

**Recent Developments in the Natural Gas Market
Liberalization in Bulgaria – analyzing the inconsistencies
with the EU policy objectives**

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Abstract

Market liberalization of the natural gas sector in the EU countries has been seen as an important tool to provide bigger choice and better products at reasonable prices to both consumers and businesses across the Union. This research examines the level of implementation of the EU gas policy objectives in the case of Bulgaria as one of the EU member states. The thesis identifies the major areas of the gas sector where the country has not achieved liberalization and the main obstacles that hinder the development of market competition. In order to answer the research questions, the Bulgarian gas industry is analyzed on the basis of five criteria: market concentration, network regulation, wholesale market development, retail market development and cross-border trade. The specific characteristics of the sector are benchmarked against the requirements of the EU legislation on market liberalization. The results show that despite the *de jure* gas market liberalization in the country, a number of barriers hinders the competition of suppliers, transmitters and end-providers. As a result of serious structural, regulatory, institutional and infrastructural problems, the gas sector remains highly monopolized especially on the upstream market and closed to new domestic and foreign entrants, which undermines the goals of the EU for the creation of Internal Gas Market and questions the desire of the domestic policy-makers to meet these EU policy objectives. The research concludes by providing a set of short and long-term recommendations to cure the existing problems of the industry and to fully liberalize the sector in line with the EU legislation.

Key words: Market Liberalization, Natural Gas Sector, Gas Directives, Bulgaria, European Union

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List of Abbreviations

BEH – Bulgarian Energy Holding

CNG – Compressed Natural Gas

CPC – Commission of Protection of Competition

DG – Directorate General

DSO – Distribution System Operator

EC – European Commission

EP – European Parliament

EU - European Union

FEP – First Energy Package

ISO – Independent System Operator

ITO – Independent Transmission Operator

LNG – Liquefied Natural Gas

MEET - Ministry of Economics, Energy and Transport

NRA – National Regulatory Authority

OTC – Over-The-Counter

OU – Ownership Unbundling

SEP – Second Energy Package

SEWRC – State Energy and Water Regulatory Commission

SSO – Storage System Operator

TEP – Third Energy Package

TPA – Third Party Access

TSO – Transmission System Operator

VIU – Virtually Integrated Undertaking

Introduction

The market liberalization of the electricity and natural gas sectors across all member states is an integral part of the European Union (EU) policy objectives in the recent two decades. The EU has, therefore, aimed to create fully integrated national energy markets, in order “to give consumers and businesses more and better products and services, more competition and more secure supplies” (European Commission 2012a). Even though a significant progress has been made in the creation of Internal Energy Market, especially in electricity, there are still serious problems experienced in the natural gas sector across the EU.

For a small member state, such as Bulgaria, the participation in the framework of the Internal Gas Market is an important aspect of its EU membership which will guarantee the proper functioning of the sector and the protection of the consumer interests. As a new member state with a relatively short history of being part of the common European family,¹ the implementation of the EU goals on a national level, however, proves to be a difficult task. The natural gas sector is still suffering from serious drawbacks and inefficiencies, the majority of which have been inherited from the time of centrally planned economy and have not been eradicated in the past twenty years due to the unwillingness and/or inability of a number of governments to enforce reforms.

The natural gas industry in the country is still highly politicized, considered to be a priority of the state rather than the market in terms of governing, contract negotiation with

¹ Bulgaria has officially begun the accession negotiation talks with the EU on February 15th 2000 and concluded them on December 17th 2004, six months before the initially scheduled date (European Commission 2012b). The country has been a member of the Union since January 1st 2007.

suppliers and price regulation for consumers. As a result of this state intervention, the proper development of competition is significantly hindered.

Thus, the main aim of the thesis is to assess the degree of successful implementation and harmonization of the European natural gas policy framework in the context of Bulgaria, to identify the major issues hindering the liberalization process and to propose recommendations how they should be tackled. In order to do this, I first identify and analyze the motivations behind the emergence of the EU natural gas policy, under which the liberalization and competitiveness of the sector is seen as an objective with high priority for the Union as a whole. Then I move to detailed analysis of the specific case of Bulgaria.

While there are reports on an EU level (*e.g.* European Commission 2011, European Parliament 2010) which provide summarized information on the natural gas market situation in all of the member states or studies that link the theoretical framework of market liberalization with the level of overall harmonization across the EU (Asche *et al* 2001, Haase 2009, UNECE 2012), the academic literature does not go much into detail about the *de facto* liberalization of the EU national markets. Moreover, even though that there is certain contribution of Bulgarian non-governmental organizations (NGOs) and researchers to the topic of natural gas market inefficiencies (CSD 2010a, Nitzov *et al* 2010, Stefanov *et al* 2011, SEWRC 2011), it is mainly concentrated on issues of energy security through import diversifications, bad governance practices, issues of corruption, and the evaluation of ongoing projects, such as NABUCCO and South Stream. Little has been the discussion, though, on the incompliance of Bulgaria with the EU natural gas policy. Therefore, the thesis aims at bridging this gap by researching to what extent Bulgaria has both legally and functionally met the requirements of the EU legislation on natural gas market liberalization. This allows to

draw conclusions on the major obstacles hindering the competitiveness of the sector and to provide recommendations that will improve the current situation.

The thesis follows a qualitative research approach implementing an in-depth single case analysis. In order to avoid the mistake of using voluminous information and to try to capture everything on the topic, I also implement the characteristics of ‘the subsidiary test’ developed by Egenhofer and Gialoglou (2004) from the Center of European Policy Studies (CEPS). The test is based on five market dimensions which measure how well a member state is placed to ensure that the EU policy objectives are reached. By using the general framework of the subsidiary test, I adapt it to the specific context of the gas market in Bulgaria with the goal to assess how far the liberalization process has gone in the country. In light of this, I examine a number of country specific criteria and give an answer to the following research questions:

1. Concentration of market power – are there functioning oligopolies and even monopolies in the production, import and supply of natural gas?
2. Network regulation – how successful is the legal and functional unbundling of the Transmission System Operator (TSO) and the Distribution System Operators (DSOs); is there a non-discriminatory access provided to third parties? What is the role and the degree of independence of the National Regulatory Authority (NRA)?
3. Wholesale market - what is the design of the wholesale market and the existing network tariffs?
4. Retail Market: Empowering the end-consumers – can the end-consumers freely choose their natural gas suppliers; what are the annual switching rates for household and non-household clients; is there end-user price regulation? Is there transparent information offer to the consumers?

5. Cross-border dimension – is there a proper gas infrastructure, such as interconnectors with the neighboring countries, which is essential for increasing the degree of competition on the domestic market?

The research is based on the review of institutional, governmental and regulatory reports, NGO studies and EU legal documents and statistical information. By doing this, the thesis seeks to prove that despite the fact that *de jure* the gas market in Bulgaria is 100% liberalized, *de facto* there are still a number of obstacles which hinder the competition of supplier, transmitter and distributors, the freedom of choice of consumers and undermine the goals of the EU for the creation of Internal Gas Market.

The thesis is organized in five parts. The first chapter provides the definition and theoretical framework of market liberalization and competitiveness. The second chapter lays down the background of EU natural gas policies and the reasons behind them. Chapter 3 introduces the market facts, the structural and institutional characteristics of the Bulgarian natural gas sector, based on which Chapter 4 builds on its analysis in order to prove the hypothesis that the natural gas market in the country is far from being liberalized. The final part of the thesis summarizes the findings and offers a set of recommendations for further improvement of the sector's inefficiency.

Summary of Policy Recommendations

The detailed analysis of the natural gas market situation in Bulgaria shows that there are four types of obstacles experienced, which prevent the complete market liberalization: structural, institutional, regulatory and infrastructural. Based on this conclusion, a set of short and long-term recommendations can be offered to address the particular problems of the sector.

In order to remove the **structural** inefficiencies, there is a need for:

1. Complete legal and functional unbundling of the TSO from the Vertically Integrated Undertaking (VIU) and the separation of its transmission and storage activities.
2. Listing of stocks of the public supplier and gas transmitter on the Bulgarian stock exchange, which will improve the transparency of their activities and management practices.

From an **institutional** point of view:

3. The NRA should be free from any political and financial dependence on other institutions.

From a **regulatory** perspective:

4. The NRA should also provide complete and accurate information to the final consumers on their rights and obligations.
5. The regulation of natural gas prices should be gradually removed.
6. The current tariff model should be changed to 'entry-exit' as per the EU requirements.

In terms of middle to long-run recommendations two important **infrastructural** steps are required for the market liberalization in Bulgaria:

7. The creation of a natural gas exchange and
8. The introduction of gas-to-gas competition on a regional level.

Chapter 1. Theoretical Framework

There would be no clear understanding of what market liberalization means and what are its benefits from an economic perspective without putting it in a theoretical context. This chapter, therefore, begins by providing definition of market liberalization and elaborates on the various advantages of market opening and greater competition. Furthermore, the chapter examines the principles of liberalization by putting them in the context of the natural gas industry which has significant differences from other commodity markets where liberalization and integration on an EU level have already occurred.

1.1. Market Liberalization and the Benefits of Greater Competition

The market liberalization of previously protected economies is a significant change in the global economic conditions observed in the last couple of decades (Malik 2006). The most often used definition for market liberalization is ‘the freedom to engage in economic activity at home and/or abroad, freedom subject to institutional and policy constraints needed to guarantee public interests at large’ (Ognivtsev UNCTAD 2005). Market liberalization is important because it leads to higher competitive intensity on the market since more and more entrants are joining a particular industry (Malik 2006). As a result of the increase in competition, economic theory predicts that the market will be characterized by lower prices and higher outputs (Brakman *et al* 2009, p. 3). All of these will benefit the consumers both in the short and in the long-run and will improve the general social welfare (2009, p. 3).

In the context of the economic theory of competitive (contestable) markets, Baumol (1982, p. 4) proposes a model of potential competition with several specific properties, the most important being that:

The contestable markets are characterized by the absence of any sort of inefficiency, because the existence of unnecessary costs, as well as abnormal profits will serve as an incentive for other companies to enter the market. In the short-run both profits and wastes can be observed but in the long-run they will not be able to withstand the threat of new competing entrants (Baumol 1982, p. 4). The notion of efficiency due to the higher competition can be also explained by the fact that competitive markets create conditions for performance comparison (Vickers 1995, p. 8).

The theory of contestable markets suggests that rather than the structural conditions, it is the technical and legal conditions that might hinder the development of competition and pose a threat to the liberalizing market (Slabá 2008, p. 82). Therefore, the best way to reach the goal of greater competition is the removal of legal and technical barriers to entry (2008, p. 82). The threat posed by new entrants to the incumbent in the industry will also allow for effective allocation of resources (2008, p. 82).

The move towards market liberalization comes together with the introduction of greater competition. However, as Armstrong and Sappington (2006, p. 360) conclude in their study “the liberalization process can constitute a challenging journey and one that entails considerable uncertainty.” Successful liberalization is seen by them as not only about the removal of legal restrictions on entry and access to the regulated industry, but it is also about setting appropriate policies to facilitate the creation of additional conditions stimulating competition (p. 345). The authors also claim that in the long-run competition can be fostered by removing the barriers to entry and empowering consumers to discipline industry suppliers (p. 360). In order to improve the process of liberalization, Armstrong and Sappington recommend a number of policies, such as the reduction of the time and cost of switching providers,

rebalancing the prices of the incumbent in order to reflect more accurately the operational costs and privatizing state-owned companies to improve the management incentives.

The concept of liberalization understood as the increase of competition on the market and the decrease of the degree of state influence, is linked to the initial level of state intervention in the economy (Haase 2009, p. 49). In the context of the liberalizing Internal European Market, Haase argues that there is no tendency towards the deregulation of the different sectors of the economy, but it is rather one of re-regulation. Therefore, she claims that the belief of many economic theorists that the market would be able to self-regulate and that there is no need for the presence of a regulatory authority is not applicable in the case of the EU. Here market observations conducted by the national agencies can successfully assess the degree of competition on the market and make sure that it is not endangered by unauthorized mergers (2009, p. 51). This is the so called 'regulation-for-competition' which Haase defines as 'the proactive regulation aiming to introduce competition into a formerly monopolistic market structure' (p. 51). In this framework of proactive policies for the promotion of competition a typical example is the liberalization of the natural gas market in the EU.

