are even being exacerbated. Most big energy projects like the construction of Belene NPP, the large renewable energy projects, Tsankov Kamak HPP and other smaller projects related to the rehabilitation of facilities can serve as examples of the misuse of public procurement mechanisms.

Public procurement is a key economic development tool and also means for redistributing national income. As such it is highly prone to corruption, fraud, and other forms of abuse of public financial resources.[126] Thus, increasing accountability for public procurement in the energy sector is a matter of particular importance to the citizens of any country. In the energy sector, public procurement plays a substantial role in a number of activities ranging from building multi-billion new power stations and purchasing materials and consumables to awarding consultancy and financial services.

Data for public procurement in Bulgaria indicates that a total of 25,726 public procurement contracts were awarded in the 2010 – 2012 period for a total of BGN 15.7 billion in all of the country's economic sectors. **The general trend shows an increase of both the numbers of procedures and the amounts awarded.** The difference between years indicates the overall pattern of economic development in the period, as there was a slow but positive trend of economic growth in Bulgaria in the years between 2010 and 2012. In addition, the increase in the number of contracts and the amount of funds spent is due to the growing absorption of EU funds in this period.[127]

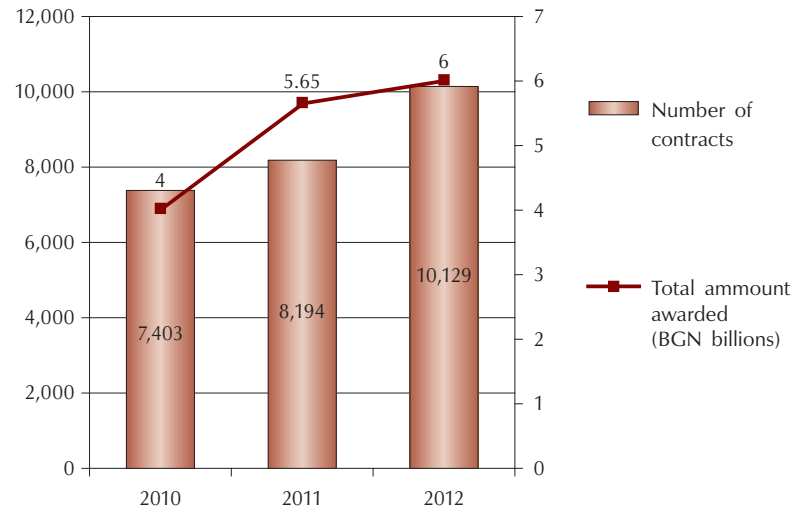
Along with health care, **energy enterprises are commonly ranked among the largest public procurers in Bulgaria** both in terms of awarded public procurement contracts, and in terms of spending. Between 18 % and 21 % of the public procurement contracts awarded between 2010 and 2012 by the largest procurers in Bulgaria were awarded by energy enterprises.

[125] The data used in this section is available for the period 2007 – 2012, but we do not expect major discrepancies in 2013 – 2014 from the previous trend. The reason is that significant changes in the distribution between competitive and non-competitive public procurement procedures requires a change in the *Public Procurement Law*.

[126] CSD, (2007), Corruption in Public Procurement: Risks and Reform Policies; CSD, (2011), Anti-Corruption in Public Procurement: Balancing the Policies.

[127] According to the data from the Information system for management and monitoring of the EU structural funds in Bulgaria (Council of Ministers), the amounts paid were for 2010, for 2011 and BGN 2,1 billion for 2012.

Figure 25. Public Procurement Procedures in Bulgaria (2010 – 2012)



Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

Table 9. The Biggest Contracting Authorities in Terms of Value of Contracts (in BGN)

Name of the contracting authority	2009	2010	2011	2012	Total 2009 – 2012
Agency "Road Infrastructure"	na	867,175,125	498,391,522	324,245,017	1,689,811,664
National Railway Infrastructure Company	107,222,720	na	563,712,073	488,000,756	1,158,935,549
Metropoliten EAD Sofia	173,065,926	na	228,899,630	164,469,684	566,435,240
Maritsa Iztok 2 TPP EAD	133,867,475	108,944,822	135,053,699	152,654,682	530,520,678
State Agency "State Reserve and War-time stocks"	na	75,667,461	132,973,987	223,705,358	432,346,806
Municipality of Varna	na	na	na	304,943,223	304,943,223
Mini Maritsa Iztok EAD, Radnevo	120,164,085	na	na	163,515,169	283,679,254
Ministry of Health	na	180,803,698	94,276,847	na	275,080,545
CEZ Distribution Bulgaria AD	na	na	242,203,105	na	242,203,105

