The switching of natural gas supplier in the context of the liberalized retail gas market in Greece

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I hereby declare that the work submitted is mine and that where I have made use of another’s work, I have attributed the source(s) according to the Regulations set in the Student’s Handbook.

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Abstract

This dissertation was written as part of the MSc in Energy Law, Business, Regulation and Policy at the International Hellenic University.

The researcher during this report has undergone the changes in the gas market in Greece with regards to the eligible customer. The laws and the directives of the EU have been presented together with the changes that have been done. As it has been proven, today the customer in Greece has the right to switch the gas supplier of his choice after he has arranged his debts with the old supplier. To the same direction, RAE has created a platform where the customer can find out the details of his contract with all the charging details. Regarding the arrangement of the details however, for the customers who are in need of face health problems, there are longer due dates and the customer can take up to six months to pay his debts.

This dissertation is based on three parts: methodology, literature review, discussion and conclusions. On the methodology part, the researcher presents the way that he approaches the subject of the dissertation, that is, a literature review. Nowadays the literature overview is considered of being a scientific approach that is equivalent to the data presentation and analysis, thus, many researchers choose it. The second part is based on the literature review of the subject and is divided in two parts, the first part regarding the gas market and the second part regarding the European and Greek legislation. The second part is followed by the third part which is the discussion and the conclusions of the subject, also followed by the references on the subject.

I would like to thank at this point, my supervisor Prof. Dr. Theodore Panagos for his valuable help.

Keywords: gas market, Greek legislation, European legislation, eligible customer, legal changes

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Preface

If I speak in the tongues of men and of angels, but have not love, I am a noisy gong or a clanging cymbal. And if I have prophetic powers, and understand all mysteries and all knowledge, and if I have all faith, so as to remove mountains, but have not love, I am nothing. If I give away all I have, and if I deliver my body to be burned, but have not love, I gain nothing. Love is patient and kind; love is not jealous or boastful; it is not arrogant or rude. Love does not insist on its own way; it is not irritable or resentful; it does not rejoice at wrong, but rejoices in the right. Love bears all things, believes all things, hopes all things, endures all things. Love never ends.

St. Paul's First Letter to the Corinthians 13:1-8
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Introduction

There are several undergoing changes in the European Union (EU) market of the natural gas; these changes have a huge impact not only on the EU natural gas market but also on the political relations concerning its supply from non-EU countries. Thus, the natural gas segment is regarded as an extremely significant one, as stated by both the International Energy Agency and the European Commission. The challenges that have been set as a task for the EU are the following: the trend of the market of the natural gas to increase constantly and thus the EU’s dependency from the non-EU natural gas exporters to become deeper and deeper; furthermore, the European Commission decided and started to implement the liberalization of the gas segment. All these challenges for the EU and each member state are a very strong initiative for the issues of the gas sector to be examined thoroughly and solutions to be given for them; such issues are the legislation regarding the import of natural gas and the structure in general of the internal market for it.

The demand for natural gas is constantly increasing due to several factors. For example, the Kyoto Protocol has imposed several rules and regulations regarding the protection of the environment and thus measures must be taken for the reduction of carbon dioxide emissions; these led, in turn, to the increase of the demand for natural gas. It is important to mention here some characteristics of the natural gas that make it friendlier to the environment. It contains substantially less carbon compared to oil or coal and thus it is less pollutant. Furthermore, the usage of gas is the longest possible term supply situation; currently the EU imports approximately the 60% of the gas that uses while the relevant needs for oil import are more than 75%. Since the reserves within the EU are limited for both these sources these percentages will surely increase in the future. Europe uses gas mainly for the generation of electric power; more specifically, during the decade of 1990’s the share of natural gas within the EU grew a lot due to the increasing need for production of electricity i.e. the share of natural gas in the production of electricity increased from 12% to 28% The range of that production varies substantially between the EU members, that is, in Sweden the percentage is 2% while in the Netherlands is 46% The EU is highly interested in finding ways to protect the supply of energy which was jeopardized by several events such as
natural disasters or political disputes. The International Energy Agency (IEA) defined the energy security as “availability of the regular supply of energy at an affordable price” while the EU has added to that definition the “respect for environmental concerns and perspective for sustainable development”. The EU strategy for the security of the energy supply includes of course the security of gas which covers several aspects such as the economic risks and the physical risks that are mainly provoked by political disputes and crisis. There are two major aspects regarding the concept of security of gas supply, namely the short-term security and the long-term security. The term short-term security refers to assurance towards customers that they will receive natural gas without any interruptions. The term long-term security refers to an economic and efficient supply of natural gas for many years. In order to ensure both these aspects the physical gas must remain available and be transported with safety to its end-users. Furthermore, the security is characterized as external, meaning that the imported quantity of gas is sufficient for the coverage of the needs of the consumers and internal, meaning that the infrastructure of the country is capable of providing to the customers what they need.

Regarding the Greek eligible customer, in order for him to switch a gas supplier, a consumer or a single business will have to rearrange its debts in order to prevent the accumulation and transferring of debts to the new gas company. The new Gas Supply Code, which has been adopted according to the recommendation of the Greek Regulatory Authority for Energy, and which has been amended with the help of the decision of the Minister of Environment and Energy, sets several rules regarding the invoices, debt cancellation, consumer information and so on. The aim of the new Code is to avoid the tactics followed by many consumers who were leaving their debts unpaid. The Gas Supply Code, among other things, expressly states that switching of a supplier occurs after the repayment has been done or there is a settlement of overdue debts, regarding the new supplier and the past liabilities. Indeed, until today, if a customer requests switching out of a supplier, and the supplier has previously terminated the contract, then the latter has the right to ask the relevant Operator not to reactivate the customer's gas connection until the debts are settled. The Regulation excludes only those who are considered being "vulnerable customers" and who are in need of mechanical support or have serious health problems that they have to face.
The supplier may provide customers in difficulty or inability to repay gas consumption accounts, with the help of special programs for debiting gas accounts or settling past debts, in particular through instalments. If an account is not paid in due time then the debt that is outstanding is transferred to the next interest-bearing account. If the second repayment term expires, then the supplier may request a cessation of supply for the customer who is the subject of the debts. More to that, the tariffs must be readjusted with a transparent mechanism known in advance to the customer who is interested.
Chapter 1 - Methodology