1.2. Liberalization of the Natural Gas Industry

In the past the natural gas industry in the European countries was typically characterized by vertically integrated state-owned companies and public monopolies operating both on the upstream and the downstream markets. According to Cavaliere (2003, p. 2), the ownership of the state was a necessary prerequisite for providing the proper incentives for investment on all levels of the market: production, import, transit, transmission and local distribution and thus, creating a solid network system where it previously did not exist.

Due to the high fixed costs for setting the gas network system, the gas transmission was set on the principle of a natural monopoly. This is an important fact still present in the case of Bulgaria as it will become clear in the later chapters. According to the theoretical economists and Baumol in particular (1977, p. 809), a natural monopoly occurs because of economies of scale which can be realized by only one company on the market. He explains that in an industry where a single firm can supply the entire market at a lower-per-unit cost than several firms or an industry where entrants are not naturally attracted as their survival will be difficult, create conditions leading to the emergence of a single firm called natural monopoly.

The theory on competition and monopoly is further elaborated by Depoorter (1999, p. 501). He claims that under the conditions of perfect competition a firm will charge price equal to the marginal cost of the product, because it is engaged in a competitive bidding process with the rest of the firms. When a monopolistic market exists, however, Depoorter argues that the profit-maximizing monopoly will try to charge a higher price for its product in order to realize higher profits. As a result of this, the wealth will be transferred from the consumers to the producer and some of the potential consumers will be simply excluded from the market because they will not be able to afford the product, leading to allocative inefficiency (Depoorter 1999, p. 501). The question that arises here is whether the same inefficiency and price increase occur with the natural monopoly. When a firm is not pressured by competition, it acquires monopoly power and will no longer keep the prices close to the level of the marginal costs (Depoorter 1999, p. 502). According to modern antitrust economists under such conditions 'X-Inefficiency' can be observed which indicate internal wastes, the dominating firm falls victim to its own inefficiencies and the market is no longer optimal (Mueller 1996 in Depoorter 1999, p. 502).

In the context of the idea for liberalization of the gas sector in Europe dominated by natural monopolies, other steps than simply enforcing partial competition to generate competitive pressure on the monopoly were required, because it would not lead to the desired effect of the policy-makers. As a result of this, Mestmacker (1993, p. 64) claims that the only promising solution is the complete liberalization and separation of production, transit and transmission activities to allow for the emergence of competition.

The liberalization of the EU natural gas industry created physical and institutional linkages between the markets in the different member states (Hobbs and Rijkers 2005, p. 2). Stronger market linkages between economies are generally seen as beneficial because they lead to lower costs of imports, better export opportunities for the producers and in the long-run, lower amount of spare reserves to be maintained (2005, p. 2). Again from an economic point of view, the liberalization of the gas sector and the integration of the individual member states markets into one will lead to a reduction in the production costs of the enterprises and the price adjustment to of the rest of the market players (European Commission 2001, p. 50). If an enterprise fails to do so, it might find itself in a market dominated by its competitors. Therefore, according to the UNECE report (2012, p. 12), the major goal of the natural gas market integration in the EU is not to uniformly create lower prices but rather to ensure that the gas prices are fair and reveal the real market conditions. The liberalization ensures that prices reflect the demand and supply fundamentals, such as the costs of production, transport and storage by allowing consumers to respond to them (2012, p. 10). That is why the UNECE report identifies that in periods of oversupply of gas in Europe, the prices reflect only the marginal cost of supply which is low at the time. In the opposite situation when there is undersupply, the prices reflect not only the value of the energy commodity but also the cost for investing in its supply.

Despite the numerous benefits of market liberalization and the ongoing process on an EU level, the natural gas market in Bulgaria, as it will be seen in chapters 3 and 4, has remained relatively closed. The main reason is the belief that the state can better regulate this particular sector of the economy, which has small domestic capacity and relies mainly on imports. Furthermore, the lack of flexibility in responding to rapid price fluctuations and the low efficiency of the gas industry has strengthened the role of the state in governing the natural gas market in the country. It is questionable, however, how beneficial the state intervention is and whether it really protects the consumer interests in the best possible way. A further market liberalization of the natural gas sector in Bulgaria will give the possibility for new entrants to compete with the incumbents, which will generate fair prices for the end-users and better investment incentives for the sector. Greater competition will increase the dynamics of the market and will attract the interest of a broader scope of producers, which will allow for proper diversification of the natural gas imports and improve the energy security of the country and the standard of living of the citizens. Having in mind all of the benefits listed above, the market liberalization of the Bulgarian gas sector is a necessary step to be taken.

Against the background of this theoretical framework for the benefits of generating competition in the natural gas sector, the thesis aims to bring more light to the level of market openness in the case of Bulgaria. The current market conditions in the country will be benchmarked against the EU legislative requirements which are summarized in the following chapter. The benchmarking will be done by using the subsidiary test of Egenhofer and Gialoglou (2004) which successfully captures a set of important market determinants for measuring the level of liberalization. By adapting them to the Bulgarian natural gas sector

conditions, the thesis will provide an answer to all research questions outlined in the introduction.

Chapter 2. European Union History on Internal Gas Market Creation

Since the main concepts and the theoretical framework of the thesis have already been introduced, this chapter first provides historic overview of the creation of the Internal Gas Market in the EU. Second, it analyzes the reasons behind the need for a series of EU policy directives throughout the last two decades and the major differences between them. This analysis provides the benchmark upon which the Bulgarian degree of gas market liberalization will be assessed in Chapter 4.

2.1. Early Policy Scope until 1998

While energy security as a policy objective has been on the agenda of the EU since the moment of its creation, the policy efforts for free and fair competition in the Internal Energy Market did not attract the attention of the Council until the late 1980s (Eikeland 2004, p. 3). It proved an even harder task to define a straight-forward natural gas policy on an EU level due to the different resource endowment of the member states, the non-renewable characteristic of the energy commodity and the fact that natural gas is mainly traded outside the borders of the Union (2004, p. 4). Therefore, in the early years of the establishment of the Union, natural gas was relying mainly on the general provisions of the EEC Treaty of March 25th 1957 in contrast to other commodities, such as coal and nuclear energy, which have been strictly regulated by separate treaties (Mestmacker 1993, p. 48).

The first major step towards including the energy sector in the framework of the internal market was the publication of a working paper of the European Commission under the title '*The Internal Energy Market*' in 1988 (European Commission 2001, p. 47). The main philosophy behind this idea was the fair and free competition of energy companies in all

member states. That would eventually lead to faster economic growth and higher standard of living (Eikeland 2004, p. 1).

The Commission study intended to identify the main steps necessary to liberalize the market and the major obstacles which needed to be overcome. In terms of natural gas the most important obstacle was the existence of monopolies in the supply and transmission which limited the competition and created cautious markets (European Commission 2001, p. 48). The main lines of action suggested by the Commission for improving the performance of the market included the elimination of any technical barriers for further liberalization, the opening of public contracts, the harmonization of indirect taxes and strong support for investment projects in the infrastructure (2001, p. 48).

2.2. Recent Developments

Despite the Commission efforts to initiate the market liberalization during the 1980s, no further steps were implemented in this field in the next decade. The policy framework of the Internal Gas Market only began to develop in the late 90s with the introduction of the First Gas Directive.

2.2.1. First Gas Directive

On June 22nd 1998, the fifteen member states of the EU signed Directive 98/30/EC outlining the common rules for natural gas trade on the internal market, which was part of a much broader EU legislation framework, known as the First Energy Package (FEP) including regulation and directive on the liberalization of the electricity market as well (Thomas 2005, pp. 11-12). This was the first significant step taken by the EU countries towards market opening, allowing competition to emerge and the introduction of the principles of market behavior for the national gas companies in the different member states.

As identified in a report published on the Bulgaria Trust and Invest website (Bulgaria Trust and Invest 2006, p. 1), the main element of the First Gas Directive was the right of ‘privileged’ consumers to change their gas distribution company. ‘Privilege’ consumers in the scope of the Directive meant mainly non-residential users which have met a certain threshold of gas consumption, depending on the level of market liberalization. Those criteria were strictly defined by Directive 98/30/EC. The right to choose an end-provider was also connected to the non-discriminatory access to the transit and transmission network granted to entrants from third countries (Bulgaria Trust and Invest 2006, p. 1).

The report also explains that the Directive included provisions for the creation of a NRA with the responsibility to exercise control over the price formation of the gas companies and monitor the possibility for Third Party Access (TPA). In addition to this, the need to separate the accounting practices of supply, transit, transmission and storage of natural gas was included in the scope of the legislation (2006, p. 1). Directive 98/30/EC came into force in 2000.

2.2.2. Second Gas Directive

Despite the fact that the first steps towards the creation of an internal market for natural gas were set by the First Gas Directive, their implementation was moving slowly, mainly because of the different level of market development in the EU member states (Thomas 2005, p. 13). Again under the influence of the European Commission, the 15 EU countries adopted a Second Gas Directive (2003/55/EC) on June 26th, 2003, part of the Second Energy Pact (SEP) (Bulgaria Trust and Invest 2006, pp. 1-2) with the goal of further removal of the barriers existing in front of the liberalizing market.

There are five main novelties that the new Gas Directive introduce in order to speed up the opening of the market (2006, p. 2):

1. New dates were set for the gas market liberalization according to which as of July 1st 2004 all non-residential users and as of July 1st 2007 all residential users would be able to avail of the liberalized natural gas supply.
2. The rights and obligations of the NRA had been increased, especially in terms of monitoring the level of competition and transparency on the market.
3. Equal rights and non-discriminatory access were granted to third parties for the transit and transmission networks of liquefied natural gas (LNG) facilities.
4. Third Party Access (TPA) was allowed to the storage facilities.
5. Legal unbundling of the TSO from the organization and decision-making of other activities not related to the transit and/or transmission of natural gas was initiated (Bulgaria Trust and Invest 2006, p. 2).

Directive 2003/50/EC came into force in 2004.

2.2.3. Third Gas Directive

The most recent step towards full liberalization of the natural gas markets in the EU was taken in 2009 when on July 13th the 27 member states agreed to adopt Directive 2009/73/EC, as part of the Third Energy Package (TEP) (European Commission: DG for Energy 2009, p. 2).

After the adoption of the Second Gas Directive and the complementary regulations part of the SEP, it became clear that the right of EU consumers to enjoy the benefits of choosing their gas supplier could not be implemented in all member states. In addition to this, a priority has been placed on the need for developing new rules to tackle the structural deficiencies, because the requirements of the SEP on the separation of the supply and production activities on one hand and the transmission and distribution activities on the other did not succeed in achieving their market objectives (Surugiu 2012, p. 5). The main reason for this failure was that the

network operators could still create discriminatory conditions which will benefit the incumbent market players at the expense of new entrants (2012, p. 5).

Therefore, the new rules of the game needed to be set more strictly and this was done through the Third Gas Directive which introduced important changes in the existing legislation.

1. New high standards on customer service obligation and consumer protection were included, according to which end-users had the right to switch suppliers within three weeks and suppliers are obliged to provide full and transparent information to their clients (European Commission: DG for Energy 2009, p. 4)
2. Apart from the legal unbundling of the TSO introduced with the Second Gas Directive, its functional unbundling became part of Directive 2009/73/EC. The member states had the right to choose between three different models for the unbundling procedure (Tsekova and Rangelova 2010):
 - a. *Ownership unbundling (OU)*: the TSO owns the transit and transmission network and is not controlled either directly or indirectly by a Vertically Integrated Undertaking (VIU), which also operates in the supply.
 - b. *Independent System Operator (ISO)*: the VIU has ownership rights over the transmission network but has handed over its operation, maintenance and development to a separate legal entity, the ISO.
 - c. *Independent Transmission Operator (ITO)*: the ITO has remained within the VIU but additional regulatory mechanisms have been introduced to ensure its independence (Tsekova and Rangelova 2010).
3. The NRA's legal and functional independence was strengthened by separating it from any state or public entity (European Commission: DG for Energy 2009, p. 9). As it

becomes clear from the information provided by the DG for Energy, the power of the NRA was significantly increased and included:

- a. “to fix or approve the transmission and distribution tariffs or their methodology;
- b. to enforce the consumer protection provisions;
- c. to issue binding decisions on electricity undertakings;
- d. to impose effective, proportionate and dissuasive penalties” (European Commission: DG for Energy 2009, p. 9)

4. New methods for the market harmonization, common rules for the operation of the network system and the facilitation of the cross-border trade, such as the reduction of transaction costs, were introduced (European Commission: DG for Energy 2009, p. 10).