Table 9. The Biggest Contracting Authorities in Terms of Value of Contracts (in BGN) (Continued)

Name of the contracting authority	2009	2010	2011	2012	Total 2009 – 2012
Kozloduy NPP EAD	154,999,501	na	86,063,216	na	241,062,717
Municipality of Sofia	na	na	89,624,658	134,160,469	223,785,127
Sofiyska Voda AD	84,459,629	73,851,644	na	na	158,311,273
EVN Bulgaria Electric Distribution AD, Plovdiv	72,068,374	64,558,536	na	na	136,626,910
Municipality of Burgas	na	na	na	130,168,152	130,168,152
University Hospital "Saint George" – Plovdiv	na	na	124,081,721	na	124,081,721
"Sofia Autotransport" EAD	na	na	na	117,528,585	117,528,585
Bulgarian National Railway Holding	na	100,772,520	na	na	100,772,520
National Electric Company EAD	84,477,102	na	na	na	84,477,102
"Central finance and contracts" Directorate (Ministry of Finance)	na	78,008,765	na	na	78,008,765
Energo-Pro EAD	na	71,391,526	na	na	71,391,526
Saint Ekaterina Hospital	na	70,504,168	na	na	70,504,168
Sofia Airport EAD	12,673,150	na	na	na	12,673,150
ENEL Maritsa Iztok	2,515,800	na	na	na	2,515,800

(Note: Energy enterprises marked)
Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

In terms of public procurement in the energy sector, a total of 4,846 public procurement contracts were awarded in the 2010 – 2012 period for a total of BGN 2.9 billion. In 2012, the total number of contracts is 1,826 totalling BGN 0.87 billion. In 2011, the number of awarded contracts is 1,636 at a total value of BGN 1.2 billion, and in 2010 – 1,384 contracts totalling BGN 0.81 billion. There are several important trends that could be derived from the data:

- The presence of energy enterprises in the Top 10 procurers ranking (by value of the contracts awarded to them) for the 2009 – 2012 has been reduced in exchange for greater participation of road and city infrastructure developers and municipalities (see Table 9). It is indicative that in 2012 there were 4 infrastructure/transport enterprises and 3 municipalities that awarded 7 of the

largest 10 public procurements. This could be interpreted as the result of increased public scrutiny in addition to the shifted focus of the government on large infrastructure and city projects developments. Among the energy enterprises, TPP Maritsa East 2 has been constantly awarding large contacts for the last 5 years (See Table 9). National Electric Company (NEC) has been among the lowest ranked procurers compared to other large energy enterprises. Meanwhile, there is an upscale trend for the first three ranked energy companies – ESO, Mini Maritza Iztok EAD – Radnevo, Kozloduy NPP as they show constant upward movement in ranks in terms of number of contracts awarded in the monitored period between 2007 and 2012.

Table 10. Number of Contracts Awarded by the Biggest Contracting Authorities in the Energy Sector (2007 – 2012)

Contracting Authority	2007		2008		2009		2010		2011		2012	
	rank	No. of contracts	rank	No. of contracts	rank	No. of contracts	rank	No. of contracts	rank	No. of contracts	rank	No. of contracts
Electricity System Operator EAD	24	83	16	145	21	112	12	26	5	146	1	296
Mini Maritsa Iztok EAD, Radnevo	7	187	10	212	10	137	6	97	2	192	2	257
Kozloduy NPP EAD	5	241	7	248	8	177	7	88	3	178	3	227
Maritsa Iztok 2 TPP EAD	8	186	6	306	6	227	1	260	1	309	4	205
EVN Bulgaria Electric Distribution AD	11	168	13	154	7	190	3	166	4	171	5	179
CEZ Distribution Bulgaria AD	-	-	-	-	-	-	2	201	6	130	6	126
Contour Global – Maritsa Iztok 3 AD	9	185	14	150	17	119	4	114	8	73	7	114
National Electric Company (NEC) EAD	16	126	-	118	-	55	10	33	10	47	9	62

Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

The major factors contributing to heightened corruption risks in the energy sector can be summarized as follows:

- considerable economic interests at stake, strong political lobbies and substantial national and international financial resources involved in the energy sector;

- lack of checks and balances between the inefficient state regulation, the deficiencies of the unliberalized market and the operations of the few large privatized electric distribution companies;
- lack of genuine competition and strong monopolization of individual segments in the energy sector;
- legacy of large investment projects with disproportionate value for the sector and the economy as a whole;
- high share of energy exported via intermediaries;
- lack of transparency, public awareness and independent expert assessment plus restricted access to information on national security grounds;
- the technical complexity of the energy sector;
- the pressing need to strengthen the inspectorates' capacity;
- the need to introduce anti-corruption training of personnel;
- the need to elaborate a policy for increasing employee remuneration as a means of reducing corruption risk (team performance related incentives, outsourcing, etc.).

In terms of competition among the bidders, the procedures for the award of public procurement contracts vary considerably. They fall into three major categories:

- Non-competitive procedures, where a limited number of bidders are allowed to submit a tender, after which negotiations take place. These include negotiation procedures with and without publication of the contract notice under the Law on Public Procurement (LPP), a competitive dialogue procedure, a negotiation procedure following a special invitation, and a selection procedure among three submitted tenders.
- Semi-competitive procedures open for bidding to a limited number of interested parties only by an exclusive invitation from the contracting authorities (i.e. the so-called restricted procedure under the LPP).
- Competitive procedures open for tender submission to all interested parties, including open procedures under the LPP, open contests under the Ordinance on the Award of Small Public Contracts (RSSPP), commodity exchange transactions and, to some extent, design contests (of which there have been only a few in 2011 and 2012, none of which in the energy sector).

The specific nature of Bulgaria's energy sector is conducive to the circumvention of highly competitive procedures. The opaque environment of public procurement in the energy sector is mainly based on the exclusive criteria for access and safety of nuclear energy sites, the effective technology monopoly at the micro level for a number of supplies, the ambiguous legal nature of energy export transactions, the lack of effective in-house financial audits, and the lack of monitoring and control with respect to public procurement efficiency exercised by the State Energy and Water Regulatory Commission or any other control body. The share of open procedures where a single tender has been submitted is indicative of the progressive establishment of discriminatory specifications. Open procedures in principle attract broad interest and the number of submitted tenders would typically be as high as possible. **In the energy sector, however, preference is consistently given to non-competitive procedures** for the awarding of public procurement contracts. Approximately 40 % of all procedures for the awarding of public procurement contracts in the energy sector for 2012 were non-competitive, encompassing the

various negotiated procedures with or without the publication of a contract notice under the LPP, and negotiated procedures following an invitation under the RSSPP. If the contracts awarded without a public procurement procedure are added to this number, it becomes apparent that avoiding market competition is the rule rather than the exception in the energy sector. For instance, in the 2008 – 2009 period, not a single public tender under the RSSPP was announced.

Table 11. Types of Public Procurement Procedures Followed in the Energy Sector (2008 – 2012)

Type of procedure	2008	2009	2010	2011	2012
Open procedure under the LPP	578	348	158	287	626
Restricted procedure under the LPP	74	38	-	2	-
Negotiated procedure with the publication of a contract notice under the LPP	856	534	322	318	164
Negotiated procedure without the publication of a contract notice under the LPP	580	464	130	172	241
Open contest under the RSSPP	782	354	272	220	64
Negotiated procedure following an invitation under the RSSPP	204	84	44	55	15
Project competition	2	0	0	0	0
Total number of awarded public procurement contracts	**3,076**	**1,822**	**926**	**1,054**	**1,110**