1.1 The importance of literature review

The researcher during this dissertation will follow the literature review research method. The first reason for undertaking a literature review is to accelerate the approach and not to reinvent the wheel. It is very rare to be able to explore a completely new question and the minimum of rigor requires a researcher to know the founding texts of the field of his research. It is very unlikely that there are no books or articles to establish at least one frame of reference to systematically study the issue of interest. A good literature review must therefore proceed to a critical evaluation of the works already devoted to the subject. It should not be limited to presenting the documents consulted on a linear basis, but it must in fact highlight the important contributions (Brocke et al., 2009). The literature review should expand the knowledge of a subject by conducting an open inventory of the concepts and methods associated with the research question; this review should reflect the evolution of knowledge developed over time by those who preceded the researcher on the gas market. In addition, this opening must be marked by the time and other resources available to the researcher. It will therefore be used initially to identify the premises on which the research will be based. It will demonstrate that one has a good knowledge of research related to the topic, accepted research practices, and will identify the scientific community that will be called upon to judge the final work. If the researcher has a well-presented evolution of knowledge accumulated over time, he will all the more be able to identify the gaps and justify the work he proposes to do. It is as a result of this quest for past work, and having assessed the breadth and depth of knowledge on your subject and identified the dimensions requiring more depth, the researcher will be able to better clarify the question of research (Webster and Watson, 2002).

For the review to be useful, it is necessary for the researcher to be able to classify the works by themes and categories of contributions. Each piece must be evaluated for its unique contribution to the researcher, while being put in relation with the other contributions of the field. Texts that bring nothing, those that would only report the contributions of others, are rarely useful in literature reviews, if not to guide the
researcher to the authors to read to appreciate them himself. A minimum requirement of rigor and ethics when generating a literature review is to read the whole text. One must be wary of the interpretation of texts often found in reference. Too many books or articles refer to authors who are regularly identified with a subject. Many feel the obligation to rely on authors based on the simple fact that everyone seems to do it. A good literature review however, requires that the researcher consults the referenced book and that he is wary of the interpretation of others, unless there are exceptions in the text. In addition, reading other literature reviews in the research field may prove useful to help the structure of the researcher’s thinking. However, the researcher must not lose sight of his own question of starting, probably different from those used to build these other reviews of literature. This brings the researcher back to the need to read in a structured way. Only important texts should be read to understand - the role of intelligence - the question the researcher is exploring, and to avoid scattering to flaunt an encyclopedic knowledge - a demonstration of intellectualism -. It goes without saying that there are cultural differences on this point: the researcher has to show that culture is very important for an academic, so that a tendency to intellectualism can unnecessarily lead to obscure literature reviews (Brocke et al., 2009).

The literature reviews are not written so as to present the authors linearly, but they must demonstrate the links between concepts, which have been addressed by various authors. It is this operation that can be described as “critical” which means that there is a critical review of the literature and a critical analysis of previous research. One should no longer speak of a simple annotated bibliography, that is to say physical or virtual reading sheets where he gathers reading contents either in the form of quotations; it is also another skill; thus, the researcher has to develop skills of reading among the texts. Regarding the result, the answer cannot be precise, but one rule is that few well-read relevant articles are better than too many irrelevant articles barely reviewed. Since few subjects are in unexplored territory, it is quite easy that the researcher starts with three to five sources. Thus, the researcher should not choose the reading of an odd number of texts to avoid the natural tendency to oppose two visions; nor should he fall into the easy trap of the three positions that would be "for", "against" and "undecided" (Webster and Watson, 2002).
1.2 Research questions

The research questions that will be answered during this literature review are:

1. Is the Greek customer able to switch his gas supplier?
2. Are there any exceptions to the rule?
Chapter 2 – The Gas Market

2.1 The liberalization of the gas market

In the 1980’s the neo-liberal ideas were incorporated by R. Reagan\(^1\) in the USA and by M. Thatcher\(^2\) in the UK; by that time the European Commission drafted the Single European Act\(^3\) regarding the transformation of the companies that were owned by the state into private ones. The major objective of that concept was the reduction of the commodities’ prices in order for them to become more competitive globally\(^4\).

By the term liberalization we refer to a process of opening the market by removing the national barriers of the countries for trading freely; specifically, as far as the EU is concerned, it also includes the establishment of a situation where the industries may be competitive one against the other but at the same time their ethos will be stipulated\(^5\). As a general rule the customers within a liberalized market are free to buy whatever they want from whoever supplier they wish; no restrictions exist. Furthermore, the suppliers have the right to enter or leave the market at any time.

The liberalization of the market included the energy market as well; in order for that situation to be established national legislation was drafted by EU member states. The networks that existed already had to be separated from their Operators and new players had the right unrestrictedly to enter the market; moreover, a mechanism for the establishment of free market prices was created.

The relevant EU Directives initiated the process of liberalization which was then enacted by its members; in 1998 the 1st EU Directive\(^6\) regarding natural gas was issued and everyone’s\(^7\) right to access the existing networks was established. The national

\(^1\) US President.

\(^2\) UK Prime Minister.

\(^3\) Single European Act 1986, European Commission.

\(^4\) Finon, 2004, Reshaping European gas, p. 3.

\(^5\) Cameron, 2007, Competition on energy, p. 191.


\(^7\) Meaning producers, distributors and customers.
regulation authorities would remain the supervisors of the operations of the new players.