Despite the numerous benefits of a liberalized natural gas market and the fact that the Third Gas Directive came into force in March 2011, not all member states had fully implemented it yet. This significantly hinders the creation of an internal market and imposes obstacles for the market liberalization on an individual member state level. The EU legislation in the area of natural gas presented in this chapter will be used in chapter 4 to provide detailed analysis of the level of legislation implementation in the case of Bulgaria and will prove that the market has failed to achieve liberalization due to a number of structural, institutional, regulatory and infrastructural obstacles.

Chapter 3: The Natural Gas Market in Bulgaria

In order to understand the main reasons behind the slow liberalization of the natural gas market in Bulgaria and the failure of the policy-makers to meet the objectives set in the EU legislation, first a clear picture of the structure of the Bulgarian gas sector is needed. This chapter presents the general characteristics of the industry, by first looking at the market facts in terms of supply and demand fundamentals; it then continues with the discussion of the institutional structure and the major firms operating on the different market levels.

3.1. Market Facts

The energy intensity² of Bulgaria is relatively high compared to the average EU rate, which leads to low levels of energy efficiency of the economy as a whole. In 2009 the energy intensity was 842.53 toe/M€'00 or five times higher than the EU-27 average of 165.48 toe/M€'00 (Eurostat 2012).³ Even though that in the period 2000-2009 the intensity decreased by 3.7 percent/year (ABB 2011), the economy has still not significantly improved its levels of efficiency and currently it requires between 2 and 5 times more primary energy for the production of a GDP unit than the average rate of all EU countries (Overgaz Inc. 2012a). This high energy intensity proves problematic for a country, which has no major domestic energy production.

In terms of natural gas, the commodity accounts for approximately 16% of the total energy use in Bulgaria (UNECE 2012, p. 62). The domestic consumption of natural gas was 3,218 million m³/year in 2011, which is 14% higher than in 2010 and 26% higher than in 2009 (NSI 2012), showing a trend of gradual economic recovery. According to the Bulletin on the

² Unit of primary energy per unit of GDP

³ Energy intensity measurement: tons of oil equivalent

State and Development of the Energy in Republic of Bulgaria (MEET 2011a, p. 9), more than 54% of domestic consumption goes to industry, followed by 39% to the energy sector, 5% to the public sector and only 2% to households. The Bulletin also identifies that from the industrial sector the major share of consumption comes from the chemical manufacturing - 64%, glass and porcelain production - 12%, metallurgy – 10%, construction – 3% and others – 11%.

Due to its proven small domestic reserves, estimated at 14,030 million m³ (Melrose Resources 2012a) and the depletion of the major natural gas field ‘Galata’ on the Black Sea, Bulgaria currently covers only 2% of the domestic consumption or 74 million m³ in 2010 (MEET 2011a, p. 9). A report of the Center for the Study of Democracy (CSD 2010a, p.2) indicates that the attempts for the development of domestic sources of gas are not very successful, although there have been several small fields in production and some of them already depleted. The report also indicates that there are expectations for new developments in the continental shelf of the Black Sea, even though off-shore drilling has yet not begun and that up till now Bulgaria has not explored the possibility for deep water gas resources. There are, however, several ongoing projects for the use of depleted fields as underground gas storage and for the expansion of the only existing gas storage close to the town of Chiren (CSD 2010a, p. 2).

As a result of the lack of proven sufficient natural gas resources and the small domestic market of 2.5-3.5 billion m³ annually, Bulgaria is entirely depended on imports from the Russian Federation – the single supplier of gas for the country, covering 98% of the total domestic consumption (CSD 2010a, p. 2). In 2011 Bulgaria imported approximately 2,818 million m³ marking an increase of almost 3% compared to 2010 (NSI, 2012).

As it can be seen from the data presented, the natural gas sector in Bulgaria has negligible domestic reserves which leads to very high import dependence of the country. The major gas market institutions and the state have not yet managed to diversify the suppliers of natural gas; therefore, Bulgaria is still entirely reliant on the Russian Federation for its annual imports of the commodity. A study conducted by Ghaleb (2011, p. 41) has estimated that due to this high dependence, Bulgaria ranks as the second most vulnerable country in Europe after Lithuania to any supply shortages of Russian gas. During the gas conflict between Russia and Ukraine in January 2009,⁴ Bulgaria suffered 100% shortfall of natural gas for a period of 14 days and total losses for the economy estimated at EUR 250 million (2011, p. 42). Based on the information given by the Bulgarian government, Ghaleb also concludes that it is a matter of months for the whole Bulgarian economy to collapse once the Russian Federation ceases its supplies of natural gas to the country.

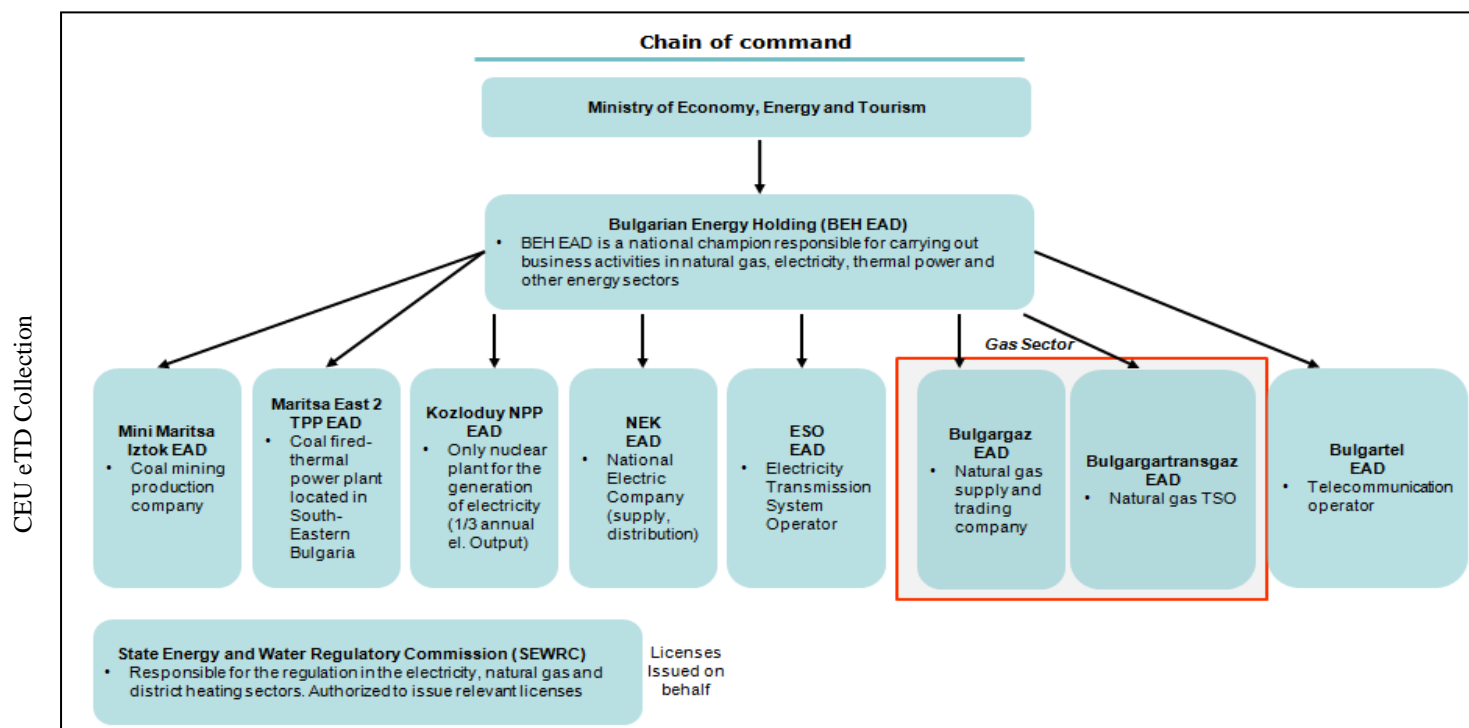
3.2 Institutional Structure of the Gas Market

There are two major institutions governing gas policy in Bulgaria: the Ministry of Economics, Energy and Transport (MEET) and the State Energy and Water Regulatory Commission (SEWRC) (MEET 2010, pp. 5-6). The MEET is a state body which gives suggestions to the Council of Ministers regarding the strategic direction and programs for the development of the gas sector and the Council of Ministers votes on them and decides on the overall gas policy of the country (2010, p. 5). The SEWRC is an independent special state body, responsible for the state regulation of the energy, water and sewage services. It monitors the gas market and executes price and license regulatory control in terms of the transmission, distribution and sales of natural gas (2010, p. 6).

⁴ On January 1st 2009 the Russian company 'Gazprom' cut off its gas supplies to Ukraine over problems with gas price and debt. The total crisis lasted for 20 days and was strongly felt by a number of Central and Eastern European countries since less gas was reaching their distribution systems (Torres *et al* 2009, p. 4).

Apart from the two state institutions, there is also a single energy company, Bulgarian Energy Holding (BEH) created in 2008 (BEH 2012). BEH is a single-stock company owned by the MEET. As a typical holding company, it does not have any operational functions but exercises the role of a VIU established for the sole purpose of controlling the rest of the companies in which it holds stakes. Its subsidiaries are enterprises in the area of generation, extraction, transit, storage, distribution, sale and/or purchase of natural gas, coal, electricity, as well as all other energy resources (see Graph 1 below), such as ‘Kozloduy’ NPP EAD, the ‘National Electric Company’ EAD (NEK), ‘Bulgargaz’ EAD, ‘Bulgartransgaz’ EAD, etc (MEET 2010, p. 6). This consolidation of the energy enterprises has created a national energy leader, the largest in the region, with assets of approximately EUR 5 billion, revenues of EUR 3 billion and 22 thousand employees throughout the country (BEH 2012). It is questionable; however, how effective the legal and operational unbundling is since both the public supplier and the TSO are part of the same VIU.