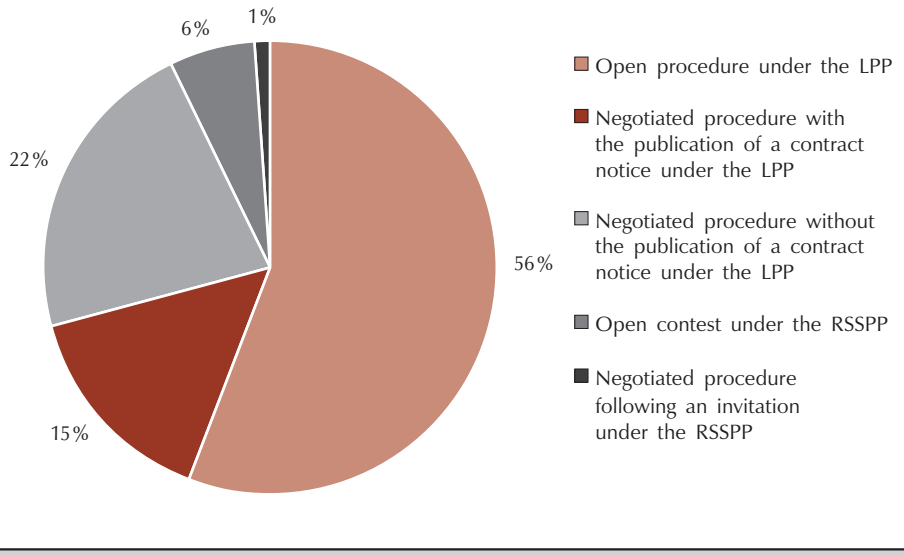
Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

Data for 2012 shows that 56 % of the contracts have been awarded via an open procedure under the LPP, and 6 % – via an open contest under the RSSPP. Thus, altogether 62 % of the contracts have been awarded via open-bidding procedures. The rest includes 15 % negotiated procedures with the publication of a contract, and 22 % – without the publication of a contract, as well as 1 % following an invitation under the RSSPP. Hence, a total of 38 % of the contracts have been negotiated following non-competitive procedures (Figure 26). Adding to these all the contracts that were awarded without using a PP procedure, it remains the case that in Bulgaria's energy's sector avoiding market competition is the rule, rather than the exception.

Furthermore, the data for public procurement in the energy sector and for all sectors combined could be seen as shaping two main trends:

- Share of non-competitive public procurement contracts in the energy sector is systematically higher than the share of competitive contracts for the rest of the economy for the years between 2010 and 2012.

Figure 26. Public Procurement Procedures in the Energy Sector in 2012

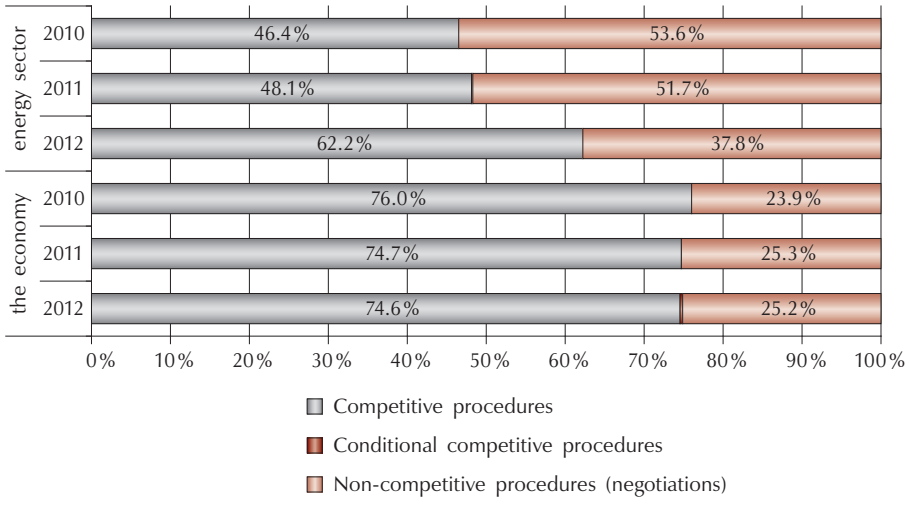


Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

- The number of competitive contracts in the energy sector **has, nevertheless, improved compared to previous years.** In 2012, the percentage of contracts awarded on competitive basis for the economy as a whole versus the energy sector in particular was 75 % and 62 % respectively. In 2011 and 2010, the difference was much more significant, as the share of contracts awarded on the basis of truly competitive procedures for the entire economy was around 30% higher than the competitive contracts in the energy sector.

The improvement with regard to the public procurement contracts in the energy sector in the period 2010 – 2012 could be interpreted as the result of increased public scrutiny and negative social opinion, expressed by different stakeholders.

Figure 27. Numbers of Public Procurement Procedures by Type (2010 – 2012)



Source: CSD calculation, based on data from the Public Procurement Agency, 2013.