2.2 The demand for natural gas within the European Union

Natural gas has managed to become the 2nd most important source of energy within the European Union during the last few decades. In the following diagram we see a prediction regarding both the consumption of natural gas by EU state-members up until 2030 and subsequently the dependency from imports;\textsuperscript{8} according to that prediction, the consumption of natural gas will increase from 438 bcm\textsuperscript{9} (in 2005) to 565 bcm (in 2020), and reach 679 bcm by 2030 (that increase is almost 43%). Furthermore, the dependency of the European Union on imports of natural gas is expected to increase from 60% in 2015 and reach 74% by 2030.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{natural_gas_consumption.png}
\caption{NATURAL GAS CONSUMPTION & INCREASING DEPENDENCY}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{dependency.png}
\caption{EU 27 dependency from import of natural gas until 2030.}
\end{figure}

\textsuperscript{8} Eurogas Report, 2015.

\textsuperscript{9} Billion cubic meters.
According to Euro-gas, in 2005 the share of natural gas in the European energy market was 24.6% and is expected to reach almost 27% by 2030\(^\text{10}\). The major consumers of natural gas in Europe are Italy, Germany and the UK; Spain on the other hand had a growth rate of almost 12% between 1990 and 2004\(^\text{11}\).

The diagram that follows depicts the major sectors that use natural gas\(^\text{12}\) (Source, Euro-gas, 2007, Long-term outlook, p. 3).

We may clearly recognize that the demand for natural gas constantly grows; more specifically, natural gas will be used primarily for the generation of power due to the developments that took place in Italy, Spain and in the UK. Under the report of the International Energy Agency regarding the market of the natural gas, there will be an increase in the generation of power of 38% until 2030; the reasons for this increase are the fact that gas is friendlier for the environment compared to coal while at the same time the time for the construction of power plants using natural gas is significantly shorter.

Currently natural gas holds a percentage of more than 38% in both the commercial and the residential sectors; that share in the market makes the market of natural gas a leader in the general energy market. In 2015 approximately eighty million (80,000,000)

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\(^{10}\text{Euro-gas, 2007, Long-term outlook, p. 3.}\)

\(^{11}\text{Cedigaz, 2005, Players on European gas, p. 47.}\)

\(^{12}\text{Euro-gas, 2007, Long-term outlook, p. 3.}\)
people within the European Union used gas in their houses\textsuperscript{13}. In industry, approximately 33\% of businesses use natural gas for their needs; in order for that share to become bigger the suppliers of gas must become more competitive i.e. offer to the end-users lower prices. On the other hand, the increase in the consumption of gas by the industrial sector will be outbalanced by required investments which are mandatory in order for the plants to become modern and updated; due to that reason the expected growth until 2030 is only 1\% per year\textsuperscript{14}.

The conclusion from this brief analysis is that the future demand of gas depends on several factors such as its price, especially compared to the price of oil; In addition, the market conditions of the rest of the energy sources, which are based on the decisions of each state regarding them, play a crucial role.

2.3 \textit{The structure of the European market of gas}

When the 2\textsuperscript{nd} World War came to an end, the governments of several European countries took active part in the reconstruction of industries all over Europe; at that time, electric power and natural gas industries were both developed. Due to the fact that the resources of the natural gas reserves are not distributed evenly is a main reason for the creation of the gas monopolies in Europe. Furthermore, the monopolistic character of that sector became stronger due to the fact that the transportation costs of natural gas are extremely high\textsuperscript{15}.

The industry of gas was for many decades controlled by the government since central planning was prevalent in almost all European countries, meaning both the communist ones of Eastern Europe and the semi-socialist ones of Western Europe, a major belief; that belief was strengthen even more because the natural gas reserves were found mainly in regions that were politically sensitive and thus the states wanted security to be enforced.

\textsuperscript{13} Euro-gas 2016, long-term outlook.

\textsuperscript{14} Euro-gas, 2016, long-term outlook.

Throughout the years the gas market in Europe developed in two (2) different levels, the national level and the European level. As far as the national level is concerned, monopolies were developed which contributed to the development of the networks of transport and distribution of the natural gas. Later on, the infrastructure for the import of natural gas was developed. The European level on the other side developed as an oligopoly that balances between the regional companies and producers. The gas market within the European Union is essentially an oligopoly of producers and an oligopoly of exporters from non-EU-countries such as Algeria or Russia. Furthermore, the gas companies that buy gas and then distribute it within the EU behave also as an oligopoly i.e. Distragaz in Belgium, OMV in Austria or Gaz de France in France which also operate as monopolies in their own countries. It is important to notice here that each EU state has a totally different gas market situation; later on, in this dissertation the case of Greece will be thoroughly analysed.

2.4 How market liberalization was implemented

Natural gas was discovered after the end of the 2nd World War and since its role in the energy market of Europe is rather significant; more specifically, the first resource was discovered in 1950 in Italy in a location called “Po Valley” and a few years later the second gas resource was discovered in 1959 in the Netherlands in a location called “the Groningen field”. This location in the Netherlands continues to be the largest resource of natural gas in Europe up until today. Since the 1950’s, meaning since the time that natural gas was used for the first time in Europe, its consumption is constantly increasing. According to the statistics, 3% of the consumption of energy in Europe 1965 was coming from natural gas (International Energy Agency, 1965); in 2009 that percentage had reached the 20% while according to the predictions of the International Energy Agency in 2035 it will reach even the 44% of the overall consumption of energy. This prediction means in practise that natural gas is already and will become even more in the future a tool of the Europe’s effort to achieve energy security.

16 Percebois, 1999, Gas deregulation, pp. 9-16.

17 The United Kingdom, which has long since differed from the continental market and thus excluded.
A huge part of the natural gas production occurs outside the borders of the European Union i.e. Russia holds more than 40% of the global gas reserves while Iran holds 15%, Algeria holds 18%; that situation is a major concern for the European Union which imports almost half of the gas that it consumes every year and thus it is extremely vulnerable to i.e. a political event that may provoke a problem in the supply flow. For instance, in 2009 (1/1/2009) due to an unsolved dispute between Russia and Ukraine, the gas supply from Russia was shut down and major gas disruption occurred all over Europe; that political event highlighted how vulnerable Europe is as far as the import of natural gas is concerned and triggered the concern in the general of public regarding the security of the supply of natural gas.