Graph 1: Bulgarian Energy Holding and its subsidiaries



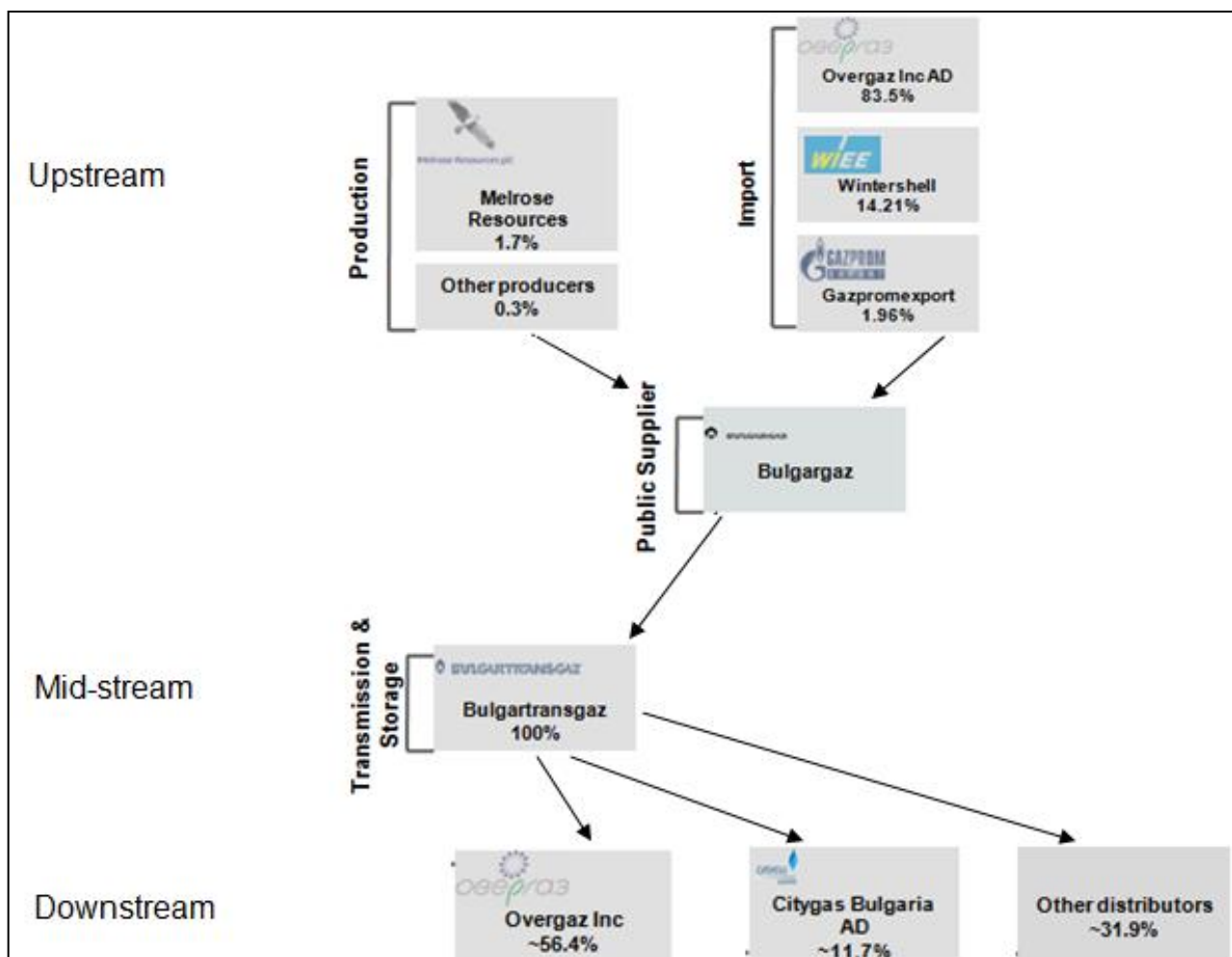
Source: Compilation of the author based on information of the Bulgarian Energy Holding (BEH 2012)

3.2.1 Upstream Market

The general structure of the natural gas market can be divided into three parts. The first one is the upstream market, which relates to the searching, extraction and production of natural gas. The main market players involved at this stage are the producer and the importer, which can include trading companies or state-owned enterprises. The second part is the mid-stream which includes processing, storing and transporting of natural gas and creates the necessary infrastructural link between the upstream and the downstream markets. The final part is the downstream or the retail market encompassing all end-providers of natural gas and final consumers. Graph 2 below depicts the precise division of market players on all levels of the gas industry in Bulgaria together with their respective market shares.

Graph 2: Bulgarian gas market structure

Source: Compiled by the author based on information from SEWRC (2011)



3.2.1.1. Domestic Production

There are only two companies which operate on the upstream exploration and production market in Bulgaria: the domestic public joint-stock company ‘Prouchvane i Dobivna Neft i Gaz’ AD (Exploration and Production of Oil and Gas JSC), mainly concentrated in the area of Northern Bulgaria and the Black Sea region, and the British ‘Melrose Resources.’ ‘Melrose Resources’ was the first and only foreign entrant into the Bulgarian upstream gas market in 1998 (IHS Global Insights 2010, p. 10). It was granted concession for a 100% stake in Block 91 of the ‘Galata’ field, which was brought into production in 2004 (Melrose Resources 2012b). Based on the Annual Report of the company (2012b), after the depletion of ‘Galata’ in 2009, ‘Melrose Resources’ concentrated its activity on two nearby fields: ‘Kavarna’ and ‘Kaliakra’ with a combined total proven and probable reserves of 1.7 billion m³ and an expected daily turnover for 2012 of 1.07 million m³.

3.2.1.2. Importing Firms

Natural gas is imported by the public supplier ‘Bulgargaz’ EAD which is wholly owned by the state enterprise BEH and is the only wholesale trader in the country (BANG 2012). It is holding monopoly rights for the transportation and distribution of gas to the end-providers and 386 directly connected consumers (CSD 2010a, pp. 2-3). CSD also identifies that the company imports gas from the subsidiaries of ‘Gazprom’ and several intermediaries (the Bulgarian ‘Overgaz Inc’, the German ‘Wintershall’ and the Russian ‘GazpromExport’). Based on decision P-046/29.11.2006 of SEWRC, ‘Bulgargaz’ EAD has the right to:

- “to conclude deals with gas production enterprises and gas traders for purchase of natural gas in volumes, needed for covering the demand of the customers, physically connected to the gas transmission grid, and for the quantities, contracted for carrying out the activity of public suppliers;

- to conclude gas sales deals with customers;
- to conclude deals for gas transmission services with TSO and DSO's;
- to conclude deals for gas storage services with Storage SO's (SSO's);
- to fulfill any additional activities related to the public supply of natural gas;
- the license-holder is obliged to provide customers with an uninterrupted and qualitative supply of natural gas;
- the license-holder is not entitled to decline conclusion of sales gas contract to the customer physically connected to the gas transmission grid or to a public supplier, in accordance with the legislation in force.” (Bulgargaz 2012a)

The import of natural gas is currently based on a long-term contract between ‘Bulgargaz’ EAD and ‘Gazprom’ valid until the end of 2012 (SEWRC 2011, p. 47). The price is calculated by ‘Bulgargaz’ EAD at the point of entrance in the transmission network of the country and is the weighted average of the value of the imported and domestically produced gas, the contract conditions for transport to the border and the exchange rate of the Bulgarian National Bank (2011, p. 13). Until recently the Bulgarian public supplier was leading negotiations with the Russian partner for reduction in the wholesale price and the introduction of a short-term contract for supply (Trud 2012). The Energy Minister, Delyan Dobrev announced in the middle of May that an 11% discount on the gas supplies from Russia has been negotiated (Novinite.com 2012). He also added that the new mid-term contract will be only for a period of seven years, entering into force in January 2013 and will be signed directly with GazpromExport without the help of intermediary traders.

3.2.2. Mid-stream Market

Bulgaria has a strategic geopolitical location on the crossroad of Europe and Asia which gives beneficial conditions for the delivery of gas not only from Russia, but also from

the Caspian and the Middle Eastern region. However, at present the country imports gas for domestic consumption only from the Russian Federation over a single pipeline route passing through Ukraine, Moldova and Romania, existing since the 1970s (IHS Global Insights 2010, p. 11). In addition to this, there are four international gas pipelines and 13 compressor stations connecting Bulgaria to the neighboring countries, Greece, Turkey and Macedonia, and used for the export of Russian natural gas (2010, p. 11). These pipelines, however, are still operating one-way, meaning that Bulgaria can only use them for the export of gas but the process cannot be reverted for domestic imports (CSD 2010a, p. 3). 'Bulgartransgaz' EAD is the owner and operator of the high-pressure pipeline system for the gas distribution to consumers, the transit transmission network and the underground storage 'Chiren' (Bulgartransgaz 2012).

The natural gas in Bulgaria is stored only in Chiren which was created on the place of a depleted field with the same name and is used to correct the seasonal irregularities of the domestic consumption, as well as to ensure the gas supply security (BANG 2012). Chiren's capacity is 1,350 million m³, 600 million m³ are consumed and the rest are used to keep the facility in operation (2012).

3.2.3. Downstream Market

The Bulgarian gas distribution system is relatively underdeveloped and industrial users remain the main consumers (IHS Global Insights 2010, p. 30). Close to 17% of the total gas consumption in the country is carried out by 37 distribution companies, operating in five distribution regions (the Danube, West, Thracia, Mizia, Dobrudzha), 66 municipalities out of those regions with a total number of the licensed municipalities equal to 157 (SEWRC 2011, p. 13). Based on a SEWRC report the two largest distributors according to market share are as follows:

1. 'Overgaz Inc' and its subsidiaries comprised 56.4% of the market in 2011 (2011, p. 39). The company is private and jointly owned by the Bulgarian 'Overgaz Holding' (50%), 'Gazprom' (0.49%) and 'GazpromExport' (49.51%) (Overgaz Inc. 2012b). In 2009 Overgaz held 27 out of 38 gas-distribution licenses awarded by the SEWRC but after the incorporation of several subsidiaries into one, the number was reduced to five out of 37 gas distribution companies (SEWRC 2012a). The company is also involved in the production, trading and marketing of gas, as well as investment in municipal supply infrastructure (IHS Global Insights 2010, p. 31).
2. The second largest private distributor in terms of market share is 'Citygas Bulgaria' (11.7%) (SEWRC 2011, p. 39).

Currently both industry consumers and households have the right to choose and switch between gas suppliers as of 2007 (MEET 2011b, p. 1). The prices for the final consumers, however, remain regulated and are calculated when to the wholesale gas price are added the taxes for domestic transmission and the price for the distribution and supply to the particular subgroup of consumers (SEWRC 2011, p. 13).

The retail gas market in Bulgaria is still at an early stage of development. The country seriously lags behind not only the average EU-27 but also some of its neighbors in terms of the development of its gas network and the household gasification. Based on the available statistical information there is a clear gap between Bulgaria and the rest of the EU which is represented in Table 1 below (CSD 2010b, pp. 82-83). The percentage of municipalities with gas supply is only 15% compared to more than 90% EU average (2010b, p. 82). The percentage of municipalities with licenses for the supply of gas or under the process of obtaining a license is 49.5% at an EU average of 90% (2010b, p. 83). The percentage of households which are gasified is less than 3% compared to 75% in Hungary, 66% in the

Czech Republic and 52% in Poland (MEET 2011b, p. 1). A priority of the current government according to the National Energy Strategy (MEET 2011c, p. 6) is the development and expansion of the gasification in the country. Its goal is that by 2020 approximately 30% of households would be connected to the gas network and part of the heating, which is realized mainly through electric energy, would be replaced by the use of natural gas (2011c, p. 6).

Table 1: Comparison of gasification indicators between Bulgaria and the EU-27

<i>Indicators of Gasification</i>	<i>Bulgaria</i>	<i>EU-27</i>	<i>Lagging Behind</i>
Municipalities with gas supply	~15%	Above 90%	6 times
Municipalities with licenses for the supply of gas or under the process of obtaining one	~50%	90%	2 times
Gasified households	Less than 3%	Above 50% (Hungary 75%; Poland 52%, the Czech Republic 66%)	20-30 times

Source: Compiled by the author based on information from the Center for the Study of Democracy (CSD 2010b)

Based on the data and information provided in this chapter, it can be concluded that the natural gas sector in Bulgaria is suffering from a number of problems relate to its market structure and to the institutional and infrastructural framework in which it operates. The lack of proven resources of the commodity, high natural gas dependence on imports and the inability and unwillingness to diversify the source of imports question the energy security of the country both in the short and long-run. The upstream market is highly monopolized by a single public supplier ('Bulgargaz' EAD) and a single transmission operator

(‘Bulgartransgaz’ EAD). The problems of this complete vertical integration reflect on the downstream market as well, where the competition between end-providers is significantly hindered and the majority of the market share is still held by ‘Overgaz Inc.’ Through its various subsidiaries, the company manages to exercise the roles of both an intermediary trader on the upstream market and a distributor on the downstream market. Moreover, the major institution (BEH) governing the companies operating in supply and transmission is still fully owned by the state, which puts the gas market in the sphere of political interests and at the same time dilutes the transparency of decision-making and the accountability of the policy-makers.

Chapter 4. Analysis and Findings

After introducing the general EU framework of legislation and the Bulgarian natural gas market in terms of its structure, institutions and regulation, this chapter offers a five-layer analysis of the gas sector in order to determine the major obstacles existing on an institutional, infrastructural and market level that prevent the proper liberalization of the industry in line with the EU Directives. In the first section I present the way and the degree of implementation of Directive 2003/55/EC and Directive 2009/73/EC in the national legislation. After that, by using the general framework of the Egenhofer and Gialoglou's 'subsidiary test' explained in the introduction, I adapt it to the natural gas sector and the specific case of Bulgaria to get the full picture for the degree of market liberalization. The deeper analysis of the high market concentration, the unsuccessful network regulation, the wholesale and retail market boundaries towards greater competition and the lack of provisions for TPA in the cross-border dimension allows for assessing the validity of the thesis' main argument. Since the test was developed in 2004, some of the requirements set in the newest Gas Directive are missing. Therefore, I have expanded it by adding several more criteria for the evaluation of the market liberalization: functional unbundling of the TSO, network tariff model, retail market consolidation and price regulation for end-users.