Box 12. Public Procurement: NPP Belene

The public procurement (PP) procedure (i.e. negotiation with the publication of a contract notice) for selection of a contractor to engineer, design, deliver, build, and commence the exploitation of blocks 1 and 2 at the NPP Belene was opened in 2005. A review of the PP notice reveals some technical issues with the tender itself, such as the provision of different methodologies for evaluation in different sections of the document, or ambiguity about the guarantees paid by the contractor. More importantly, however, notable irregularities occurred at the stage of selection of a contractor. For example, negotiations with one of the two bidders (i.e. Atomstroyexport, the other bidder being Skoda Alliance) were not finished long after the selection decision was reached. More specifically, an agreement on the index for escalation (in the absence of which, the total price of the project could not be determined) was not reached long after the selection procedure and the actual commencement of project activities. In addition, the selected option (aka, A92) from Atomstroyexport was originally rated lower than another option by the same contractor (A87), yet, was ranked first by the selection committee. Even more importantly, a temporary agreement was signed on the 29th of November 2006, aimed to serve as a guideline in the first 12 months until a final contract is prepared and signed. However, to date, a final contract has not been prepared or signed. Instead, there are 14 amendments and additional agreements that allowed for commencement of project activities in the absence of a final contract with agreed terms, which is at odds with the LPP. Moreover, negotiations between the contracting authority (NEC) and the contractor (Atomstroyexport) on key project characteristics (most notably, the index for escalation of the price, in the absence of which, a total price could not be determined) continued long after project activities have already started. While illogical (i.e. this way NEC signs up for a project of

Box 12. Public Procurement: NPP Belene (Continued)

unknown costs), the latter is also in direct violation of the LPP. Namely, the *Public Procurement Law* does not allow for negotiations on the terms of the contract after a selection procedure of a contractor has taken place. Moreover, the same law does not allow for commencement of project activities before all terms have been negotiated.[128]

[128] Public Financial Inspection Agency, (2012), Report on the Financial Inspection Carried Out on the National Electric Company.

4. WHERE TO: CONCLUSIONS AND POLICY RECOMMENDATIONS

In 2011, CSD published the *Energy and Good Governance in Bulgaria: Trends and Policy Options* report, highlighting the risks of widespread corruption practices, coupled with mismanagement of energy companies and the irregularities in public procurement contracts, as the main challenges for the development of the energy sector in Bulgaria.[129] The findings of the current report also underline the lack of adequate progress in the 2011 – 2014 period in implementing the values of transparency and good governance and widespread state-capture deficiencies. The report illustrates the major structural and governance problems in the management of the energy sector from an energy security standpoint and concludes that adequately tackling **energy security is a challenge that has not been strategically approached in Bulgaria**. Instead, systematic failure to act as per best market and good governance practices and address long-term energy security risks highlights anti-social policy making, resulting from the implications of widespread political corruption and state capture deficiencies in the country as precise understanding of national specificities, regional characteristics (South-East Europe and the Black Sea Region), and the position of the country as per EU's strategic energy policy is frequently absent. Adequate realization of national priorities and sustainability of development of Bulgaria's energy sector have been undermined by subpar decision making and self-reinforcing cycle of crunches, raising questions about the motivation of the systematic governance failure and the possible **capture of national priorities by third-party interests and wide-spread rent-seeking behavior**. Some of the major conclusions and policy recommendations are listed below.

Conclusions:

- The biggest threats to Bulgaria's energy security are the high level of energy poverty, the lack of supply diversification, and the energy efficiency challenges occurring from outdated energy and residential infrastructure. Low-levels of access to callable energy resources undermine efficiency and independence of policy making in the energy area in Bulgaria.
- Large-scale undertakings in the last 10-15 years, including big investment projects, involvement in international pipelines and renewable energy development have not been managed efficiently and have led to loss of social wealth. They have often been the result of state-capture deficiencies of policy-making in the sector.
- Bulgaria's government is overwhelmed by third party initiated projects, side-lining its own planning and investment needs and leading to subordinate treatment of energy security focus projects such as interconnectors and storage facilities, gas and power exchange, energy efficiency and energy saving.
- Legislative volatility and state capture have led to subpar policy decisions and loss of investment security. The independence of the national energy

[129] CSD, (2011), Energy and Good Governance in Bulgaria: Trends and Policy Options.

Regulator from both political and economic interests has been compromised. Involvement of political leaders in the operational and strategic management of state-owned energy enterprises has been widespread.