Natural gas has some features such as the locations where its resources are situated or the technology which is mandatory for its extraction and use that have turned the natural gas market into an oligopolistic and thus non-competitive playing field. The European Commission started to liberalize this market, beginning from 1998 with the drafting of the 1rst Directive; two (2) other directives followed it. The major goal of those three (3) EU Directives was to turn the natural gas market into a competitive business field by allowing the entrance of potential suppliers without restrictions. The expected objective was to offer more options to consumers and thus lower prices; furthermore, the energy security was supposed to be increased due to the fact that the suppliers will be many. The reality, however, was totally different since the competition did not grow stronger, the prices became higher, the consumers still choose the same old suppliers and thus the energy security did not increase. Some characteristic examples of the situation within the EU natural gas market are the following: the so called “Nabucco” pipeline and the North and South Stream pipelines did not include any, of the major at least, perspectives of liberalization (Liao et al., 2011).

2.5 The structure of the natural gas market

The market of natural gas consists of two (2) major parts, meaning the physical part and the business part. The physical part is divided into three (3) main sections (Yu, 2011):
1. Production, meaning the extraction of gas from its natural resource and process of removing of the impurities in order to become clean and ready to be used.
2. Transmission, meaning the transfer of gas in pipelines or LNG ships towards the wholesale customer and stored there.
3. Distribution on a local basis to the end-users also via pipelines or CNG tracks.

It is rather important to mention that the construction of pipelines is expensive; more specifically, a pipeline of four hundred (400) km may cost even $750.000.000 (Oil and gas Journal, 2014). That is one of the major differences between the market of natural gas and the other sources of energy i.e. oil which is transferred without difficulties.

The market of natural gas is influenced a lot by the above procedures that the natural gas must go through up until it will reach the wholesale market and its end-users; thus, the fact that in these three (3) sections there is not any competition influences that market which is oligopolistic and integrated both horizontally and vertically.

Regarding the type of contracts which are mainly chosen in the natural gas market we may say that the most common ones are the long-term which bond the involved parties for many years, usually more than twenty (20). One of the major reasons that that type of contracts are chosen by the companies involved in that business is the fact that the costs to start-up and operate a gas company are huge and therefore they are trying to find ways to re-gain at least the capital investment they have initially made; a long-term contract of i.e. production company with the wholesale distributor is for the first one a guarantee that when the project will be completed demand will appear immediately. These long-term contracts depict the lack of competition that exists in the natural gas market.

Furthermore, the natural gas market is oligopolistic as far as the suppliers are concerned; more specifically, in Europe the following four (4) companies have the responsibility to supply Europe with natural gas: Gazprom (Russia), Sonatrach (Algeria), GFU (Norway) and Gasunie (Netherlands) provide almost 90% of the natural gas that Europe needs. That situation is mainly explained by the fact that the natural resources of gas are located in specific areas and thus when a company was founded in that area, natural monopoly was essentially granted to it. In practise, the existence of such a few companies that supply natural gas to the market make the competition almost
impossible to happen (Liao et al., 2011). The following diagram depicts the imports of energy sources that EU implemented in 2016 (Source: Eurostat, 2016):

The physical part of the natural gas market influences a lot its vertical integration; what is influenced more is the vertical part between the stage of production and the stage of transmission. This means in practise that a company that operates in the first section of the physical stage, meaning it extracts gas from a natural resource, must make sure first that a network of pipelines exists which is able to transfer the gas to the wholesale and from there to the end user; furthermore, a company will not invest money and enter the transmission stage by constructing infrastructure if there is no guarantee that gas will exist to be transported. Thus, companies that operate in both these stages have the incentive for a vertical integration in order to assure that things will work in the right way for everybody.

The horizontal integration is also favoured by the conditions that exist in the natural gas market; the fact that the expenses of constructing infrastructure for gas extraction and the gas networks are huge. If two (2) companies want to operate in the same region, it is easier to merge and use the same pipelines than constructing two (2) different ones for the same route. Thus, the way that the gas market is structured leads the companies to merging decisions and integration, both horizontally and vertically. All these features of the gas market and its tendency to integrate and be oligopolistic, explains the EU’s concern regarding it and its decision to liberalize that
market. That situation was for the European Union even more severe since the suppliers of gas were very few and furthermore, they originate from states unfriendly towards the EU (Liao et al., 2011).

The European Union is a federation of states which are governed regarding certain issues by a central authority but still they remain independent; in such an environment it is more than expected for divergent ideas to breed regarding the above issues i.e. for the issue of energy each member state had its own approach regarding the sources that would cover its needs and all of them were totally unwilling to transfer the authority for that issue to a European body.

The reality regarding the energy within the European Union was that very few companies had in their hands the power to handle that issue and even ignore any effort by the European Union to change that situation. Up until the end of the 1990’s, the natural gas and the electricity markets within the European Union were controlled by energy companies that were owned by states; these companies were implementing all the stages of the vertical chain, meaning the production, the transmission and the distribution of the energy. In other words, the energy market was integrated vertically since the few companies that existed extracted, transported, stored and distributed the gas or the oil to the wholesale suppliers but often to retail ones as well; thus these “multi-players” were in control of every single aspect of the energy chain and since they had the monopoly, they had the power to dictate the prices. Furthermore, the lack of competition and of any motivation was leading these companies sometimes into being inefficient (Youngquist and Duncan, 2015).

During the period 1990-1996, the European Union realized the urgent need to liberalize the energy market; this meant in practice to remove any restrictions into permitting players to enter this market. That period was known as the “pre-liberalization phase” and several debates took place regarding the effectiveness of the existing companies; the European Union had decided that the market had to be liberalized and the state-owned companies had to become private. However, that task was extremely complicated and difficult.

The European Union set the target period to open the market of energy and to permit third parties to operate in it. The first step was to create a new structure for this market and to draft the necessary legislation to support it. The result would be to stop
the monopolies of the energy companies; the changes started to be implemented in the late 1990’s (Youngquist and Duncan, 2015).

