LISBON
SCHOOL OF
ECONOMICS &
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UNIVERSIDADE DE LISBOA

MASTER

INTERNATIONAL ECONOMICS AND EUROPEAN STUDIES

MASTER´S FINAL WORK

DISSERTATION

THE EUROPEAN ENERGY UNION: AN INEVITABLE PATH OR AN EVERLASTING CHIMERA?

ANDRIY VOYEVODA

OCTOBER - 2020

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SUPERVISION:
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ABSTRACT

The gradual integration in Europe has been a slow but steady process, a process that allowed the European Union (EU) to pursue common policies within the economic and political spheres. Such policies led to the establishment of a single market for goods and services, a monetary union, common political institutions, common standpoints in terms of foreign policy, and other shared aspects that added to the *sui generis* nature of the European Union as a supranational organization.

Despite this relative success within a variety of policy dimensions, the European project still lacks a common strategy for energy, which is a huge liability given the fact that the Union, as a whole, is highly dependent on fossil fuels imports to satisfy its energy-hungry economic growth. With great potential for a future common stance, the European energy agenda has not yet evolved to the same integration level as the economic and monetary policies have, for instance.

As such, the present dissertation focuses on the formation of the European Energy Union, seeking to analyze the several strategies partaken by the EU in order to complete a common energy strategy.

Keywords: European Union, Energy Security, Energy Union, Supranationalism, Energy Supply, Regional Integration

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ABBREVIATIONS

DSO - Distribution System Operator

EAEC - European Atomic Energy Community

ECST - European Coal and Steel Community

ECT - Energy Charter Treaty

EEC - European Economic Community

ETS - European Trading System

EU - European Union

GHG - Greenhouse gases

IEA - International Energy Agency

IEF - International Energy Forum

ITO - Independent Transmission Operator

LNG - Liquefied Natural Gas

LTGEC - Long-term Gas Export Contracts

MIBEL - Mercado Ibérico de la Electricidad

MIBGAS - Mercado Ibérico del Gas

OECD - Organisation for Economic Co-operation and Development

OPEC - Organization of the Petroleum Exporting Countries

REE - Red Eléctrica de España

TEU - Treaty on European Union

TFEU - Treaty on the Functioning of the European Union

TSO - Transmission System Operator

UK - United Kingdom

USA - United States of America

WTO - World Trade Organization

ACKNOWLEDGEMENTS

A presente dissertação representa o culminar de uma longa etapa e o fim de um ciclo, um ciclo que dificilmente seria possível de completar sem a ajuda e o apoio das pessoas que me acompanharam nestes últimos anos.

Em primeiro lugar, um grande agradecimento ao meu orientador, Professor Doutor António Goucha Soares, pela incansável ajuda e pela sua atenção ao detalhe que permitiram a conclusão deste trabalho.

Uma grande palavra de apreço para a minha família, pelo sempre presente apoio em todas as esferas.

Gostaria também de deixar um agradecimento final ao Bruno, ao Gonçalo, ao Vítor, e às restantes inúmeras pessoas que me acompanharam neste percurso académico.

1. INTRODUCTION

The concern over the scarcity of fossil fuels and the importance of the latter for the development of economic activities has been a core preoccupation within the realm of political decision-making for the last couple of decades.

As nations developed and began their process of industrialization, technological development that stemmed from the said phenomenon allowed for a mass usage of several sources of fossil fuels for transport, heating, and several other purposes, with natural gas and oil being the current preferred sources of energy.

With the development of a global fossil fuel-driven economy, scholars and public decision-makers have been challenged with a double issue: fossil fuels, just like any other resource, is limited in supply, and the fact that these limited resources are not evenly scattered around the globe adds to the problem. As such, energy security is a permanent worry for every nation on earth.

In regards to the European Union (EU), this is also an ever-present issue: having started a process of homogenization of policies within a vast array of subjects of economic nature and deepened its political-institutional ties among its Member States, the EU succeeded in establishing a single market for goods and services, a monetary union, common political institutions, common viewpoints in terms of foreign policy, and other shared aspects that added to the *sui generis* nature of the European Union as a supranational organization.

Despite this relative success within a variety of topics, the European project still lacks a common strategy for energy, which is a huge liability given the fact that the Union, as a whole, is highly dependent on fossil fuels imports to satisfy its energy-hungry economic growth. With great potential for a future common stance, the energy agenda has not yet evolved to the same integration level as the economic and monetary policies have in the EU, for instance.

Following this line of thinking, the present dissertation will focus on the formation of a common European energy strategy and will revolve around the following research question: To what extent have the combined energy initiatives helped to reinforce the construction of a common European energy security strategy within a supranational plan of action?

This study will be divided into several sections in order to reach its conclusions. In the second chapter, a literature review will be presented, and it will set the theoretical base of analysis for the following chapters and define the several prisms through which the common European energy strategies will be evaluated: since there's no single theoretical homogeneous view of the concept of energy security within the several academic fields, an analytical literature review of the main theoretical contributions to the concept of energy security is going to be an important step to reach the answers and conclusions to the research question.

Thus, the main methodology that will be applied throughout the present dissertation is going to be, precisely, the literature review mentioned earlier. Given the qualitative approach of this research, the resource to the main perspectives influenced by fields of study such as Political Science, International Relations, Economics, Engineering, and Environmental Studies will be the main tool of analysis of the concept of energy security and, specifically, the concept of energy security from the European point of view.

In the third chapter, a general analysis of the energy *status quo* of each EU Member State will be presented as a way to understand the EU's dependence on energy imports as a whole, its dependence on various fuel sources, and its main sources of imports. A resort to such a tool will make it possible to confirm if there are any apparent differences between the EU countries in terms of the different energy sources used in each country's energy mix, what's the weight of imports for said mix, and if there are any differences related to the origin of imports between Member States.

As for the fourth chapter, it will include an historical overview of the formation of a Common Energy Market as a way to understand what common initiatives have been undertaken by the EU Member States throughout the last decades and to understand the lack of a fully integrated Common Energy Market as part of the European energy strategy. Furthermore, the analysis of the legal framework will also be taken into account: the objective is to see how the creation of a Common Energy strategy is conditioned from a legal point of view.

In the following chapter of this dissertation and in line with the previous ones, an evaluation of the main strategies carried out by the EU will be presented. At first, special attention will be given to the liberalization process of the European energy

market, with the goal of analyzing the progress made so far by the Member States in respect to this policy. Secondly, the reliance on long-term natural gas contracts celebrated with the Russian Federation and the emergence of the importance of spot markets will also be given attention. Then, the emergence of several regional partnerships will also be discussed in order to understand the importance of regional integration in the shaping of a single European Energy Market, both intra-EU integration and regional integration beyond the EU borders. In the last section of this chapter, the environmental aspect of the European energy policy will be analyzed and conclusions will be drawn upon the strategies that have been put in practice by the EU and its Member States in this sphere, focusing on a triangularization of energy efficiency, greenhouse gas emissions, and investment in renewable sources of energy.