4.1. The Implementation of the Second and the Third Gas Directives in the National Legislation

The first step towards harmonization with the EU legislation on Internal Gas Market was made in 2006 when the National Energy Act of 2003 was modified in accordance to Directive 2003/55/EC (Bulgaria Trust and Invest 2006, p. 2). The article (Bulgaria Trust and Invest 2006) specifies in more details the exact harmonization, such as the fact that for the

first time in the Energy Act were introduced the concepts of a new market model and new market participants – public supplier, transmission system operator, distribution system operators, storage operator. The Energy Act (2003) also gave the legal grounds for the liberalization of the market and the conclusion of natural gas deals for supply, trade, transmission and storage. The principle of equality and non-discriminatory access to the transmission and distribution systems were also incorporated in the legal framework. A series of secondary legislation gave the provisions for additional regulation, including the rules for price formation, granting of licenses, gas trading and access to gas transmission and gas distribution systems (Bulgaria Trust and Invest 2006). Based on these legal changes Bulgaria became a member of the EU in 2007 with a fully liberalized gas market on theory and the right of the consumers to freely choose their natural gas supplier as of January 2007 for non-households and July 2007 for households (EBRD 2010, p. 22).

Directive 2009/73/EC which was adopted in July 2009 by the EU-27 as part of the TEP should have been transposed into the national legislation of the member states by March 3rd 2011 (European Commission: DG for Energy 2009, p. 12). However, until the end of February 2012, Bulgaria together with seven other member states⁵ has failed to inform the European Commission on the particular measures it had taken for the transposition of the Gas Directive into the national legislation (European Commission 2012c). According to a Commission press release, the country had two months to respond, and if it failed to do so, the Commission had the right to refer Bulgaria to the Court of Justice of the European Union. Currently, the Bulgarian Parliament is revising the amendments to the Energy Act required to ensure proper implementation of the new European legislation (Dimitrov 2012). A draft of the Energy Act was also submitted to the European Commission at the end of January 2012,

⁵ Cyprus, Spain, Luxembourg, Netherlands, Romania, Slovakia and Estonia

which was recently returned with a ‘devastating critique’ by the Directorate General (DG) ‘Energy’ on its apparent flaws to meet the requirements of the Gas Directive (Energy Ecology Economy 2012). Since no further information on the issue has been provided by the MEET, the thesis considers that Directive 2009/73/EC has not been yet transposed into the national legislation, therefore, this lack of implementation will be the major focus of the analysis below.

In a study on the government role in shaping and regulating the natural gas sector in Bulgaria until 2010, Nenova (2010, p. 49) concludes that the gas market suffers from a number of inefficiencies which are a direct result of the government failure to address the major market failures of the sector in the pre-liberalization phase. According to her, due to

- the heavy monopolization of the transit, transmission and supply of gas,
- the strong market concentration of a few private distribution companies operating on the retail market,
- and the entire dependence on one gas supplier through a single pipeline route,

the whole liberalization of the gas sector is moving slowly (Nenova 2010, p. 49).

In contrast to the previous study on the topic of natural gas in Bulgaria, my thesis looks at the current developments in the gas sector and concentrates on the *de facto* assessment of the level of market liberalization. It clarifies that even though, the European legislation has been adopted on theory by the Bulgarian Parliament, the newest Gas Directive has still not been implemented into the national legislation and as a result of this a lot of questions could be raised for the degree and transparency of the liberalization process in the country. In this context, the following part of the thesis will prove that despite the fact that *de jure* the gas market in Bulgaria is 100% liberalized, *de facto* there are still a number of obstacles which hinder the competition of supplier, transmitter and distributors, the freedom

of choice of the consumers and undermine the goals of the EU for the creation of Internal Gas Market.

4.2. Concentration of Market Power

The gas sector in Bulgaria has always been based on the existence of monopolies operating in supply and import and natural monopolies in transmission and storage. The partial market liberalization did not improve the conditions in the country but simply made even more apparent the high degree of concentration, because despite the legal grounds allowing new entrants on the market, still a number of technical barriers block their emergence. As a result, there are a number of significant risks hidden where consolidation is allowed to happen prior to the development of appropriate competition conditions. As Egenhofer and Gialoglou (2004, p. 24) argue, the existence of market concentration will prevent the entrance of new market players, curtail liquidity and hinder price disclosure. Morris (1988, p. 1) adds to this topic that market concentration will also lead to less competition and higher profits for the companies because of the higher prices charged for natural gas. He proves how these prices will also progressively increase with fewer and fewer companies operating, therefore, the author argues that there is a need for the regulation of the market consolidation in order to ensure fair prices to the final consumers.

Market power is addressed in the context of the EU competition policy which has been harmonized with the legislation of the individual member states. However, Egenhofer and Gialoglou (2004, p. 26) point out that in the gas sector some member states are tempted to create ‘national champions’ in order to tackle the increasing concentration of non-EU gas production and imports.

In the particular case of Bulgaria, such ‘national champion’ can be found in the form of BEH which has consolidated under the ownership of the state not only the supply and

transmission of natural gas through its subsidiaries ‘Bulgargaz’ EAD and ‘Bulgartransgaz’ EAD, but also the electricity generation, supply and distribution. The Bulgarian Commission on Protection of Competition (CPC) entitled to observe the fulfillment of EU competition policy has cleared the creation of BEH as a “non-concentration of business activity” but rather as an internal restructuring of state enterprises (CPC 2008). It has been concluded by CPC that the enterprises within the holding will be able to preserve their independence, since BEH will not engage in production or trading activities and will not interfere in the subsidiaries’ market behavior, operational and financial activities. This conclusion can, however, be subject to dispute because the vertical integration between BEH’s subsidiaries is quite apparent as it will become clear later in the chapter.

‘Bulgargaz’ EAD still remains the only public supplier and wholesale trader with a dominant position⁶ of 97.9% of the total natural gas supply in Bulgaria (SEWRC 2011, p. 33). Despite this fact CPC has concluded only once that ‘Bulgargaz’ EAD abused its dominant position. This happened in 2006 before the accession of Bulgaria to the EU and the *de jure* liberalization of the gas market (CPC 2006). There is no evidence for any competition investigation against ‘Bulgargaz’ EAD in the past five years. Nevertheless, the European Commission’s concerns related to the existence of a regulated public provider with a history of monopoly, which might hinder the liberalization of the gas market, remain pending. Questions such as the way the public provider will be chosen in the future or the possibility for the introduction of any alternative model of supply, such as power exchange or similar market platform have been recently raised by the DG ‘Energy’ (Energy Ecology Economy 2012), but are left unanswered by the Bulgarian government.

⁶ “A firm is in a dominant position if it has the ability to behave independently of its competitors, customers, suppliers and, ultimately, the final consumer. A dominant firm holding such market power would have the ability to set prices above the competitive level to sell products of an inferior quality or to reduce its rate of innovation below the level that would exist in a competitive market.” (Concurrences 2012)

Thus, the natural gas market is characterized by heavy concentration of one public supplier part of a VIU. In addition, even though the Bulgarian Competition Authority concluded that BEH does not hold a dominant position on the market, there are still serious concerns that can be raised regarding the degree of institutional independence, transparency of the decision-making and situations for potential abuse of dominant position typical for BEH's subsidiaries. The following sections elaborate more on the listed problems.

4.3. Network regulation

According to Egenhofer and Gialoglou (2004, p. 27) the network costs for natural gas are very important and are sensitive to scale and distance. In this context, the authors stress on the importance of network regulation of the transmission in order to ensure proper development of competition and “to reduce the costs of energy or to increase the public support if cost savings are passed to the final consumer” (p. 28). Regarding the grid access, they comment that the amending legislation of the Gas Directive is there to give provisions for the legal unbundling of the TSO and DSOs and the establishment of a national regulator in each member state. In this way, the EU hopes to address all problems in terms of network access that still exist in several member states, including Bulgaria.

4.3.1. Unbundling of the TSO

Under the provision of the TEP Bulgaria had the right to choose from three effective ways for legal unbundling: Ownership Unbundling, Independent System Operator and Independent Transmission Operator, also known as ‘third-way approach’ (see Chapter 2). In Tsekova and Rangelova’s article on *‘The Impact of the EU Third Energy Package on Bulgarian Legislation’* (2010, p. 1), Bulgaria has been identified as one of the eight EU

member states⁷ which chose the last approach in order to avoid OU and ISO. Currently, as mentioned in the previous chapter, the main activities for production, supply and transmission of natural gas belong to BEH. However, in order to fulfill the requirements of the new EU Gas Directive, Bulgaria should ensure the legal and functional unbundling within the TSO ‘Bulgartransgaz’ EAD so as to separate the transmission system from its gas storage system as defined by Directive 2009/73/EC Article 15(1). ‘Bulgartransgaz’ EAD can remain part of the VIU, but there is a need for additional regulatory conditions to be introduced in order to ensure the independence of the TSO from BEH (Tsekova and Rangelova 2010, p. 2). The authors point out that this independence is related both to its legal form and to the terms of separate organization and decision-making away from activities not related to distribution and transmission. These regulatory conditions should also be aligned with amendments in the Energy Act of the country and additional regulations on the price formation and network access. The ITO model chosen by Bulgaria, however, remains the weakest model where the results are not entirely clear and can be often subject to bad governance practices.

The DG ‘Energy’ concluded in February 2012 that the draft of the Energy Act amendments does not entirely address the problems of TSO unbundling and has significant inconsistency with the EU legislation (Energy Ecology Economy 2012). The most apparent flaws are that Article 17 (2) (c) and (d) of the Gas Directive 2009/73/EC has not been at all transposed in the Energy Act and that Article 18 (2) has been only partially transposed:

“17 (2) (c) granting and managing third-party access on a non-discriminatory basis between system users or classes of system users;”

“17 (2) (d) the collection of all the transmission system related charges including access charges, balancing charges for ancillary services such as gas treatment, purchasing of services (balancing costs, energy for losses);”

⁷ Austria, France, Germany, Greece, Italy, Hungary, Luxembourg

“18 (2) The transmission system operator shall at all times act so as to ensure it has the resources it needs in order to carry out the activity of transmission properly and efficiently and develop and maintain an efficient, secure and economic transmission system.”

This striking inconsistency with such general requirements of the TEP leaves the impression that the Bulgarian government is trying to circumvent the EU legislation, hoping that this will stay unnoticed by the European Commission. Up to this point, it has been mentioned on several occasions that the natural gas market in the country is legally liberalized. However, the attempt to purposely omit important clauses strengthening the introduction of competition on the market and principles of good governance of the transmission system, would have allowed for controversial interpretation of the law. The main beneficiary of this would have been the state monopoly in transmission, which would have used the right to impose preferential treatment and subjectively decide on network investment.

During a discussion forum ‘Transparent Energy’ organized by MEET in September 2011, the Executive Director of ‘Bulgartransgaz’ EAD Kiril Temelkov stated that formally the gas market in the country is liberalized but in reality liberalization does not exist (Information Bulletin No. 1 2011, p. 26). In his opinion full market opening will occur only when real conditions for competition between the gas traders and real conditions for gas to gas competition⁸ are created. Currently ‘Bulgartransgaz’ EAD holds the monopoly rights over the transmission system, which according to the Executive Director is inevitable considering the existence of only one external gas supplier – Russia and only one entrance point - Romania. According to Temelkov, the TSO is working for the effective construction of interconnectors with the neighboring countries and expects that once this happens the market will move faster towards liberalization.

⁸ Diversification of gas suppliers over a number of transit routes

In light of the arguments discussed in this section, it can be concluded that the TSO is far from being completely unbundled both in terms of legal and organizational aspects. This significantly hinders the liberalization of the gas market and creates conditions for misuse of market power.