CHAPTER 3 – EU DIRECTIVES AND GREEK LAWS

3.1 Council Directive 98/30/EC

The first EU Directive regarding the issue of energy and the liberalization of the gas market was issued and adopted in 1998; the main objective of that directive was to facilitate the competition in the market of natural gas by combating monopolies. A major feature of this directive was that identified the threat of monopoly power that existed in the energy sector, while at the same time the directive specified the states actions in order to split the existing vertical conglomerates of the Operators of the natural gas.

The initial step taken by the EU was the identification of the areas that were receptive to a potential opening of the energy market. The EU was aware that the existing companies would not allow the entrance of new players into the market of natural gas and thus the “Third-Party Access (TPA)” principle was established and implemented by the European Commission in order to stop the incumbent firms to create restrictions or obstacles for potential entrants. For example, companies that transport natural gas from the extraction area towards the wholesale/retail suppliers obtained the right to choose freely their supplier. Furthermore, the Directive 98/30/EC allowed accounting unbundling of the state-owned gas companies.

Directive 98/30/EC established rules regarding both the physical and business parts of the EU natural gas market; according to the provision of Article 29 of this EU Directive, member states were obliged to bring into force the necessary national rules in order to comply with it no later than 2000. The main point of that provision was for member states to prepare the administrative procedures needed for market liberalization. Member states such as Italy, Spain, Ireland and UK had already drafted and ratified the necessary legislation in order to implement the directive and member states such as

\[18 \text{“https://ec.europa.eu/energy/en”} \]

-16-
Sweden, France and Luxembourg were in an advanced stage of implementing it. Portugal and Greece, namely member states that had an underdeveloped natural gas market, were far behind in the process. According to the Gas Directive 98/30/EC, all gas-fired power generators could be eligible to participate in the new market; the only restriction was that the final consumption had to be greater than 25,000,000cb per year\(^1\).

The results from that directive were not the expected ones because all member states kept discriminating against foreign potential entrants, while at the same time they continued themselves to cater exclusively the existing conglomerates of state-owned companies; however, several benefits were realized and, above all, a step towards the desirable direction had been achieved (Duncan, 2015).

The directive has established a series of rules that reformed the energy sector and opened the gas market. These rules were:

1. The gradual natural gas market opening.
2. The gas undertakings in order for new gas infrastructures to be constructed.
3. The possibility of choosing a gas supplier.
4. Free access to natural gas transport and distribution systems\(^2\).

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\(^1\) [https://ec.europa.eu/energy/en until 2008.]

3.2 The period after the directive 98/30/EC

Generally, natural gas is transported over several countries regarding its production and final destination country. Directive 98/30/EC was a way of ending the monopolistic structure of the market with the proper use of a pipeline that was vertically integrated in order for the concession to break and the gas to be transported. The objective of the decision of the European Commission was based on the idea of breaking the monopoly and giving an end to the concessions of the trading companies in order for a single European market to be created. There were however mixed results in the end. The UK managed to create a competitive market while other European countries did not, thus, the single European gas market was criticized21.

Directive 2003/54/EC was implemented in 2003 in order to accelerate the reform processes of market liberalization. The directive was aimed at establishing common rules regarding the transmission, distribution, supply and storage of the natural gas. It also aimed at giving market access and drawing the framework for the transmission and all operations of the systems. There has been special attention to liquid natural gas (LNG) and biomass gas in order for all types of gas to be transported through the natural gas system.

Regarding the directive, all the obligations of member states such as the energy efficiency and price of suppliers should be transparent and member states should take the appropriate measures ensuring customer protection and that there are sufficient safeguards against disconnection of vulnerable customers. Transparency should be achieved by any means with the help of the general contractual terms and conditions and information about the dispute settlement mechanisms. Other details that were established by the directive were the general interest of the undertakings and the development of trade in order for it to not affect or be contrary to the interests of the community. Such interest would be the competition regarding the eligible customer in accordance with the directive and the Article 86 of the treaty. Member states should also be transparent on the reasons why they refuse an authorization and those should

be objective and non-discriminatory thus, they should be forwarded to the applicants\(^\text{22}\).

The key part of the directive was the regulated TPA principle, also called the Third-Party Access, regarding the potential network users that would be able to request and gain access to natural gas under transparent processes. Regarding the opening of the natural gas market, by 2005, most of the countries such as Denmark, Italy and Spain had fully liberalized markets while other countries such as France and the Czech Republic did not have the freedom to choose a supplier as their options were still limited to non-household customers. In most of the European countries, there is a considerable number of retail suppliers that mask the fact that there are few retailers of significant size, that is, less than 5% of the market share. Apart from market concentration though, the gas market is split into several regional distributors and the final consumer does not really have the option to choose. According to surveys, in many countries where switching is possible, the gas consumers do not want to exercise their right to switch their supplier. In addition, in many cases, there are not many offers or the offers are not available, or they may even resemble each other thus they do not constitute a real choice for the customer. Furthermore, there are incumbent firms that create obstacles to switching due to the fact that they have a strong market power.

According to Capece et al., (2007) who have implemented a regression analysis, the R squared values as given above, are particularly high for Germany, Spain, France and Italy, compared to the period before 1997. This was due to the fact that even if there was a legislation regarding the liberalization, in countries such as in Germany, the gas prices were governed in a way according to which there was a national regulator. The increase of the regression values in these countries was caused by the regulation of retail prices, a fact that means that there was a cost reflective price and, in the end, a reduced margin regarding the price paid by each household and the price that the imported natural gas had. This means that even if the legislation introduced a liberal framework for the gas market, the R squared values of those countries which were increased show that there was a dependency between the cost of the import and the price of the retailers that was noted down. Thus, the phase after the liberalization was
accompanied by effective competition that consequently leaded in a smaller import cost margin of the part of Operators\textsuperscript{23}.