In the final chapter, an overall summary of every aspect of energy security of the European Union discussed throughout this text will be formulated: the purpose of this ending section is to balance out the analysis made in respect to each chapter, set out the positive and negative features of the European energy security, and conclude to what extent has the EU strengthened its security within the sphere in question.

2. DEFINING ENERGY SECURITY AND LITERATURE REVIEW

There has been a considerable amount of research produced within the energy security universe. The following paragraphs intend to present an overview of the theoretical contributions and the relatively diverse range of definitions of energy security.

A very common definition of energy security, heavily influenced by the oil shortages of the 1970's, could be presented as the "assurance of sufficient energy supplies to permit the national economy to function in a politically acceptable manner" (Elbassoussy, 2019: 326).

Another definition that dates back to the oil crisis of the last century was coined by David Deese: he claimed that energy security is the "condition in which a nation perceives a high probability that it will have adequate energy supplies at affordable prices" (ibid).

One last conceptualization states that "the objective of energy security is to assure adequate, reliable supplies of energy at reasonable prices and in ways that do not jeopardize major national values and objectives" (ibid).

What these three definitions have in common, besides the fact that they were introduced around the same chronological frame (late 20th century), is that all of them build the concept of energy security from the point of view of a single, individual political entity, focusing on keywords such as "nation" or "national economy", and showcase, in a more or less explicit way, that a normal political functioning of these entities is dependent upon a fully operational economy, the latter stemming from an access to energy supplies that fuel economic activities.

These concepts of energy security are just three standard definitions within a relatively big range of definitions in energy security studies and they do not fully represent the diverse research universe.

Therefore, in order to establish a wider comprehension of the concept of energy security, it is necessary to go in depth into the different perspectives that molded this concept.

Generally speaking, we can identify three perspectives according to Aleh Cherp and

Jessica Jewell (Cherp & Jewell, 2011): the sovereignty perspective, the robustness perspective, and the resilience perspective. Each of these perspectives were molded by authors of different academic backgrounds, which means that the way they view energy security is conditioned by methodologies and tools unique to each scientific field and conditioned by the time frame when they were created. The goal for the following paragraphs is to overview each perspective.

The sovereignty perspective is the first one that emerged in terms of chronological order, and it traces its roots to the political science field of research.

The emergence of political worries over the issues of energy security dates back to first half of the 20th century: when Western industrialized nations, such as the United Kingdom (UK), shifted from national based coal supplies and became dependent on oil supplies of distant geographical and unstable regions, it became apparent that securing a safe supply of energy flow was essential to maintaining the *status quo*. This notion became even more apparent during the Second World War, where energy security was "closely tied to the supply of fuels for the military" (Cherp, 2011: 1) and became essential for the war effort.

After the end of the conflict, energy security continued to be a matter of concern for the Western countries: these "developed nations became dependent on motorized vehicles fueled by oil products, not just passenger transport but also for food production, health care, manufacturing, heating, and electricity generation" (ibid), and the fact that oil producing countries were either decolonized or ceased to be protectorates of European colonial powers added to the peril of an oil supply disruption.

Such a delicate issue was exacerbated by the oil crisis of 1973 and 1979: the embargo of oil supplies to several European countries and to the United States of America (USA) made oil imports much more expensive and made energy security a focus of a state's foreign policy agenda. "Thus, in the first three-quarters of the 20th century the most politically prominent problem of energy security was protecting oil supplies, vital for the modern armies and economies" (Cherp, 2011: 2).

Hence, considering this sovereignty perspective, it can be stated that the first three aforementioned definitions of energy security stem from this first perspective and all of them are influenced by political science and related disciplines such as public policy, security theories, international relations and global governance studies. The core

question within this literature is "who controls energy resources and through which mechanisms" (Cherp, 2011: 3).

Although it is not the main focus of this essay, a reference to some of the theories within the political science and international relations field that worked with the notion of energy security must be mentioned.

The Regional Security Complex Theory is one of the theories that can be classified as part of this first perspective on energy security. This theory was developed by academics such as Barry Buzan as part of the Copenhagen School for security studies, a branch within the international relations studies. Even though it was not a direct field of study of this theory, the tacit implication of the importance of energy security added to the changing notion of the classical concept of security focused on military issues (Elbassoussy, 2019), especially after the end of the Cold War.

Within its framework, this theoretical approach draws attention to the fact that the concept of security is a social and political construction: the idea of what is classified as a threat (e.g. a national security threat) is forged by the political elite in charge. Therefore, it is "the existence of amity and enmity relations between energy supplier and consumer countries that creates terms such as positive and negative energy interdependency" (Mammadli, 2012:20).

Another theoretical framework that emerged within the sovereignty perspective was the liberal perspective, which gives a greater importance to institutions within the international sphere of global governance and non-state actors, and a lesser importance to Nation states (Cherp & Jewell, 2011).

The second perspective that emerged within the study of energy security is the robustness perspective, which has its genesis in the economic field of study. In terms of origin, just like the sovereignty perspective, it dates back to the latter half of the 20th century.

This second view on energy security coincides precisely with the liberalization policies of the 1980's, including the liberalization and deregulation of the energy market. In a way, this new perspective reshaped and recreated the notion of energy security presented by the sovereignty perspective, which was thought to be outdated, and it meant to "depolitize energy supply and thus make it less vulnerable to the types of politically motivated disruptions" (Cherp, 2011: 4).

Within this frame of thinking, energy is no longer a public good or a political goal, being considered as a market good. That's why the terms used to define the concept of energy security are also distinct to the ones used by the sovereignty perspective, terms such as "economic welfare", "price" and "affordability" (Cherp & Jewell, 2011). A good example of a definition of energy security that utilizes this type of terms is the definition used by the International Energy Agency (IEA), according to which "energy security is defined in terms of the physical availability of supplies to satisfy demand at a given price" (Winzer, 2011:4).

As a result, this second stream of academic thinking is heavily influenced by the notions of supply and demand of neoclassical economics, so "the prices of oil, natural gas, or other resources will be determined by where the forces of supply and demand meet" (Ozdamar, 2010:1418). This branch of neoclassical thinking can be found in the work of authors such as Morris Albert Adelman, who claims that national governments have no influence in the process of price establishment in the oil markets, which means that market forces prevail (ibid).