4.3.2. Further Problems with the TSO Unbundling

A number of other concerns can also be raised regarding the level of TSO unbundling. There is always a threat that it might remain informally dependent on the parent company regardless of the existence of independent decision-making and separate book-keeping and accounting procedures (Nowak 2009, p. 150). According to Nowak three types of problems arise when the TSO remains part of a VIU:

1. Often supply enterprises have the incentive to treat better their affiliated companies than competing third parties.
2. There is no effective way to ensure that the TSO does not reveal non-discriminatory sensitive information to the rest of the VIU such as the supply branch.
3. The investment incentives in a VIU are distorted since the supply companies do not have the reason to invest and develop the gas operating system for the public good of third parties (Nowak 2009, p. 150).

In the case of ‘Bulgartransgaz’ EAD and ‘Bulgargaz’ EAD there is even a higher risk for the occurrence of the above problems, especially because both of the companies are still sharing the same physical premise and IT system with BEH, they are part of one single shareholder – the state and even their trademarks are identical, which can potentially create consumer confusion. All of these are in direct breach of Directive 2009/73/EC, showing further the lack of effective functional unbundling of the TSO in Bulgaria.

It also seems that there is unwillingness for the separation of ownership over the transmission system and granting non-discriminatory access to third parties. As already discussed, there is a natural monopoly operating in transmission and whoever has the right over it, can use it against the rest of the market entrants. The most appropriate solution will be to have full OU with a national regulator granting the right for access to the transmission system (Information Bulletin No.1 2011, p. 7). However, due to the existence of VIU which has significant shares both in the upstream and mid-stream markets, a compromise solution was reached: the pursue of the ITO as the easiest unbundling model. In light of this, there are serious concerns related to the opportunity of third parties to gain access to the transmission and storage system of 'Bulgartransgaz' EAD. In 2010 'Bulgargaz' EAD was the only gas trader to use the storage. There has been a formal enquiry by a big domestic consumer, which was not granted an answer from the TSO (Information Bulletin No. 1 2011, p. 11). It is clear that this incident in practice undermines even more the efforts for market liberalization.

In 2011 the largest distributor of gas 'Overgaz Inc' submitted a complaint to the European Commission against 'Bulgartransgaz' EAD for receiving a refusal to access the transmission system of the monopoly (Energy Ecology Economy 2011). In relation to this specific case and based on its own reports, the Commission had initiated a legal procedure against Bulgaria for failing to implement the gas market liberalization legislation⁹. An article on this issue published in 'Energy Ecology Economy' (2011) lists the main concerns of the infringement procedure as follows:

- The TSO does not offer firm and interruptible access to third parties.
- The TSO does not entirely respect the transparency requirements of the Regulation.
- Balancing rules and imbalance charges are not in line with the requirements.

⁹ Other recent cases decided by the European Commission on abuse of dominance in the natural gas sector are:
Case No COMP/39.15 ENI
Case No Comp/39.40 E.ON/GDF

- No interruptible reverse flow capacity (backhaul) is offered at all interconnection points. As a result of this can be conclude that the Bulgarian consumers do not benefit from an Internal Gas Market since they cannot connect directly to either the Romanian or the Greek gas providers (Energy Ecology Economy 2011).

The above-mentioned problems indicate serious gaps in the implementation of the EU legislation in the country. Until they are addressed and the TSO unbundling process successfully completed, the Bulgarian natural gas market cannot proceed towards liberalization and greater competition.

4.3.3. Unbundling of the DSOs

With the liberalization of the EU Internal Gas Market and as of July 2007 all DSOs have to be legally unbundled. However, member states have the right to exempt from this requirement all those DSOs which have less than 100,000 customers (European Parliament 2010, p. 42). Since only 16.76% of the total natural gas is supplied by DSOs in Bulgaria, their market remains quite small and divided between industrial consumers (8.4% or 5,234 consumers) and households (91.6% or 57,041) (SEWRC 2011, p. 36). None of the DSOs, even ‘Overgaz Inc.’ which has the highest market share, qualifies for unbundling and therefore, has been exempted from it.

Therefore, as a result of the slow gasification process, it seems that in the near future Bulgaria will not face the need to undergo DSO unbundling. In this case the best thing to do is to direct the resources towards the successful TSO unbundling, because the upstream problems are highly likely to complicate and worsen the situation on the retail market which will influence directly the consumers.

4.3.4. National Regulatory Authority

The SEWRC has been created in 1999 with a decision of the Council of Ministers (SEWRC 2012b) and since 2003 has been designated by the Bulgarian government to exercise the powers of NRA according to Directive 2003/55/EC and later Directive 2009/73/EC. By comparing the requirements of Gas Directive 2009 with the existing practices at SEWRC and the national legislation, a number of incompatibilities and problems could be discovered.

The first problem is directly related to Article 39(4) of the Gas Directive which provides for the following: “member states shall guarantee the independence of the regulatory authority and shall ensure that it exercises its powers impartially and transparently.” In addition to this, Article 39(4) (a) adds that: “the regulatory authority is legally distinct and functionally independent from any other public or private entity.” When looking at the Bulgarian national legislation provided by the Energy Act of 2003, we can see that Article 10 also guarantees for the independence of this specialized state body, but Article 11(2) states that: “The Chairman, the Deputy Chairman and the members of the Commission are appointed and discharged with a resolution of the Council of Ministers and are appointed with an order of the Prime Minister.”

The contradiction regarding the independence of SEWRC goes even further in the draft of the Energy Act amendments that have been submitted to the European Commission at the beginning of 2012. According to Article 11(2) of the amended Energy Act: “The election of the chairperson and the members of the SEWRC is by a decision of the Council of Ministers and appointed by the Prime Minister” (Energy Ecology Economy 2012). This creates preconditions for political dependence and non-transparent nomination procedure. Going further Article 16(2) requires that the organizational rules of SEWRC should be

adopted by the Council of Ministers and Article 28(2) and 36(3) state that the tariffs charged for the different activities, which are the main source of income for the Commission, and the price regulation will be also set and adopted by the Council of Ministers. Furthermore, the guidelines related to the accountability of SEWRC are entirely missing from the Energy Act (Energy Ecology Economy 2012). All of these threaten not only the political independence of the NRA¹⁰ but also its financial independence. They also question the effort of the Bulgarian government to complete the liberalization of the gas market in the country, because without ensuring proper independent and transparent regulation of the sector, it will continued to be dominated by the anti-competitive interests of the state monopolies.

4.4. Wholesale market

The harmonized wholesale gas market was never seen as an objective part of the Gas directives. Egenhofer and Gialoglou (2004, p. 27) argue that the trading was believed to develop as separate activity on its own once the regulatory framework for the production, transmission and supply of gas is implemented. The EU directives, therefore according to the authors, provided for the prerequisites for the creation of a wholesale market, such as the liberalization of production, non-discriminatory TPA, and freedom of the consumers to choose their gas supplier.

A number of initiatives, however, can significantly improve the efficiency of the wholesale market during the process of liberalization. The first such initiative, the authors argue, is the creation of adequate markets for the gas trade, such as spot markets, gas hubs,

¹⁰ As part of its Market Competitive Index survey (2009), Datamonitor (world-leading provider of premium global business information) has examined the activities of the NRAs in all EU member states and has allocated a score between 0 (being the worst) and 10 (being the best) in terms of their political independence and effectiveness. Based on the survey the Bulgarian SEWRC ranks 15th among the EU-27 with a total score of 5.

OTCs. The existence of preconditions for storage access and suitable tariff system are listed as second requirement for an efficient wholesale market (2004, p.28).

4.4.1. Wholesale Market Structure

Apart from the small domestic production, the rest of the natural gas in Bulgaria is imported from Russia by three external traders. In 2010 out of the 2,480 million m³ gas, 83% were imported by 'Overgaz Inc,' 15% by Wintershall and 2% by 'GazpromExport.' (Bulgargaz 2012b). The public provision of natural gas is performed by 'Bulgargaz' EAD which has been licensed for this purpose by SEWRC (SEWRC 2011, p. 37). The market is still dominated by long-term contracts between the Bulgarian state on one hand and Gazprom on the other hand. The rationale behind long-term contracts is the additional security of supply that they grant (European Parliament 2010, p. 35). Having in mind the high energy intensity of Bulgaria, the country officials are reluctant to rely on short-term contracts and consequently short-term sourcing of natural gas commodity (European Parliament 2010, p. 35). Based on the existing contracts of the public supplier with Gazprom, the entry price is recalculated every quarter, which is immediately reflected in the final prices across the whole network (SEWRC 2011, p. 33). The natural gas prices for both transmission and distribution in the period January 2011-April 2012 have increased by 37% (Bulgargaz 2012c). This is considered a significant price increase, especially for a country where the majority of the industrial enterprises are highly dependent on the supply of gas. The result for the economy can be negative since the price increase will force many companies to work at a loss just to remain competitive on the market which will lead to slow recovery from the crisis.

The lack of natural gas diversification of suppliers and the reliance on long-term contracts have led to stagnation in the wholesale market development in Bulgaria. The National Energy Strategy (MEET 2011c, p. 6) outlines the possibility for the creation of an

electricity exchange in the next few years but there are no prospects for changes in the existing gas trade model towards the creation of gas exchange working with spot prices or futures. Even though the amount of gas traded in an exchange is a small fraction, it can play an important role in improving the framework of the wholesale market in a country (Egenhofer and Gialoglou 2004, p. 18). It gives good indications about the price fluctuation which improve the market transparency, the confidence of the market players and can significantly reduce the systematic risk (2004, p. 18). The non-existence of such gas exchanges in Bulgaria can be attributed to the general notion that price regulation might be needed to provide welfare protection but without an exchange the decision for any price recalculation is left entirely to the bilateral agreements of 'Bulgargaz' EAD and Gazprom, which might not always reflect the real market conditions.

4.4.2. Network Tariffs

The provisions of the Gas Directive require the network tariffs to be set in such a way as to allow for non-discriminatory and efficient access to the transmission system (UNECE 2012, p. 43). Therefore, according to the UNECE report, the most adequate network tariff model offered by the European Commission is the 'entry-exit,' because the price of capacity for entry and exit is one and the same for all users at the particular entry and exit points. Thus, we can see that this method of tariff calculation secures further the application of the principle for non-discriminatory access.

However, the network tariff model applied by the transmission company 'Bulgartransgaz' EAD is 'postage stamp' and the capacity booking is on the principle 'first-come-first-served' (SEWRC 2011, pp. 29-30). This tariff model means that a fixed priced is charged for the units of gas transported over the pipeline at the entry point regardless of the distance travelled or the physical capacity of the transmission system (Van Roy *et al* 2009, p.

2). As a result of this the consumers close to the entrance point are often penalized in comparison to the long-distant customers, because the model does not reflect the incidence of fixed costs and transportation costs (David and Percebois 2004, p. 129). The cost reflectivity of the ‘postage stamp’ model has been highly disputed by the Council of the European Energy Regulators (2002, p. 5) and has often been rejected because it gives serious concerns for the possibility of market distortions. One such example of market distortion is provided by a report of The Brattle Group (2000, p. 4). It identifies that ‘postage stamp’ model might lead to rate ‘pancaking’, meaning that in order to deliver natural gas to a remote consumer, the gas will have to pass through the system of multiple operators, each of them charging access fees.

Another problem coming from the tariff model is the possibility of congestion over the pipeline when the TSO has overbooked the flow capacity (SEWRC 2011, p. 30). In this case we can conclude that the ‘first-come-first-served’ principle applied by ‘Bulgartransgaz’ EAD is a good method to prevent disputes or the exertion of market power by some of the clients. Nevertheless, a reconsideration of the existing network tariff model based on cost reflectivity is required by the Bulgarian NRA in order to secure non-discriminatory and efficient access to the transmission system.

As it can be clearly seen from the discussion in this section, the wholesale market in Bulgaria is characterized by complete monopolization of the public supplies by ‘Bulgargaz’ EAD not only to the end-providers but also to large industrial consumers. In addition to this, two of the trading companies responsible for the import of natural gas from the Russian Federation (‘Overgaz Inc.’ and ‘GazpromExport’) are under the majority ownership of Gazprom. This raises serious questions towards the transparency of the market prices of that their contracts offer.