### 3.3 Directive 2003/55/EC

The opening of the natural gas market and arrangements regarding the directive 2003/55/EC, was set by it, representing the completion of a competitive internal gas market within EU. Industrial clients and customers did have the freedom to choose the gas supplier that they had been preferring since July 1, 2004 for the industrial customers and for the domestic customers since July 1, 2007. The opening of the market had been directly linked to the quality of service, customer protection and all security needed regarding the supply objectives. According to the directive, it was laying down the right of third parties to have non-discriminatory access on the distribution and on LNG facilities. Thus, the new suppliers could enter the market and at the same time the consumer could choose the gas supplier of his preference\textsuperscript{24}.

Regarding the System Operators, those were appointed for the transmission system, the storage of LNG, and the distribution. They should operate and maintain the LNG facilities and they were obliged to ensure the safety and reliability of all facilities with respect to the environment. They were also accountable to provide other Operators with all the information needed regarding the safety of all interconnected systems.

Regarding the consumer protection, according to the directive 2003/55/EC, it did set the minimum standards in order to ensure a high level of protection regarding the transparency of the contract, the right of the consumer to switch his supplier and all kinds of dispute settlement mechanisms. Thus, the gas suppliers were considered as a public interest service that the consumer should pay in return for their product.


3.4 The gradual market opening

The policy makers and scholars in the field of the natural gas know that the natural gas market is based on a global consumption of more than 100 trillion cubic feet according to data from 2005, and gas is regarded as one of the most important energy markets. It is also considered as a key energy player when it comes to the industrial and the electricity generation sector for the next 20 years. According to the more recent data, the industrial sector is awaited to use more than 40% of the total world natural gas around 2030. Regarding its liberalization, the natural gas is an important source of competitiveness and the welfare of the European countries due to the fact that it is considered as cost effective and much less pollutant compared to the other energy sources. The monopolistic structure of the natural gas, as said before, ended with the directives 98/30/EC and 2003/55/EC\textsuperscript{25}. Countries such as Greece and France started to opt for a gradual market opening after the implementation of the directives. In Greece, the legislative framework was significantly modified during the recent years due to the fact that the European directives had to be transferred into Greek law. Generally, the natural gas market is governed by law 4001/2011. The Greek natural gas market is considered as a young gas market. Natural gas was introduced in 1996 where 100% of all imports were based on a single supplier with no indigenous production. This was a late start compared to the other countries of Europe as Greece was characterized as an emerging market and there was a derogation regarding the provisions of the directive 98/30/EC until 2006. However, regarding the context of the liberalization of the market, from July, 2005, the producers that were representing more than 70% of the market, became eligible customers. The gas law transposed the directive 2003/55/EC into the Greek legislation one year before the derogation would expire\textsuperscript{26}. The Gas distribution companies however (DSOs), EPA Attica, EPA Thessaloniki and EPA Thessaly were established in 2000-2001 under the provision of Law 2364/1995 and they operate under a Concession Agreement having the right of the distribution and supply of the natural gas in accordance with the derogation granted to Greece under


the Article 49.8 of the directive 2009/73/EC\textsuperscript{27}. The three EPAs granted the right to develop and operate the distribution network in their geographical areas, for the consumers of less or equal to 100 Gwh as non-eligible customers. The provisions including Law 4001/2011 were amended by Law 4336/2015 that aimed at further liberalizing the gas distribution sector in Greece. However, with the law 3175/2003, a series of measures for the process of the liberalization also took place. Yet, even though there was a law in Greece and even though more than 60\% of the market started being liberalized, in our country, DEPA was the only active company that was importing and supplying natural gas in Greece. The Law 3175/2003 was followed by law 3428/2005 in order for Directive 2003/55/EC to be transported into national legislation. The most important provision was the opening due to the fact that it allowed for competition to exist in one of the most important segments of the market, the energy segment. Power producers and the co-generators that used to have an annual consumption of more than 100Gwh could freely choose their supplier. There were also important steps that took place in the field of liberalization regarding DESFA, the Hellenic Gas Transmission System Operator (TSO) after the implementation of the Law 3428/2005. Under the same legislative provision, there were huge changes in the Greek market of gas from 2005 to 2008. There was from then on, an interconnection with Turkey that would allow the transit flows of gas to other European countries and would strengthen the domestic supply market. The timetable of the liberalization of the Greek market is given below\textsuperscript{28}.


<table>
<thead>
<tr>
<th>Phase</th>
<th>Demand</th>
<th>Date of eligibility</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power producers with demand of more than 25 mcm</td>
<td>July 1, 2005</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>Power producers/co generators with demand of more than 100 GWh</td>
<td>Law 3428/2005</td>
<td>80%</td>
</tr>
<tr>
<td>3</td>
<td>Non-domestic customers outside EPA</td>
<td>November 15, 2008</td>
<td>85%</td>
</tr>
<tr>
<td>4</td>
<td>All domestic customers not covered by EPA</td>
<td>November 15, 2009</td>
<td>90%</td>
</tr>
<tr>
<td>5</td>
<td>All customers</td>
<td>End of EPA concession</td>
<td>100%</td>
</tr>
</tbody>
</table>

In the following years, the number of residential and industrial customers of natural gas up to 100GWh, increased. From 2002 to 2010, the consumers of many regions of Greece increased by more than 50% because in the central areas of Greece, there were heating installations in many apartments. In the region of Thessaly and the city of Thessaloniki though, the majority of natural gas installations took the form of independent heating systems.

The basic points of transportation of natural gas are the Greek-Bulgarian borders where the natural gas enters through the pipeline in Russia, the Greek-Turkish borders where the natural gas system connects with the Turkish one and the island of Revythousa where LNG is received, stored and gasified.