- There has been excess of electricity production on the back of consistently low levels of electricity demand in the 2009 – 2014 period, which has not precluded the government from furthering new generation projects.
- State-owned energy enterprises are not ready to meet liberalization challenges. BEH's financial situation has been worsening in the last years. Within BEH NEC EAD is financially insolvent while Bulgargaz' financial situation is also particularly challenging in regards to servicing its short-term obligations.
- The current model of centralized administration and excess electricity production creates strong incentives for corruption and financial abuses at the expense of state-owned enterprises and, ultimately, end users. The current model should give way to decentralized production, sensible liberalization of the energy market, and adequate mechanisms to cushion vulnerable energy poor groups against the transition.
- Despite certain improvement, the share of non-competitive public procurement contracts awarded in the energy sector is systematically higher than the share of non-competitive contracts for the rest of the economy.
- Decisions to commence large energy infrastructure projects need to be based on clear fact-based analyses (incl. feasibility, sustainability, cost-benefit, ROI, etc.) that are publicly available. In light of recent social unrest, it is paramount that the current practice of signing contracts and agreements for large energy projects in the absence of information about the total costs (i.e. the South Stream and NPP Belene) be discontinued.
- The government should adopt responsible approach to promoting indigenous production capacities in its efforts for breaking energy dependence, including local communicates support and development schemes.
- Each new energy project has to be assessed in terms of its potential to resolve the most urgent energy issues in the country. The latter necessitates a viable and universally accepted national energy strategy with reliable priorities and locally-specific action tools. Moreover, it involves clearly defining what constitutes energy security for Bulgaria – i.e. reducing import independence, boosting sustainability and system stability, as well as the potential of large energy infrastructure investments to undermine the financial security of the country, which should not be understated.
- Capture practices, which bind together political, administrative and economic interests at the expense of the public interest are still palpable in most energy markets, including some, which are fully liberalised. For example, the inability of the Bulgarian Customs Agency to adequately enforce its regulations on excise duties and measurement is particularly alarming, as it demonstrates that liberalisation alone is not sufficient to guarantee fee market.
- Diversification is still being paid only lip service by Bulgarian politicians, who have demonstrated in a number of cases that they are not in a position to oppose strong industry or foreign interests to defend public interests and the end users. Among the many examples are the choice of large transit pipelines at the expense of interconnectors, the ban on alternative gas exploration, the protracted handling of excessive green subsidies, etc.

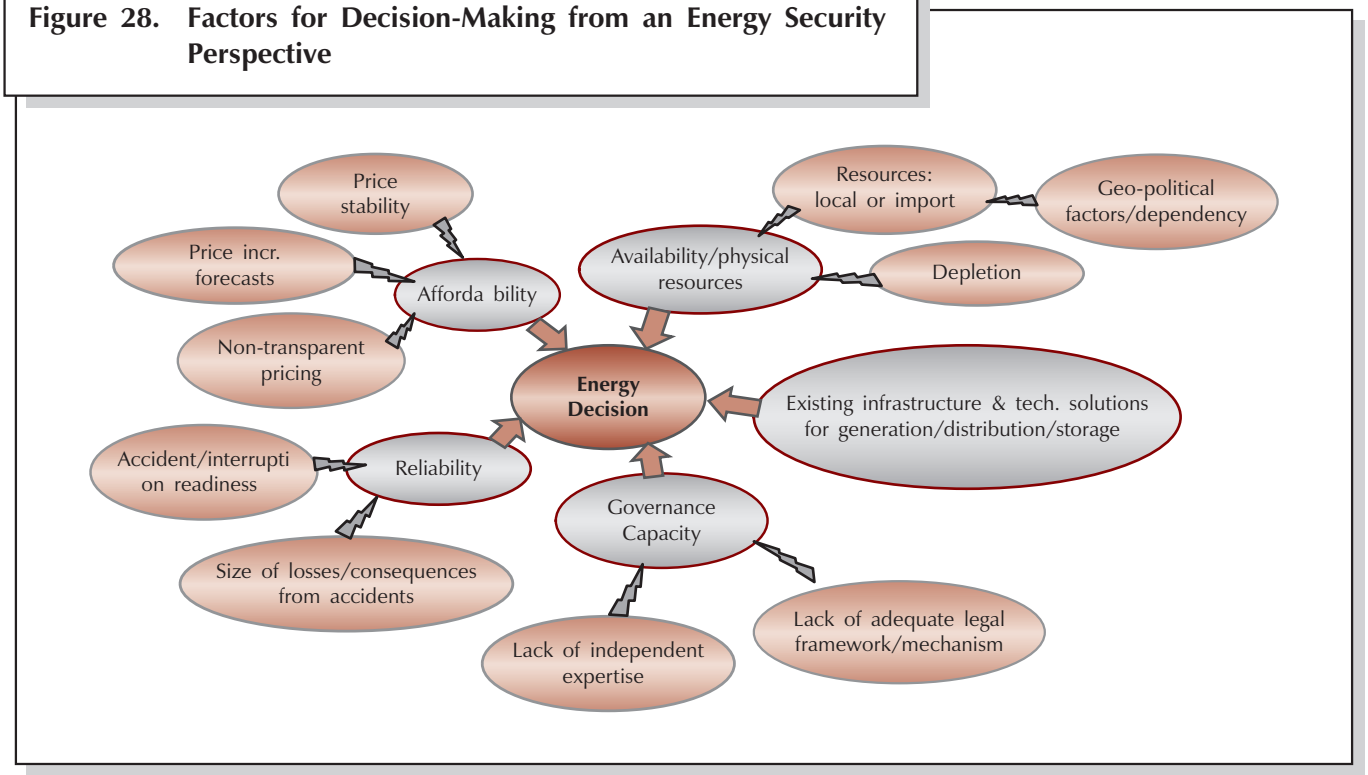
Policy Recommendations:

Improving the governance of the energy sector, including the functioning and management of state-owned energy companies entails, as a minimum, the implementation of the following actions:

- The political leadership should reduce their direct involvement in the operational management of energy enterprises and instead focus on policy development, the provision of public information, and control functions. The compliance with EU priorities and directives, necessitates a shift in national energy policy away from its excessive focus on adding generating capacities towards ensuring the stability and security of energy supply, reducing energy poverty, and improving energy efficiency.
- Introducing compulsory corporate governance standards for energy sector state-owned enterprises following the best international principles such as the OECD Guidelines on Corporate Governance of State-Owned Enterprises. The standards shall ensure reporting and disclosure of data and information regarding:
  - Financial results, implementing the existing practices and methods, used by publicly traded companies;
  - Key financial indicators for monitoring and assessment of the operational management performance;
  - Consistent and comparative over time reporting of implemented programs and policies, including key indicators for monitoring their implementation and for allowing ex-ante, mid-term and ex-post impact assessment.
- Focus on socially positive measures as opposed to retroactive punitive actions against enterprises that have taken advantage of feed-in-tariffs. The introduction of new direct or indirect taxes on specific sub-groups of private enterprises, e.g. 20 % tax on the revenue of renewable energy producers, imposed on January 1st 2014, should be directed towards development programs in the sector that will benefit all actors (e.g. technological development, research, innovation, etc.) and not for ensuring financial resources for the state-owned enterprises and/or the state budget.
- Consider all options for Introducing shale gas exploration under scrutinized procedures, in line with the highest EU environmental standards. In the meantime stimulate and expand conventional exploration in the black sea.
- An external independent annual energy policy review should be commissioned by an interparty committee in the Bulgarian parliament, which includes the following: a) an assessment of energy policy performance vis-a-vis the stated priorities for the year, the programming budget, and the strategic goals; b) an evaluation of the financial state of state-owned energy enterprises and an identification of the risks to the sector's development, including required state guarantees and risks of hidden privatization; c) an outline of the priority areas of development of the energy policy for the next year.
- Introduce large-scale and long-term subsidized programs for gasification and energy efficiency in the residential sector, which coupled with gas sources diversification can ease the social pressure on electricity prices.
- Introduce prioritization and selection of large investments projects in the decision-making process, based on clear and transparent procedures and fact-based analyses, synchronized with the EU priorities.

- The Commission for Protection of Competition and the Bulgarian Administrative Courts should ensure full transparency on the judicial process of investigating cartelization practices in the downstream fuel, gas, and electricity markets.
- Increase the administrative capacity of the national energy regulatory body (SEWRC), their independence from political and economic interests and their transparency and accountability to both the National Parliament and the public.
- Build consensus on long-term priorities, backed-up with national energy strategy, approved by major political parties, in line with the EU priorities. Implement as fast as possible the EU Third liberalisation package in terms of both regulatory changes and institutional practices.

Figure 28. Factors for Decision-Making from an Energy Security Perspective



Source: CSD.

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