The wholesale market structure seems to be at an early stage of development, which significantly hinders its liberalization. One important obstacle is that the network tariff model implemented fails to account for the actual costs of gas supply. It creates price discriminatory conditions to the different groups of consumers, depending on their distance from the entrance point and also creates possibilities for multiplication of the transmission charges. Second, the lack of gas exchange prevents from the emergence of regional gas markets which will inevitably attract more producers and thus, diversify the gas supplies and contribute towards further liberalization. A set of recommendations to address these two major problems of the wholesale market will be provided in the final part of the thesis. Their timely implementation is a necessary step to ensure that the problems listed above are successfully solved. This will prevent from negative influence on the retail market which might hinder even further the overall liberalization process.

4.5. The Retail Market: Empowering the End-consumers

The major goal of the end-consumers in a liberalized energy market is to enjoy non-distorted supply of energy commodities and the ability to choose between providers (Egenhofer and Gialoglou 2004, p. 22). Therefore, a priority of the EU legislation is the development of a well-functioning retail market that will benefit all consumers. According to Egenhofer and Gialoglou (2004, p. 22) the different consumer groups will require different type of services (households vs. non-households) from the retail market and their choice will depend on the existence of wholesale and supply competition. In the authors' opinion, this is also influenced by two other critical factors.

1. Any distortions in other parts of the market, such as problems with the effectiveness of the unbundling, rules and prices for accessing the transmission system, and the lack of

possibility to switch between providers, will have a negative effect on the consumers' freedom of choice.

2. The transparency of the information which is delivered to the end-customers on the alternative supply is crucial. Any lack or delay in this information will undermine the ability of consumers to choose freely (Egenhofer and Gialoglou 2004, p. 22).

Table 2 below is based on a model developed by the European Commission (2011: '2009-2010 Report on Progress in Creating the Internal Gas and Electricity Market') which I have modified so as to fit the particular case of Bulgaria. The data used is for 2010 and come from the NRA's report (SEWRC 2011). It includes several important determinants necessary to measure the level of liberalization on the retail market. They are as follows:

1. The number of companies operating on the retail market and their total market share
2. The existence of price regulation to both households and non-household consumers.
3. The availability of switching to other end-suppliers.

Table 2: Competitiveness indicators of the retail gas market in Bulgaria

CEU eTGD Collection Gas Market Opening (% of eligible consumption)	Available Gas Switching Rate				End-user price regulation				Number of companies with more than 5% share in the whole retail market	Share of 5 biggest companies on the retail market
	Whole retail market	Large Industry	Medium Industry	Small Industry and Households	Existence of price controls		Number of consumers supplied under end-user prices			
	In %				Households	Non households	Households	Non households		
100	0	0	0	0	Yes	Yes	57,041	5,234	5	68.08

Source: Data coming from State Energy and Water Regulatory Commission (SEWRC) (2011) *Annual Report to the European Commission*

Based on those determinants, in the analysis below I have indicated four major obstacles that prevent the proper liberalization of the natural gas market.

The **first** obstacle is the high retail market concentration which creates conditions for the existence of monopolies in the majority of municipalities. As explained in Chapter 3, only 17% of total natural gas consumption is realized by the 37 DSOs functioning in five regions. The five largest distributors to the end-consumers are: ‘Overgaz East’ EAD-18.7%; ‘Overgaz North’ EAD-16.58%; ‘Sofiagaz’ EAD-14.58%; ‘Citygas Bulgaria’ AD-11.66% and ‘Overgaz West’ AD-6.56% (SEWRC 2011, pp. 39-40). Based on this data, it can be concluded that the biggest percentage of the market share (56.4%) is controlled by ‘Overgaz Inc.’ and its subsidiaries throughout the country.¹¹

The **second** significant obstacle for the liberalization of the gas market in Bulgaria is the existence of price regulation for all end-users. Currently the license for a public supplier is held by ‘Bulgargaz’ EAD which is selling its natural gas under regulated prices approved by SEWRC (UNECE 2012, p. 63). It becomes clear from the UNECE report that the end suppliers are obliged to resell this gas at the same regulated prices to a number of ‘protected consumers’ (households and small commercial consumers). According to UNECE, in theory the rest of the end-users have to purchase the gas from the DSOs or ‘Bulgargaz’ EAD based on market-determined prices. In practice, however, this does not happen. ‘Bulgargaz’ EAD continues to sell its supplies under the state-regulated prices to all of its consumers, which are not part of the ‘protected’ group and are in reality large industrial enterprises (2012, p. 63).

¹¹ On a number of occasions the management board of the company has complained that the gas market is liberalized only *de jure* but in reality the distributor cannot reach the end-consumers. The Vice Executive Director of ‘Overgaz Inc.’ Svetoslav Ivanov, used the discussion forum ‘Transparent Energy’ in September 2011 to explain that in 2011 and 2012 his company has the capacity and ability to supply 1 billion m³ to the consumers but does not realize this opportunity due to the lack of access to both the transmission systems in Bulgaria and in Romania (Information Bulletin No. 1 2012, p. 24). This is at the detriment of the final consumer who cannot fully avail of the services offered to him and is forced to use other energy commodities at a higher cost, such as electricity or with a higher environmental damage, such as coal.

Moreover, the report indicates that ‘Bulgargaz’ EAD applies the same regulated prices to the entire quantity that it sells to the distribution companies, meaning that the end suppliers are actually reselling the gas under regulated prices not only to residential consumers but to medium and large industries which are connected to the distribution network.

Thus, ‘Bulgargaz’ EAD remains the only owner of the entire gas quantity and continues to supply it under price ceiling imposed by SEWRC. This price is, therefore, significantly lower than the weighted average price because it does not fully reflect the supply and demand conditions. As a result of this the market entry for new gas traders is hindered, because their supplies will be offered at market-based prices which by all means will be much higher and non-competitive compared to the ones offered by ‘Bulgargaz’ EAD.

An important feature to measure the level of market liberalization is the percentage of end-users which have switched to other gas providers throughout the year. As can be seen from Table 2 above in Bulgaria this percentage is still zero for all of the end-consumers regardless of whether they are industrial enterprises or households, which indicates the **third** major obstacle for liberalization. The right to switch the gas providers has been granted to all Bulgarian consumers as of July 1st 2007 after the accession of the country to the EU and the theoretical liberalization of the gas market. However, the possibility to use this right is limited due to lack of competition on the wholesale market or technical obstacles on the retail market:

1. There is only one national public supplier ‘Bulgargaz’ EAD which controls the majority of the gas traded in the country.
2. The gas distribution companies are operating locally which results in the creation of small monopolies over a given territory.

Those gas distributors hold licenses giving them the right to operate only within a particular geographic region. As a result of this, the end-users cannot in practice switch to

another provider bordering their municipality due to the fact that this provider most probably does not hold a license to operate in the neighboring district.

Additional factor that complicates even further the possibility of the end-consumers to change providers is the effect of rate ‘pancaking’ explained in the previous section. Since SEWRC is charging each DSO a regulated price for using the national transmission network, if an end-user decides to change the DSO, he will have to pay an extra fee for the transmission of each 1,000 m³ to the distributor holding rights over the network through which the gas is passing (SEWRC 2011, p. 40). This fee, however, is not insignificant and based on SEWRC’s data can go up to EUR 340/1000m³ or EUR 10/GJ without VAT for a household, which is high enough to convince the consumer that it is not worth to attempt changing the end supplier.

The **fourth** important obstacle for the empowerment of the Bulgarian end-consumers and improving the level of market liberalization is the insufficient information offered to them. On the official homepage of the NRA, information for the rights of the individual consumers is practically missing. In addition to this, the quality of the service provided and the work with consumer claims is dissatisfactory. The amount of annual complaints received by SEWRC in 2010 is negligible which can be explained by the fact that consumers are not well-informed about their rights and obligations in order to be competent to send complaints. Only every eight out of 1000 end-users has submitted a claim against his gas provider (SEWRC 2011, p. 40). The typical reasons for such claims, based on the information provided by the NRA, were the price, the incorrect meter reading, and the problems with the connection of new clients in a given region.

The time for revising a given consumer complaint and responding to it takes approximately 30 days (SEWRC 2011, pp. 45-46). This goes up if the consumer has sent a

request to be connected to the gas provider in his municipality. In such cases the request is revised within 20 days and the actual connection takes approximately 60 days, according to the data provided by SEWRC.

Here it can be concluded that the major obstacles existing on the downstream market further complicate the problematic gas sector in Bulgaria and hinder its successful liberalization. First, the share of the market controlled by the five biggest companies is significantly high and if we treat the subsidiaries of ‘Overgaz Inc.’ as one single company than this market share can easily exceed 80%, which already indicates almost complete market dominance. Second, the existence of price regulation serves as a disincentive to potential new entrants and leaves the incumbents without any competitive pressure. Third, despite the existing legal provisions giving rights to consumers to switch their end-suppliers, the lack of proper infrastructure and the high cost of switching *de facto* prevent them from pursuing such changes. Last, but not least the general rights of the end-users in the liberalizing gas market are not clearly explained and defended by the NRA, which bears the major responsibility for this. The time necessary to address the complaints and problems of the consumers is unnecessary prolonged. As a result the NRA cannot offer timely and effective problem resolution, resulting in further customer dissatisfaction or even customer disinterest in pursuing their rights.

4.6. Cross-border Dimension: the Cross-border Trade and Third Party Access

The establishment of a common cross-border trade regime for natural gas has been in the core of the EU legislation for the creation of an Internal Gas Market (Egenhofer and Gialoglou 2004, p. 29). Egenhofer and Gialoglou argue that this regime is essential for the introduction of competition in the national market which is dominated by incumbents, because usually the incumbents in one country have the potential to become the new entrants

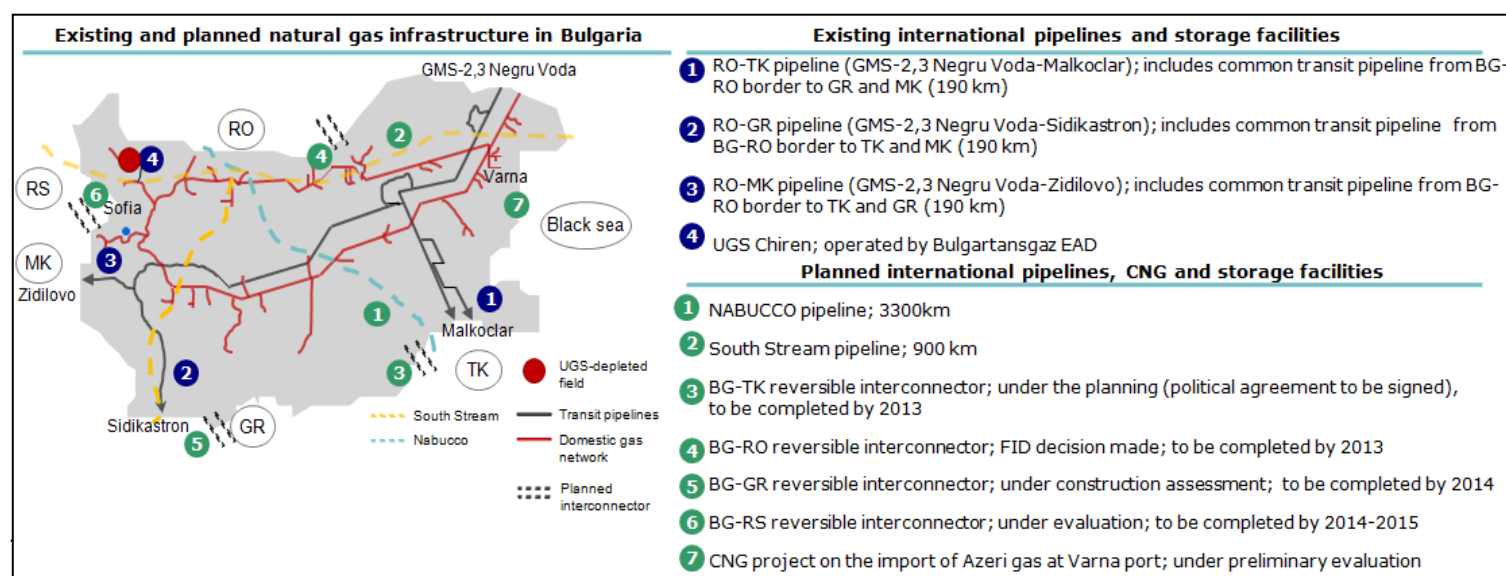
in the neighboring one. The cross-border trade is also important in the author's opinion since it improves the efficiency gains for the entire Union and provides security of supplies through increased flexibility and exchange between member states. In order to achieve this, there is a need for the development of the necessary infrastructure such as interconnectors between the countries. This can be a significant problem, especially to some of the new member states from Central and Eastern Europe that lack financial resources and/or foreign investments for the proper establishment of the infrastructure. In addition to this, the cross-border interconnectors have the characteristics of public goods with positive externalities (Egenhofer and Gialoglou 2004, p. 30). Therefore, it is highly likely that this might act as a disincentive for the incumbent market players to invest in developing costly infrastructure which will benefit competing third parties entering the market in the future.