Regarding the market players, in Greece the import and supply of natural gas to large consumers is done by DEPA. Because there may be several legal inadequacies and large investments are needed, there has been only one firm that operates, Prometheus S.A., being totally independent since 1991. However, there have been supply contracts between DEPA and foreign producers that were based on "Take-or-Pay" Clauses that affected adversely the degree of competition. These contracts did have anticompetitive effects leading to blocked market entry.
However, in the downstream market where gas is supplied to small or medium consumers, three gas suppliers exist (EPAs) and their prices are regulated by the algorithm that was found on their licences and the algorithm was regulated by Regulatory Authority of Energy. The three EPAs are formulated freely until today and Regulatory Authority of Energy\(^{29}\) has the responsibility to monitor and control the prices. When EPAs gross profit margins exceed the ones that they demonstrate in their licenses, Regulatory Authority of Energy can intervene in order to reduce the margins as a rate of return regulation. The EPAs try to expand, operate and maintain their local networks and distribute gas to domestic, commercial and industrial consumers that have a consumption of less than 100GWh. DEPA has 51% of the EPAs shares and the private investors have 49% of it, running the management at the same time. The natural gas distribution was entrusted to DEPA by virtue of Law 2364/1995 and the same law provided for DEPA to have the right to establish regional gas and several companies that were known are the EDAs in Attica, Thessaloniki and Thessaly. The EDAs established companies that became known as the EPAs. Regarding the establishment, the EPAs granted a licence of 30 years by the Ministry of Development and by virtue of those licences, the EPAs granted the right to develop and operate the network in their areas in order to distribute natural gas to the customers that had annual consumptions that were less or equal to 100GWh also known as non-eligible customers. The provisions including Law 4001/2011 that were amended by Law 4336/2015, were targeting at a further liberalization of the natural gas market in Greece. The new law abolished their right to operate their own system and until January 1, 2017, the EPAs should proceed with a functional unbundling regarding the distribution function of the rest of the activities they were performing. This process was also effected creating a spin off regarding the distribution function on the new EDAs that would operate under two licences, the distribution licence and the licence to operate a network.

Under Law 4001/2011, the licences are valid for 20 years and could possibly be extended for another 20 years. The EDAs could, if participating in a vertically

integrated natural gas company be independent from other sectors thus, they could have their own organization and decision making.

With regards to the Law 4336/2015, all future claims regarding contracts pertaining the termination of a 30-year licence vested to the EPAs would be settled in the course of unbundling negotiations. The Law would also give DEPA the chance to create a new EDA by spinning off the natural gas sector. The EDA would have a distribution licence and operate a network in the rest of the country. The owning of the networks that would be constructed by DEPA or the EPAs would rest with DEPA. However according to Law 4001/2011, the network that would extend the existing one would be undertaken in the future by the new EDAs.

Regarding the Law 4001/2011, the natural gas supply licences for the customers who would be eligible to choose their supplier would be required for those that would be willing to offer their services. The EPAs would be granted with licences and the process of supplying to eligible customers would be effected according to the terms and conditions of the Law 4336/2015. Until then, the EPAs could supply gas under the terms and conditions that were imposed by Regulatory Authority of Energy according to Article 8 of the Law 4001/2011. The eligible customers would be

1. The electricity generating companies that use natural gas for electricity generation.
2. All residential and non-residential customers outside the territories of the EPAs.
3. The customers who would be located within the territories of the EPAs, supplied with natural gas for transportation engines, for industrial use and for consumption exceeding 2.2 GWh.

Moreover, according to the Article 82 of the Law 4001/2011 non-eligible customers within the territories of the EPAs could apply to the EPAs or the EDAs and if their connection would not be realized within 3 months, the customer would have the right to seek to be supplied from another supplier becoming an eligible customer30. The licenses for the supply of natural gas, according to the registry of Regulatory Authority of Energy, are given -beyond DEPA and the three EPAs of Attica, Thessaloniki and Thessaly- to 28 other companies.

Those include Prometheus S.A. (Kopelouzos Group), M & M (former Aegean Power), Edison, ENIMEX, Terna, Heron Thermoelectric, Gunvor, Greek Environmental & Energy, GASELA, Hellas EDIL, Greensteel-Cedalion, Watt & Volt, NRG trading, Sourlas Bros. In the last two years, that is, from 2015 onwards, Makios, Elinoil, Protergia, Aluminium of Greece, Volterra, VIENER, CORAL, PNG, Aegean OIL, Q Capital, Revoil, PetroGaz and SINTEZ have had awarded commissions.31

On the switching of gas supplier, Greek Regulatory Authority of Energy has examined the issue of providing a prohibition on switching a supplier in the case of customer arrears to the previous supplier and has decided that the switching of supplier and the payment of the customer’s debts on the previous gas supplier is provided in the provision of the Law 4001/2011 on the one hand and on the other hand, in the Gas Supply Code:

1. According to Article 42 of the Gas Supply Code, natural gas supplier switching is permitted after a prior note which must be written regarding the termination of the Gas Supply Agreement. This can be initiated either by the customer, or by the new natural gas supplier upon written authorization by the customer. The existence of arrears that result from the Gas Supply Agreement does not prevent the exercise of the right to switch gas supplier.

2. According to Article 42 of the Gas Supply Code, the customer can not terminate the Gas Supply Agreement without having paid all debts to the previous gas supplier regarding the services that have been offered to him under his previous contract. The previous gas supplier has the right to pursue in any legal way the payment of the debts that have occurred.

3. According to Article 48 of the Law 4001/2011, the gas supplier can choose to refuse to supply a certain customer if there are serious reasons such as the overdue of a customer to a previous gas supplier. The conditions of refusal to supply and discontinuing of supplying, must be formulated in a way which can be provided to the customer in advance and during the stage of negotiations for the new Gas Supply Agreement.

Thus, the switching of gas supplier can be implemented after the debts have been settled and the customer may not terminate the contract that he has regarding his right to switch if he hasn’t paid his arrears regarding the original contract.

3.5 Consumer

The Greek Regulatory Authority of Energy has begun several processes regarding the development of an online application so that the typical Greek consumer has more power over the companies that he has a contract with. The objective of Regulatory Authority of Energy is to create a tool that will be able to monitor and compare all the products that are available in the market regarding the retailers of the energy sector and the online platform will analyse the competitiveness and the full costs with a pricelist with a competitive and adjustable strand. The application will be divided in three sections that are as follows:

1. On section A there will be a public access area according to which the consumers will have the chance to be informed with all the details that are available from the suppliers.