In addition to its focus on supply and demand forces, neoclassical literature also makes reference to the energy market externalities that arise through public intervention and to "energy markets that fail to internalize all costs and benefits" (Ozdamar, 2010:1420).

Within the robustness perspective, there are four branches of literature that refer to the energy market externalities, these branches being: Organization of the Petroleum Exporting Countries (OPEC) and its market influence, USA's monopsony power, indirect costs of market power, and the link between oil imports costs and military expenditures (Ozdamar, 2010).

The last perspective on energy security to be mentioned is the resilience perspective, which stems from scientific fields such as natural science and engineering. This is not a dominant perspective within the energy security research, but it is still an important theoretical contribution as it draws attention to the fact that energetic resources are limited.

As such, within this perspective arose the "Limits theory", which claims that an ever-growing population, constant economic growth and sustainability of energy resources cannot be held together in the long term: the term "peak oil" became a

widespread notion that is still debated within the academic community, along with the impact of energy resources on climate change (Cherp & Jewell, 2011).

Another contribution of this line of thinking to the energy security debate was the vulnerability of technical systems, which was reinforced, for example, by several nuclear power plants' failure in the last few decades, and other possible technical failures that could, potentially, be caused by either human mistake, terrorist plots, natural disasters, or other technical reasons. For this reason, the "scientific and engineering thinking has shaped the policy response formulated in terms of technical standards regulating backup generation capacities" (Cherp, 2011: 4), and it changed the lenses through which energy security is analyzed: instead of conceptualizing it from the perspective of ownership and control of energy supplies, it focuses on the technical weaknesses of energy systems and how these could be minimized.

As it was noted, the two dominant perspectives on energy security are the sovereignty perspective and robustness perspective. As such, the two are usually intertwined and a synthesis of the two is possible, though the resilience perspective should not be cast aside either. The following figure summarizes all of them and represents the possible synthesis between the three theoretical assumptions:

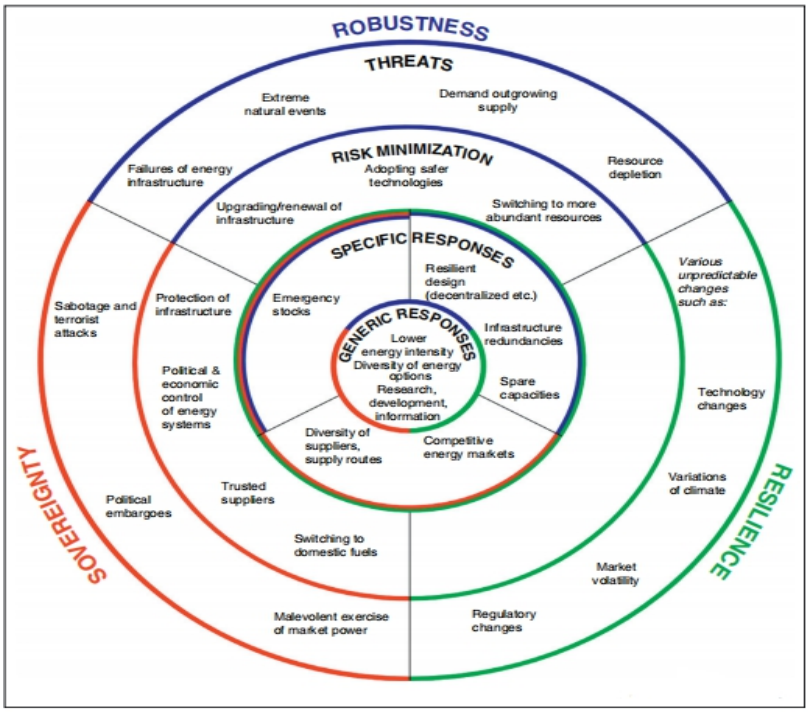

FIGURE 1: Perspectives on energy security
Source: A. Cherp & J.Jewell (2011)

Going back to one of the authors mentioned in the beginning of this chapter and that defined the concept of energy security, David Deese affirmed that there are two elements to the notion of energy security, one being the economic element "which represents all set of actions that affect quantity and reliability of domestic energy supplies" (Elbassoussy, 2019: 326), and a political element that "includes actions that affect external energy supplies" (ibid). For David Deese, there is a close relationship between the two spheres "because any problems may face domestic supplies will create more pressure on increasing imports, and that will impose more threats to national security of the state" (ibid).

Another example of this dual perspective are the bureaucratic politics model and public administration literature, which study the interconnection of markets and domestic politics, focusing on themes such as elite decision making, short-term volatilities, prices and other components. The accomplishment of these models is "the combined analysis of political and economic factors that shape foreign policy decisions" (Ozdamar, 2010:1421).[1]

After overviewing the vast array of different perspectives that shaped the concept of energy security, with each perspective doing so in its own way, we can conclude that defining what is energy security is a delicate issue, that there is no consensus, and that perceiving it from an isolated theoretical point of view gives an incomplete understanding of it. "Generally, the theoretical literature agreed on the controversial nature of energy security concept, as it lies in an overlapping area between politics, economics, technical and environmental aspects, as well as the legal dimensions governing the circulation and energy transfer processes" (Elbassoussy, 2019: 323).

[1] For a more detailed description of these models, see Özdamar, Ö. (2010). *Energy, Security, And Foreign Policy.*

3.THE EUROPEAN ENERGY REALITY - GENERAL ASPECTS

In the present chapter, the current European energy *status quo* will be presented: the goal of such analysis is to reach a general understanding of the energy security issue in Europe and to understand how the EU is conditioned in the strategies it may follow in the future.

In broad terms, the European Union is a net importer of energy, as it imported 58% of its consumed energy in 2018. By looking at its energy mix, which accounts for both imported and internally produced energy, the dominance of fossil fuels (petroleum products, natural gas and solid fossil fuels such as coal) in the EU energy use is quite evident: the latter represent 74% of its total consumption, whereas renewable energy and nuclear energy represent the remaining percentage of the energy mix within the EU, with 14% and 12% respectively (European Commission, 2020e).