An investigation of the Bulgarian case regarding the TPA to cross-border transmission pipelines shows that there are legislative provisions allowing for it in the national jurisdiction, but in practice it cannot be realized because the cross-border transmission system is already fully booked under the existing long-term contracts of 'Bulgartransgaz' EAD (ECRB 2011, p. 6). Another obstacle for granting access is the technical limitation of the existing infrastructure. As explained in Chapter 3 currently Bulgaria has pipeline system connecting it to all of its neighbors, but the gas flow cannot be reverted which requires the construction of additional interconnectors. Therefore, this limitations imposed on cross-border trade further prevent the liberalization of the gas market in the country.

Graph 3 on the next page depicts the existing interconnectors of Bulgaria with its neighbors, as well as the ongoing gas infrastructural projects. Since the country is experiencing a strong concentration of gas imports, executed on one single route and strong concentration of upstream monopolistic market power, there is a need for the diversification

of the gas supplies. There is an ongoing project for the supply of compressed natural gas (CNG) from Azerbaijan through the Black Sea and LNG from the Middle East through the existing LNG terminals in Revithousa, Greece, Izmir and M. Ereğlisi, Turkey (MEET 2011b, pp. 2-3). According to the National Energy Strategy (MEET 2011c, pp. 10-11), the priorities of the government include the construction of gas interconnector with Turkey, which will allow for the import of Caspian gas, as well as interconnectors with Serbia and Romania for the possible import of gas from Western Europe. However, the earliest date for the opening of first cross-border interconnector with Turkey which is expected to improve the access of third parties to the gas network system is estimated only for the end of 2013 - beginning of 2014, which significantly delays the compliance of Bulgaria with the EU legislation.

Graph 3: Cross-border infrastructural projects in Bulgaria



Source: Information taken from IHS Global Insights. (2010) *Bulgaria: European Gas Country Profile*

The two major natural gas projects, in which the country is engaged, however, remain NABUCCO and South Stream, which are often seen by the EU institutions as competitors. Stefanov *et al* (2011, p. 54) clarify in their study that due to the lack of available financial resources in Bulgaria, the two projects will struggle for state money and it is highly unlikely

that both of them will be implemented simultaneously. NABUCCO project¹² for them is clearer in terms of its goals and implementation and is based on the common EU framework. South Stream on the other hand, is subject to a number of bilateral agreements and common enterprises between Russia and the country-participator (Stefanov *et al* 2011, p. 54). In the authors' opinion this leads to incoherence in ownership and an asymmetric relationship between the parties, which risk the future transparency of the project. In addition to these, South Stream also remains closed to third parties, which will directly violate the rules of Directive 2009/73/EC.

The lack of infrastructure and the existence of only one interconnector with a neighboring country is a major barrier for the development of cross-border trade between Bulgaria and the rest of the markets in the region. It prevents third parties from entering the transmission system and therefore, offering better and more competitive conditions to the end-providers and end-users. Despite the fact, that the construction of interconnectors with the neighboring countries is an ongoing project, its implementation is quite slow and further delays the market opening. The participation of the country in South Stream and especially, NABUCCO project is a good way to diversify the energy supplies but also requires huge state investments which currently can be better allocated for the development of the internal and inter-border infrastructure.

4.7. Summary

This chapter provided a deep analysis of the natural gas sector developments in Bulgaria. Based on the five market dimensions of the subsidiary test and the conclusions

¹² A lot of uncertainties exist about the future of the project, such as the lack of enough gas resources to fill the capacity and the whole funding of the project. The most recent development was the announcement of the Hungarian oil and gas company MOL Zrt. that it will not finance NABUCCO in 2012. This decision was seen by many as a confirmation of the widespread view that the project will incur high costs and uncertain gas supplies (Gulyas *et al* 2012)

drawn on the major obstacles experienced by the sector, Table 3 below summarizes my estimation for the level of implementation of the EU market liberalization requirements. I have measured this level of implementation from **low**, indicating unsuccessful implementation to **high**, indicating relative success in aligning with the EU requirements.

Table 3: Level of implementation of the market liberalization in Bulgaria

<i>Market Dimension</i>	<i>Liberalization Requirements</i>	<i>Level of Implementation</i>
Market Consolidation	Decrease of the market power	Low
Network Regulation	Legal and functional TSO unbundling	Low
	DSO unbundling	Not Applicable
	NRA independence	Moderate
Wholesale Market	Structure (ex. gas exchange)	Low
	Tariff model (entry-exit)	Low
Retail Market	Decrease in market concentration	Moderate
	Price liberalization	Low
	Possibilities for switching the end-providers	Low
	Information availability and consumer protection	Low to Moderate
Cross-border Dimension	Development of international infrastructure	Low
	Participation in regional projects (ex. NABUCCO)	High

Conclusions and Recommendations

1. *Summary of Findings*

The thesis has assessed how far the Bulgarian natural gas market has been liberalized in the last five years since the EU accession of the country in 2007. By analyzing the different aspects of the market and its participants, the thesis identified the main problems and obstacles which have to be overcome in order to ensure proper implementation of the EU legislation on the creation of Internal Gas Market. The structure, functioning and regulation of the natural gas sector in Bulgaria have been evaluated on all market levels in order to benchmark it against the existing requirements of the EU Directives. Based on a number of inconsistencies found with the European jurisdiction, a set of recommendations can be provided in order to address the problematic areas of the sector and to work for its full liberalization.

The findings of the research support the main argument that even though the Bulgarian legislation offers full market opening of the natural gas sector, there are significant **structural, institutional, regulatory, and infrastructural** obstacles that prevent the liberalization and free competition in this particular sector of the economy. An important **structural** problem is the high market concentration and the existence of strong monopolies in the supply and transmission of natural gas. They receive preferential treatment by the state and have the power and capacity to exercise full market control, put limitations to potential new entrants and hinder the development of competition which is an indispensable characteristic of a liberalized market. The lack of effective **institutional** unbundling of the TSO leaves it still highly dependent on the VIU BEH and vulnerable to exposing sensitive information to the rest of the subsidiaries part of this national champion. The problems with

the upstream and mid-stream national companies are also reflected in the retail market where due to the abuse of upstream market power, the end suppliers and large consumers are prevented from availing of their rights to use the transmission and storage capacities.

The state institutions and the NRA SEWRC fail to offer the necessary incentives and to ensure the proper **regulatory** control in the gas sector so as to stimulate competition and full market opening. The fact that all of the supply, transit and transmission companies are still under the single ownership of the state raises serious questions regarding their political and financial independence. SEWRC also lacks the necessary regulatory mechanisms to provide investment incentives to the gas companies and to empower the end-consumers so that they seek and defend their rights on the market. By granting distribution licenses on a local principle, the NRA strengthens the regional monopolies and hinders the possibility for competition and free entry of other market players.

The lack of proper national and international **infrastructure** for the transmission and transit of natural gas additionally complicates the liberalization process and hinders the successful implementation of the European jurisdiction on a national level. The small percentage of households and municipalities which have been gasified compared to the average EU-27 shows a significantly limited capacity of the downstream market, where companies restrict their operations to individual municipalities and lack the proper investment incentives for further market development.

2. Recommendations

Based on the findings discussed above, a number of recommendations to address the liberalization problems and obstacles of the natural gas sector in Bulgaria can be offered. While the structural and institutional recommendations are more related to the general EU

requirements towards all member states with liberalizing gas markets, the regulatory and infrastructural recommendations are particularly tailored to the case of Bulgaria.

In the short-run there are six steps which require immediate implementation to ensure full compliance with the EU legislation. From a **structural** perspective there is a need for:

1. Complete legal and functional unbundling of the TSO ‘Bulgartransgaz’ EAD

from the VIU and separation of its transmission and storage systems so as to strengthen its independent role on the market and to prevent any abuse of dominant position. This requirement should be well integrated in the new Energy Act of the country to prevent any misinterpretation of the legislation and should also contain precise provisions on its way of implementation. The possibility for introducing more transparency in the number of requests received from third parties by the TSO should be also discussed and implemented. One way of doing this will envision the submission of quarterly notifications to the NRA. This will allow the NRA to timely block any TSO’s discriminatory practices for granting access to its facilities.

2. Listing of stocks of ‘Bulgargaz’ EAD and ‘Bulgartransgaz’ EAD on the

Bulgarian stock exchange will significantly improve the transparency of their activities and management practices. Since the stocks will go to those who value them the most and risk their capital, the new owners will have incentive to work for the companies’ best interest. The IPO will also provide for additional market capitalization, improve the financial performance of the companies and offer possibility for infrastructural investments. However, a potential problem that might arise will be the unwillingness of the state to give up its control over this vital sector of the economy or to decide to list only negligible percentage of the companies’ shares and still remain the major stakeholder.

From an **institutional** perspective:

3. **The NRA should be free from any political and financial dependence** on other state or private institutions and individuals. It should be entitled to greater, legally binding power and more responsibilities to control the proper unbundling and separation of activities of the natural monopolies. It should also be allowed to require mandatory investment from the public supplier and the TSO and impose sanctions in cases of abuse of dominant position or breach of the EU legislation. The implementation of this recommendation highly depends on the successful adoption of the new EA which has to accurately interpret the EU legislation requirements for the NRA.

From a **regulatory** point of view:

4. **SEWRC should also provide complete and accurate information to the final consumers on their rights and obligations** so as to give them additional empowerment to pursue their interests for better service provision and lower prices in a liberalized natural gas market. The procedure for answering complaints or connecting new customers to the distribution grid should be facilitated and executed in timely manner.
5. **SEWRC should gradually remove the regulated prices on natural gas.** By allowing prices to be market-determined, the competition will significantly increase and new companies will have the incentive to enter the market and invest in the sector. Currently there are no trends in this direction and it is highly likely that it might prove a hard task to be achieved since the state price intervention is still viewed as beneficial for providing consumer protection against bad market practices. Nevertheless, it is arguable how valid this argument is, because the higher competition which will potentially emerged when prices are market-based will lead to

accurate reflection of the supply and demand tendencies and fairer prices both for the consumers and producers.

6. **The current tariff model ‘postage stamp’ should be changed to ‘entry-exit’** in compliance with the TEP. This will allow for more effective calculation of the costs for transmission since they will be based on the principles of distance and network capacity. In addition to this, the new tariff model will also strengthen the equal treatment of new entrants to the system. The implementation of this recommendation should be an easy task for the national TSO and the SEWRC because the requirement for tariff model change has been on the agenda since the adoption of the TEP in 2009.

In the middle to long-run two other steps need to be implemented both on national and international level to ensure the well-functioning of a fully liberalized gas market in Bulgaria:

1. **A natural gas exchange should be created** which will contribute to tackling the existing problems of the wholesale market and improve the price formation. However, before this step can be implemented there is a need first to remove the price regulation on natural gas. Second, the level of competition on the supply side has to be increased by allowing new companies to enter the upstream market in the country and to seek alternative sources of gas imports so as to escape from the full dependence on the Russian Federation. There is also a need for stronger international cooperation, especially with the neighboring EU countries Romania and Greece in order the recommendation to be implemented. This will allow for faster and better market integration in the region.
2. **Gas-to-gas competition should be introduced** through the construction of additional interconnectors with Turkey, Greece, Serbia and Romania. Only in this way, the Bulgarian consumers will be able to benefit from diversified natural gas supplies and

the possibility to switch to the services of distributors operating in the neighboring member states. By providing the necessary infrastructure, the current problem with the fully booked capacity over the existing long-term contracts will be solved and new market entrants will be offered the extra capacity. The proper infrastructural connections will also permit for the integration of the potential Bulgarian gas exchange with those of the neighboring EU members at a later stage of the market development.

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