2. On section B there will be the registration that will be needed in order for the identified suppliers to offer their details regarding the entered data and information. Upon completion, after all the details have been identified, the supplier will be required to import all the data automatically through the interface of the application.

3. Regarding the section C, there will be an intranet where the regulator will have the chance to monitor the previous sections.

Regulatory Authority of Energy will issue a framework of regulation regarding the framework of the whole process in order for the obligations and the entitlements to be in a distinct area. This tool is very important due to the fact that the consumer will have the chance to be strengthened and be in a negotiated position with a full contact with the supplier and will be able to have full access to the costs without being obliged to pay overheads. More to that, the ultimate goal will be the active participation of the consumer in the determination of the demand process with a direct focus on the details of the contract of his choice. Thus, there will be an emphasis on the easy access of the consumer on the objective details based on the offers that the suppliers do. In addition to that, the customer will have full access to the details of the contract type.
that he chooses and he will be able to change the existing contract with the provider of his choice. It is though important to say that the tool is functioning in the sense that the customers need to trust the information given and the services that are provided to them on their own advantage. The details that the tool will have will be based on the following: transparency, completeness, independence, accuracy, clarity, understanding, user-friendliness, customer empowerment.

In addition, consumers will have the choice of having a discount on their natural gas supply if they are considered consistent with the payment of the account, a feature that is indicated by the Gas Supply Code which has been established under the Ministry of Environment. This framework regulates the relationship between consumers and suppliers. Suppliers can apply incentive-based policies regarding the customers who pay frequently and those who pay on time, because the supplier this way can avoid additional financial costs. This benefit applies to the customer who wants a reasonable deduction after paying all his bills. The new Gas Supply Code has been introduced after the Regulatory Authority of Energy has made several regulatory proposals and set rules on invoices, debt and cancellation together with the consumer information that has been analyzed above.

Another issue that has been discussed and there is focus on, is the way that the natural gas suppliers work, and how the bills are paid by the customers. The Ministry has decided to propose a single pricing per region for all those who are interconnected with the natural gas networks and those who choose a new supplier. This way the customers are treated equally and at the same time the gas suppliers can become more viable.

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Conclusions

As it has pointed out in the present work, a typical Greek customer of natural gas has the right to switch gas supplier after he has settled any debts with the old supplier. This right is stated in the Gas Supply Code, because the Regulatory Authority of Energy wants to avoid what happened in the electric power sector. Whether it is a natural or legal entity, the switching of gas supplier occurs only after repayment and after overdue debts have been settled. If the new representation request has been preceded by a complaint concerning the supply contract from the old supplier and a termination request has been made to discontinue the supply for that particular customer, the old gas supplier may ask the Distribution System Operator to re-activate the connection for that particular customer and suspend the switching process so that debts are settled.

Thus, the old supplier in the event of outstanding debts reserve the right to submit a deactivation order for the customer's gas-meter even if a supply contract has been made with a new supplier who has assumed the representation of the gas-meter for that customer. If the Gas Supply Agreement is not complied with, the old gas supplier may request that the customer be discontinued within 10 days of the relevant notification.

For customers who are considered to be vulnerable and especially for those who need support regarding their needs and face health problems, the supplier is entitled to terminate the supply contract only when the customer is late in paying six consecutive bills and after it has been done before notice by which the customers are informed for the possibility of settling their debts. Thus, the new Gas Supply Code prevents the accumulation of debts for the gas suppliers. Gas companies already have been anticipating the phenomenon of unpaid bills, although it has never taken the dimensions that the problem has received as it was with the Greek PPC. In order to liberalize the natural gas market, consumers can choose a supplier while companies are starting to operate on the market, with these forecasts being considered necessary to prevent first phase liberalization phenomena as it was the case with electricity where Greek customers left unpaid their PPC electricity bills.
The process of switching gas supplier may not exceed three weeks from the notification of the mandate with respect to representation of the responsible Operator and thus simply facilitates the switching of supplier without costing the customer in relation to the supplier’s obligations. At the same time consistent consumers in the payment of gas bills can enjoy discounts as indicated by the Gas Supply Code established by a decision of the Ministry of the Environment where consumer and supplier relations were regulated. The Ministerial Decision states that suppliers may apply incentive policies if customers frequently pay on time, on the ground that the supplier may avoid additional financial cover for the debts of the client. The benefit can now be passed on to the client in the form of a discount, according to the Ministry's statements.

It is anticipated that the supplier who holds a gas supply license under the Regulatory Authority of Energy’s Decision 356/2015 lawfully carries out the activity of supplying natural gas and for the purpose of its application and interpretation of the special definitions of Gas Supply Agreement with each customer individually. Thus, the customer belongs and remains in the household customer category based on Article 3.2 of the Gas Supply Code. According to the subject of the contract, the supplier may undertake to supply natural gas at the point chosen by the customer according to the data to be followed in the application and according to the terms of the contract where the customer receives the gas at the point of delivery of the installation by paying the fees and charges provided for in the contract.

The customer must have specific details to conclude the contract, such as the use and installed capacity of the gas burning appliances for the selected tariff plan. The form must be accepted by the supplier and signed by the two parties. The gas supply to the customer is triggered if there is an active contract of connection between the Distribution System Operator (DSO) and the owner of the property, otherwise it is not activated if there is no connection to the distribution network and no gas supply contract has been signed. If the customer does not have a sign-in contract, he can do so on his own initiative by contacting the Distribution System Operator either with authorization to the supplier related to the Connection Agreement with the Distribution System Operator.
The customer must pay in due time the gas consumption bills sent by the supplier. In addition, he must notify the supplier of his intention to withdraw from the facility at least 30 days before the date of departure. Thus, the supplier, under the relevant authorization, will have to take action under the statutory legislation to cease the representation of the gas meter in the gas supply. The date of cessation of representation shall indicate the date of recording by the Distribution System Operator. If the customer does not disclose his resignation from the supply contract, the legal results will still be generated and the customer will have to pay his financial obligations until he has ceased to be represented and terminated the contract.
Bibliography