As for the rate of dependency of each EU Member State, this rate varies from country to country. The following figure showcases this dependency for both the EU and for each State in 2018:

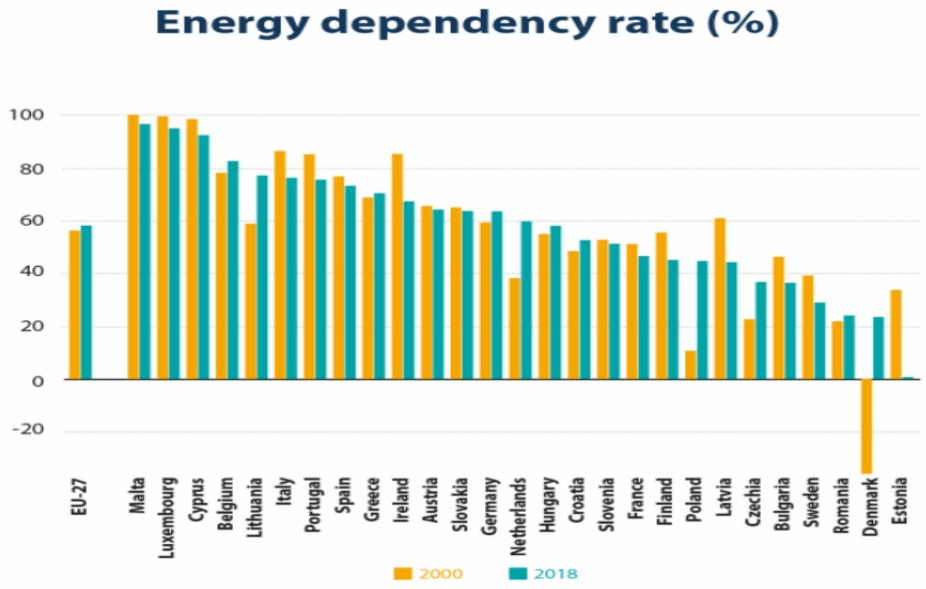

FIGURE 2: Energy dependency rate (%) in the EU
Source: European Commission (2020e)

As this figure portraits, there's a noticeable heterogeneity between every Member State: on one edge, we have chronically dependent states such as Malta, Cyprus and Luxembourg that import the entirety or almost the entirety of their energy supplies, and on the opposite edge we have countries such Estonia and Denmark, countries that have an energy dependency rate below 20% in 2018.

Another conclusion that can be drawn from figure 2 is that 14 out of 27 EU countries have a dependency rate above 60%, which means that half of EU States import more than half of their energy resources.

One final fact this graph translates is that from 2000 to 2018 there have been heterogeneous changes in terms of reduction of the dependency rate for each Member State, for there are countries where the dependency rate decreased significantly (e.g. Estonia and Sweden) and countries where the rate increased (e.g. Lithuania, Poland), but when we look at the average change of this rate on a European level, we can see that there's a slight increase.

Despite the clear hegemony of fossil fuels in the share of energy consumption on a European level, the use of this energy source varies from Member State to Member State, which means that fossil fuels represent different percentages of the energy mix of each of the 28 Member States. The following figure portraits this variation of energy use in terms of sources per each EU country:

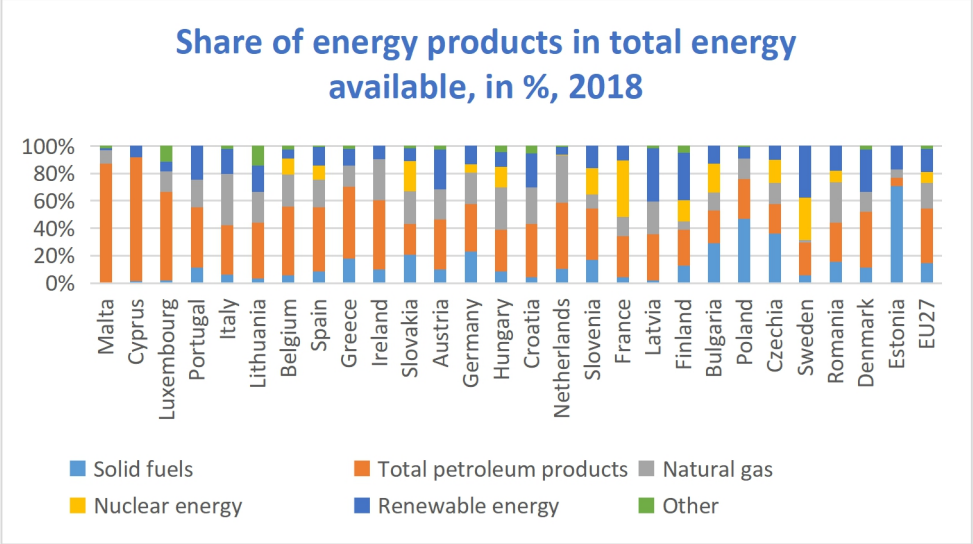

FIGURE 3: Share of energy products in total energy available, in % (2018)

Source: Own elaboration based on European Commission (2020e)

According to the information above, there's a noticeable difference in the energy mixes of the EU Member States: Cyprus, for instance, doesn't have a diverse energy mix because almost 90% of its energy mix is composed of petroleum products, Estonia *idem,* as almost three quarters of its energy mix is made out of solid fossil fuels; France's energy mix is comparatively more diverse than the two aforementioned ones, even though almost three quarters of it is composed by nuclear energy and petroleum products, representing 40,4% and 31,4% of the total mix respectively; Other countries such as Latvia and Sweden have a 40% use of renewable energy within their national energy mixes, whereas the rest of the countries have a relative mix of the 6 energy sources presented in the graph;

As for the EU, its mix, in broad terms, doesn't have a single dominant energy source. Notwithstanding, it is still highly dependent on fossil fuels in general as they represent 74% of the European energetic needs, as it was mentioned earlier.

What concerns the sources of imports of fossil fuels (petroleum products, natural gas, solid fossil fuels), the EU is dependent on a small number of foreign suppliers:

In 2018, almost two thirds of the extra-EU's crude oil imports came from Russia (30 %), Iraq (9 %) and Saudi Arabia, Norway, Kazakhstan and Nigeria (7 % each). A similar analysis shows that almost three quarters of the EU's imports of natural gas came from Russia (40 %), Norway (18 %) and Algeria (11 %), while almost three quarters of solid fuel (mostly coal) imports originated from Russia (42 %), the United States (18 %) and Colombia (13 %).

In European Commission (2020e).

Having this information in mind, it can be noted that the EU-27 is very much dependent on fossil fuels, for the latter represented roughly 2/3 of the energy consumed in the Union, of which the majority is imported and supplied by a very small number of commerce partners, in particular Russia.

4. HISTORICAL OVERVIEW AND LEGAL FRAMEWORK

4.1. Historical overview

As it was demonstrated in the last chapter, the European Union as a whole is highly dependent on non-renewable sources for its energy satisfaction, sources that are mainly supplied by the Russian Federation. Despite the existence of such a dependence, speaking with a single voice in the international community in matters of energy supply is one of the main strategies that is still absent within the EU.

Even though a common supranational mechanism is absent in general terms, energy was one of the guiding concerns behind the genesis of the European project: in the post-war period, the first brick was laid with the creation of the European Coal and Steel Community (ECST) in 1951. The main purpose of the latter was to avoid another conflict on a continental scale by tying together into a common regional market the production of the main sources responsible for fueling warfare in the 20th century, coal and steel. In the eyes of the proponents of the European Coal and Steel Community, this would be the first step to bring together long-time continental foes, Germany and France, and it would give rise to gradual supranational policy making in Europe.

Besides its initial goals, such as the reduction of tariffs and increase of trade of the two products between the six members, the project was to include other energy sources such as oil and nuclear energy, which would now cast a shadow over the importance of coal for energy purposes.

Despite this desire, the six countries that joined the ECST only managed to formulate the European Atomic Energy Community (EAEC) in 1957, with the European Economic Community being formulated in the same year.

Later on, the "Merger Treaty" of 1965 unified the institutional nature of the three Communities, of which 2 were energy based. But a proper common energy market was still lacking and "despite the importance of European support for coal and nuclear policies, promotion of these energies remained a competence of states" (Belyi, 2003: 355).

The fact that coal's importance was in decline and oil use was on the rise would add to the hardship of a common stance on energy:

In the beginning of the 1950's, coal accounted for more than 80 percent of the total energy consumption of the original six member states of the EC. The oil's share in the energy consumption was just 10 percent. Nevertheless, by the 1970's coal's share in Europe's fuel mix decreased considerably by 25 percent, while with oil accounting 60 percent of primary energy consumption.

In Mammadli (2012), p. 26

This meant that the six Member States of the European Communities (EC) shifted from coal energy supplies available on a North-West European regional level to oil supplies from geographically distant regions.

With the accession of three new Member States (UK, Ireland and Denmark) in 1973, the 1970's oil shocks, and later on the 2nd expansion of the European Communities in the 1980's to Southern Europe with the accession of Portugal, Spain and Greece, the notion of a common position on energy became even more chimeric.

Even so, efforts were drawn in order to bring Europe together in terms of energy, having in mind an intergovernmental and extra-European approach that led to the formation of a link with the rest of the Western developed nations: still in the 1970's and with the rise of the oil shock of 1973, the International Energy Agency (IEA) was formed on a intergovernmental level within the Organization for Economic Cooperation and Development (OECD), of which the EC Member States were part of.

It was mainly created as a way to deal with the monopoly on energy supply of the OPEC, and its general goals can be described as following:

The maintenance and improvement of systems for coping with the disruptions of oil supply; the promotion of rational energy policies in a global context; the management of a permanent information system on global markets; the improvement of energy supply through a diversification of suppliers (by source and by region); policy influencing energy demand reduction (or 'demand side' policy) by suggesting energy taxation; research on renewable energy sources and energy conservation.

In Belyi (2003), p. 355

Even though the IEA didn't spring as a regional political entity solely on a European level, it did influence the partaking of common energy-based policies within the EC, as for example the Emergency Strategic Reserves plan, which was a policy created on a IEA level but binding within the EU, being "Europe's institutional response to the embargo imposed by Arab countries" (Mammadli, 2012:26).

In the 1990's, the EC's Member States were involved in another energy project with an informal nature know as the "International Energy Forum" (IEF), founded in 1991 as an inter-governmental institution, whose goal was the negotiation between energy ministers of the main producing and consuming countries of fossil fuels.

From the perspective of the European countries, supranational decision-making within the IEF was left aside as they preferred to "act at the Common Foreign and Security Policy level, without losing or transferring their own sovereignty" (Belyi, 2003:357).

Another energy project which was also formulated in the beginning of the 1990's was the Energy Charter Treaty (ECT): "the idea of establishment of a European Energy Community was proposed by Dutch Prime Minister Ruud Lubbers at the Dublin European Council in June 1990" (Mammadli, 2012:27). Its purpose was the promotion of foreign energy investments, free commerce in energy materials and products based on the World Trade Organization's (WTO) principles of non-discrimination and transparency, free energy transit through pipelines and grids and energy efficiency. Such intergovernmental effort brought together not only former socialist republics of Eastern Europe (such as Romania and Poland, for instance), but also Post-Soviet Central Asian States rich in energy resources into common energy strategies with a legal framework, which was materialized with the transformation of the Charter into a Treaty in 1994 (ibid).

Still in the last decade of the 20th century, another initiative was formulated on a European level known as the "White Paper on Energy Policy", being considered the genesis of the European energy strategy, focused on diversification of energy supplies, competitiveness and environmental security.

The last initiative worthy of mention with an inter-governmental/multilateral nature was the Kyoto Protocol of 1997. Contrary to the previously mentioned energy strategies, the Kyoto Protocol was not focused on energy supply security or price variations but

mostly on environmental concerns, dealing with the reduction of greenhouse gas emissions.

Within the EU, the Kyoto goals of greenhouse gas reductions consolidated the European policy on energy security with the creation of the European Union Emission Trading Scheme (ETS) in 2005, which is a mechanism responsible for the regulation of greenhouse gas emissions.

From the point of view of theoretical lenses, the aforementioned energetic projects can be classified through the three perspectives introduced in the first chapter: the ECST can be analyzed through the theoretical inputs of the sovereignty perspective, as its main concern was a political one, the IEA could also be seen through the same perspective because its creation stemmed from political worries over the shortage of supply from the OPEC countries, the formation of both the IEF and the ECT could be explained by the robustness perspective since competition and price stability are great concerns. As for the White Paper on Energy Policy, this project synthesizes all of the 3 theoretical contributions. Finally, what concerns the Kyoto Protocol and the ETS and since both have a sustainability background, the resilience perspective is the one that focuses on this type of analysis.

Nevertheless, these energy projects still fall short when compared to a European common energy strategy.

4.2. Legal framework in the Energy Market

The strategy aimed for the completion of the Common Energy Market does not operate in a legal vacuum. As to understand the work in progress, one ought to understand the legal framework that marks it.

In terms of the main legal instruments that concern this matter, the EU's action is guided through the principles of solidarity, subsidiarity, equality, non-discrimination and transparency, principles that are enshrined in the European law.

The three main ones worth mentioning in the context of the common energy market are the principles of conferral and subsidiarity (distinct but very close principles), equality, and non-discrimination.

The first two principles that guide the EU's governance can be found in Article 5 of

the Treaty on European Union (2016): its basic underlying principle is that the EU operates "only within the limits of the competences conferred upon it by the Member States", which means that the ones that were not conferred to the Union remain within the sphere of action of the Member States. What concerns the competences conferred to the EU by the Treaties, the Union exercises the said competences only if its action is more effective than the action taken upon the Member States at a central, regional or local level, which translates into the principle of subsidiarity. This means that the principle of conferral limits the EU's competences, whereas the principle of subsidiarity oversees the use of the conferred competences in question.

The second one, the principle of equality, is a general postulate that is mentioned in both core treaties of the EU, the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU, 2016): Article 4.2 of the TEU encompasses this principle on a Member State level ("The Union shall respect the equality of Member States before the Treaties") and Article 9 of the same treaty encompasses it on a individual, civil level ("In all its activities, the Union shall observe the principle of the equality of its citizens...").

The last principle mentioned can be found in the TFEU in Article 18, which mentions that "any discrimination on grounds of nationality shall be prohibited".

Along with these general principles, the energy agenda is also described in article 4, paragraph 2.(i) of the TFEU as a shared competence between the Union and Member States, and in the article 194 of the same treaty (this last article is part of Title XXI of the TFEU, the latter being introduced with the Treaty of Lisbon in 2009, which established the shared competences between the EU and Member States in the field of energy) stating that the "Union policy on energy shall aim, in spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks";

It is such decades-old initiatives and today's legal framework that condition the Union's action in this matter. The way the EU can harvest benefits within this unfinished task and the efforts it has been making in the last few years will be analyzed in the next chapter.

5. CURRENT STRATEGIES

5.1. The unbundling process

The EU and its Members States have been trying to put in practice a series of common strategies amongst them, though a great problem still prevails: the main issue that restricts the existence of a complete common energy market in the EU is the fact that the "EU members have been developing their own energy policies, depending on geopolitical interests, their resources and production, their specific needs and diplomatic relations with suppliers and transit countries" (Mammadli, 2012: 34), dealing on a bilateral level on matters of energy because the energy policy is still seen as a sensitive subject that remains a monopoly of the State, which is why the energy issue remains a shared competence between the Member States and the Union from the legal point of view.

Another issue (which is intertwined with the issue above) that challenges the common energy market is the existence of national-based vertical integrations with an oligopolistic nature in production, transmission, and distribution of energy: in Germany, for example, the companies E.ON and Ruhr both dominate 60% of the German energy market, as for Gaz de France in the French market, partaking more than 70% of it in 2007 (Silva, 2007).

To undo these concentrations, it is necessary to establish legislative measures that allow for a liberalization process based upon the principles previously mentioned, equality and non-discrimination, which is what the EU tried to accomplish with the "Third Energy Package" in 2009.

The main goal that this legislative project tried to achieve with was the process of "unbundling", which is a process of separation of production, transmission and distribution of electricity and natural gas. The unbundling strategy is a core measure to allow companies to compete on equal terms in several European national markets and avoid undesired vertical integration.

But was this legislation fully respected by Member States? Taking as an example Germany, which has over 800 electricity providers, "the majority of the country's electricity is still generated by four big energy companies: E.ON, RWE, Vattenfall and EnBW" (Deloitte,2015: 78), producing 73% of electricity in Germany in 2012.

As for energy transmission system, the latter operates through the four Transmission System Operators (TSO) that exist in the country, of which only one is owned by the German company "EnBW". These TSO's used to be in control of the main energy generators in Germany, and three of them have now been separated from the latter. The fact that only one out of four existing transmission infrastructures is dominated by a national-based, energy-generating company indicates that the energy market, within the sphere of transmission, was indeed unbundled.

As for energy production and distribution, the unbundling has been hardly achieved, since the 4 companies that dominate almost two thirds of the country's production are the same companies that own shares in the more than 900 distribution system operators, according to the Deloitte's report "Energy market reform in Europe" in 2015.

The second Member State with the largest energy market after Germany is France, a country whose energy market is a concentrated one: the state-owned company "Electricité de France" is the main actor in terms of generation, transmission and distribution of electricity, as it owns the transmission system operator (the latter is known for the acronym "RTE") and the distribution network operator (known for the acronym "ERDF"). According to Deloitte, along with CNR (part of GdF-Suez) and Eon France, Electricité de France generates more than 95% of electricity in France.

As for Belgium's case, it is relatively similar to the German energy market reality: the country's electricity, for example, is dominated by two main producers, Electrabel and Luminus.

What concerns the only TSO in Belgium, the latter is held by the Belgian state-owned "Elia", and the country's Distribution System Operators (DSO) are numerous and their shares held by local municipalities, which adds to the market's deconcentration.

One last example is the Iberian Peninsula energy market, as Spain's and Portugal's energy markets were integrated in the late 2000's. In this market, Endesa and Iberdrola dominate almost 50% of the market's energy generation.

In Spain, "Red Eléctrica de España (REE) is the single transmission system operator, and is neither involved in power generation nor supply" (Deloitte, 2015:124), and there is relatively big number of DSO's (more than 50), but the most crucial ones are owned by the main electricity generation companies, which showcases the market's

concentration.

By looking at these examples, it is clear that, in some cases, the unbundling process is not respected and that some markets are still highly concentrated and dominated by a small number of companies, which can be partly explained, for example, by the high cost in terms of investment in transmission infrastructures. This adds to the notion of the TSO as a natural monopoly.

Nevertheless, the EU Member States that are still lagging behind ought to mitigate the existence of these vertical integrations in the said field and let alternative operators manage the transmission side and take care of the distribution side of energy by complying with the unbundling legislation, which should also mitigate the energy production companies' ownership of shares in the downstream activities of the energy market.

The unbundling strategy is also a key policy to mitigate Russia's influence in the European energy market: Russia's energy giant Gazprom has taken advantage of the relative liberalization (liberalization without proper regulation/unbundling) of the European energy market by expanding its operations in downstream activities in the gas market (distribution, transport, storage and marketing). "This resulted in a multiplication of activities along the gas chain, a benefit not enjoyed by EU energy companies in Russia" (Bros, 2014:11).

The complete unbundling, which foresees that the owner and operator of the transmission infrastructure should be the same legal entity, separated from entities involved in production and distribution of energy, though proposed by the European Commission, was met with distrust by several actors, and so another two alternative models were drawn from which Member States could choose: the Independent System Operator (ISO), and the Independent Transmission Operator (ITO).

The ISO model allows for vertically integrated entities to own transmission infrastructures, but there has to be a separate, independent company that takes care of the operation of the transmission system.

As for the ITO, this model allows for energy producing enterprises to own and operate the transmission infrastructures, but they ought to do so through a subsidiary.

If such models are to be materialized within the liberalization of the energy market, they must be implemented along with a strong regulatory framework, as "effective

regulation will determine the success of liberalization" (Gratz, 2009:79). This is a crucial step to avoid an excessive control of both upstream and downstream activities by Gazprom and other European companies.

5.2. The long-term energy contracts vs. spot markets paradigm

Along with the unbundling process, the revision and adjustment of gas contracts celebrated between Gazprom and buyers from the EU Member States must be taken into consideration in the liberalization of the European energy market.

Since the 1960's, the provision of Soviet natural gas to Western Europe was characterized by "Long-term Gas Export Contracts" (LTGEC), which means the Soviet Union and the European Communities celebrated contracts of up to 25/30 years of gas supply, usually celebrated on a inter-governmental level. This type of contracts continued to be the dominant trait of the EU-Russia energy trade even after the fall of the Soviet Union, though the average duration decreased from 30 to 15 years between 1980 and 2004 (Konoplyanik, 2012).

Besides its long-term nature supply, LTGEC between the EU and Russia are also known for having an oil-index price formula, giving the close relationship of both natural gas and crude oil as relative substitutes, and the inclusion of destination clauses, which allow Gazprom to keep different prices in different regions of the European Union.

One final trait of LTGEC is their "take or pay" nature: this means that even if a buyer doesn't purchase the said product, he still has to pay a fee (usually lower than the price agreed in the contract).

But given the EU's desire to reformulate its energy market and due to the changes in the world's energy trade, the nature of the LTGEC has been changing for the last couple of years: the oil-peg has been relaxed (the percentage of the oil-pegged gas sold in the European continent decreased from 58% to 52% in 2012), the penalty fee of the take-or-pay clause has been lowered (before 2009, the penalty fee was, on average, 85% but decreased in some cases to 60%), and, as mentioned before, the LTGEC's average duration diminished as well (ibid).

The three main reasons behind all of these changes in the contracts celebrated

between the Russian Federation and the EU Member States are the economic and financial crisis of 2008/2009, which lowered energy demand in the world's markets, the growing supply of LNG from regions like Qatar, and the shale gas revolution in the United States, which decreased demand for LNG on American soil and shifted LNG supplies to the European continent. All of these factors hindered Russia's role as the dominant energy supplier in Europe. Hence, the LTGEC logic has been under pressure and buyers are looking into the advantages of spot markets and their lower prices of energy when compared to long-term contracts.

But are spot markets a silver bullet for Europe's overdependence on Russian gas? There are no perfect solutions, and each decision will come with a trade off. Instead of a pure, rigid long-term contract reality or a system of gas supply based purely on volatile spot prices, the EU countries and its partners should aim for the middle ground, a hybrid system of long-term contracts, where Russia's leverage in its energy supply to the EU is managed by spot prices. This way, the EU buyers may take advantage of spot markets when prices in the latter are lower than the prices and take or pay penalties agreed in the LTGEC.

Even if LTGEC deals are perceived by the EU as a political and economic liability, from the Russian point of view it is seen as a necessary step to safeguard its security of demand, and also as a source of finance for infrastructure development. In the words of Andrey Konoplyanik, "LTGEC is not so much a trade instrument, but is a financial tool needed to develop long-term and highly capital-intensive production and transportation gas projects" (Konoplyanik, 2012:42).

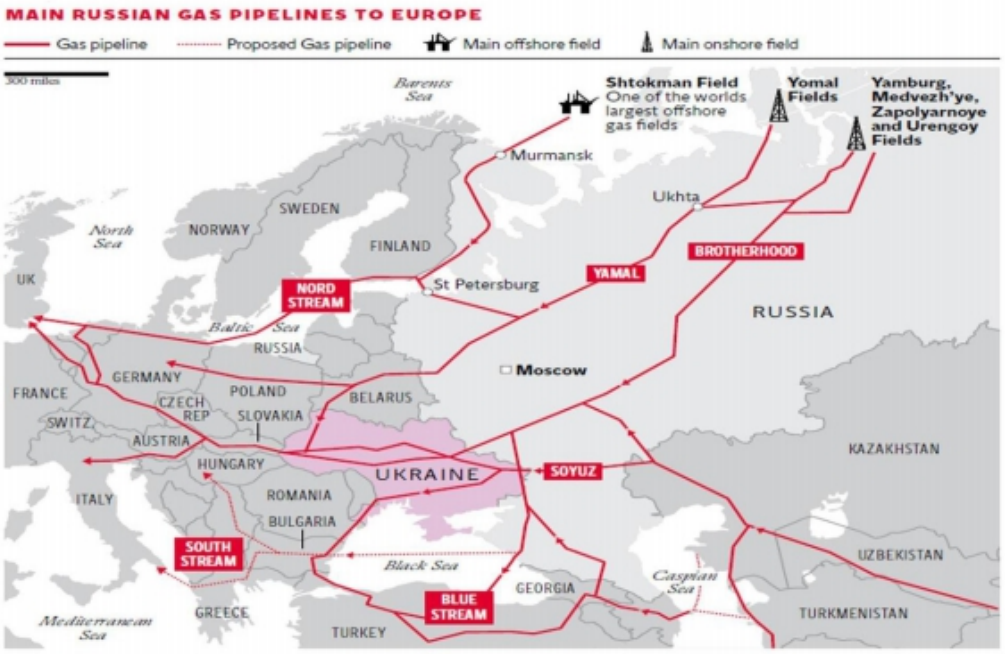

FIGURE 4: Main Russian gas pipelines to Europe
Source: Albano Macie (2016)

This way, the EU faces a delicate issue when striving for a fully liberalized energy market: on one hand, its quest for cheaper spot deals allows it to bargain conditions in energy contracts celebrated with Russia, but on the other hand, the opening of the gas markets in the EU Member States allowed Russia, through Gazprom, to reinforce its position both upstream and downstream sides of the gas value chain, which defeats the purpose of energy independence.

If the EU and Russia are to become equals in their energy relationship and achieve greater interdependence, a compromise ought to be reached. And "a good compromise is when both parties are dissatisfied". As such, Russia and EU countries should work on an energy framework where the EU, for example, could "ease" the unbundling regulation by allowing Gazprom to maintain its presence on both upstream and downstream in some parts of the European market, and, in contrast, the Russian Federation agrees upon some regulatory reciprocity by breaking up Gazprom's gas export monopoly (by making it easier for third party Russian companies to export gas to Europe) and allow EU companies to compete in the Russian market, which would maximize the liberalization of the energy markets process on both sides.

Following this line of thinking, "legal alignment would help limit the risks

associated with investment partnerships, facilitate funding needed to develop new gas fields and associated major infrastructures, and enhance transparency in gas trading" (Finon, 2007:22). If such legal bilateral alignment is impossible to reach, then the EU must pursue all strategies at its disposal to neutralize its liability in relation to Russia.

5.3. Further energy initiatives

One of the strategies that can be used to harmonize a further common stance on energy within the EU, besides the unbundling process and a greater reliance on spot markets already mentioned, is the revision and update of the concept of "Strategic Reserves", which is a mechanism that allows for a specific country to mitigate a disruption of energy flows in case of an energy crisis.

According to António Costa Silva, the main updates that must be made are the increase of the size of the strategic reserves, and the revision of their composition to include bigger gas reserves, as they are mainly oil based (Silva, 2007).

Intertwined with the matter mentioned above, there should also be a greater infrastructure connection in terms of energy transport between the EU Member States. The main concern is the construction of liquefied natural gas (LNG) terminals, since, in the words of António Costa Silva (ibid), Europe's energy consumption of natural gas will increase in the coming years. This author believes that an estimate of 10 to 12 new LNG terminals will be needed to meet the growing European demand of this energy source.

The investment in the development of energy transport infrastructures was estimated in 200 billion euros according to the European Commission, in a time period from 2014 to 2020. With this estimated investment, the European Union intended to finance 27 gas-related projects and 6 electricity-related ones (European Commission, 2014).

In 2014, the European Commission affirmed that "about half of these projects should be finished by 2017 whilst the remaining projects have a planned commissioning date of up to 2020" and that a huge portion "of these critical projects are located in Eastern Europe and in South Western Europe which would help to end the energy isolation of Portugal and Spain"(Commission, 2014:10). In hindsight, we can see that the majority of the natural gas projects predicted in the "Communication from the

Commission to the European Parliament and the Council" in 2014 (European Commission, 2014) have not been finished (with the exception being the completion of the Slovakia-Hungary gas interconnection, the Finland-Estonia interconnection, and the Klaipeda-Kiemena pipeline upgrade). A similar retrospective can be applied to the electricity projects: phase 1 of the NordBalt and Lithuania-Poland interconnections are completed, whereas phase 2 for both projects are still under progress; the Estonia-Latvia third interconnection will start its operations on 1 January 2021 (European Commission, 2020b), while the rest of the projects listed by the European Commission back in 2014 have not been materialized. The following map illustrates both gas and electricity projects that have been completed in 2019, with red and blue lines respectively:

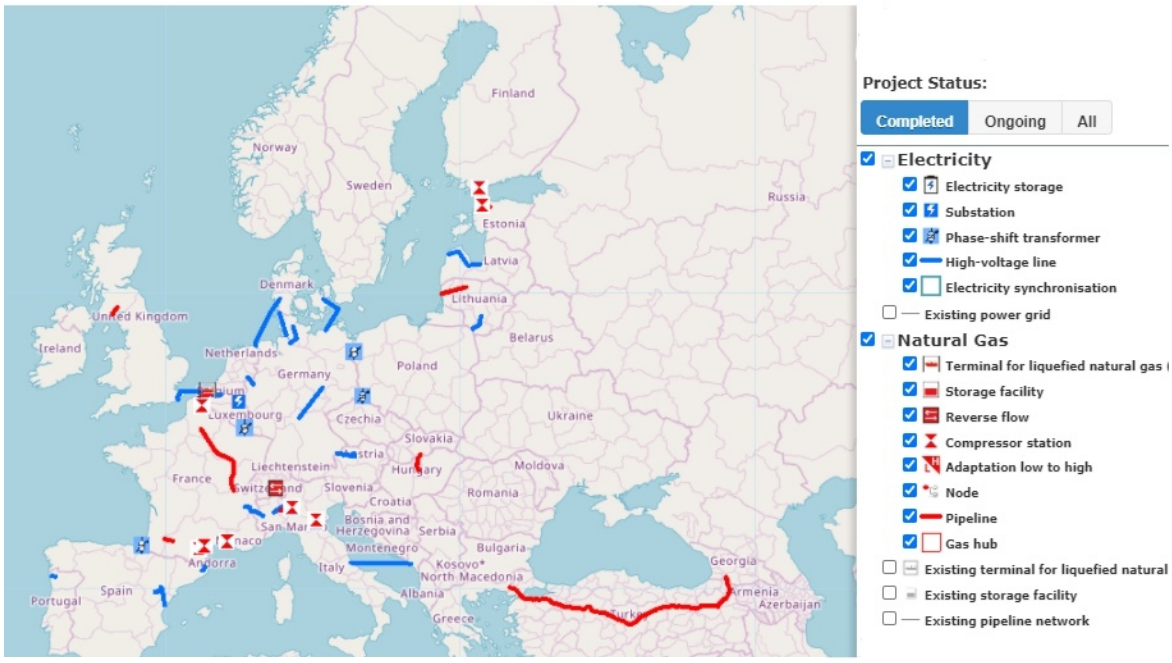

FIGURE 5: Gas and Electricity projects completed in 2019
Source: European Commission (2019a)

Besides the betterment of gas and electricity infrastructures and its investment mentioned above, the way to achieve a greater interconnection between Member States has been a matter of debate, though a bottom-up solution has been identified as the ideal form to do so.

In the same "Communication from the Commission to the European Parliament and the Council" in 2014, the European Commission stated that "a regional approach has been and will be decisive for the integration of the European energy market".

A similar notion is addressed by Rafael Leal-Arcas, stating that regional energy strategies are positively perceived by Member States as they "generally prefer to work with their neighbors, with whom they tend to share common interests and hardships, rather than at the EU level, where it is often difficult to reach a common position" (Leal-Arcas, 2015: 19).

As a matter of example, a few regional energy projects with a bottom-up nature can be identified: for instance, Slovakia, Bulgaria, Romania and Hungary were involved in the construction of a gas pipeline in 2015, whose purpose was to connect the regions of Central and Southeast Europe.

Another example is the Nord Pool project initiated in the early 2000's, a regional energy cooperation with the goal of uniting the electricity markets of Northern European countries, such as Norway, Sweden, Finland, Denmark, and other surrounding European countries.

One last mention of a bottom-up initiative is the formation of the "Iberian Electricity Market" (known as "MIBEL") and the "Iberian Gas Market" (also known as "MIBGAS"), whose objective was the integration of the energy markets of Portugal and Spain in the early 2000's as well.

It is such regional strategies that allow the blossoming of a broader European Energy Market, and make it possible to "harmonize prices and operations as well as optimize cross-border capacity allocation. Thus, market integration favors the emergence of «European» energy prices" (Leal-Arcas, 2015: 20).

Apart from that, such geographically based projects are also far more advantageous than a top-down "one size fits all" approach within the scope of the Common Energy Market because the different geographic regions that cohabit in the EU exhibit different concerns and perspectives over the notion of energy security itself, which also reflects the materialization of the principle of subsidiarity within the EU's legislation.

If we go back to the energy security theoretical triangulation of environmental sustainability, market competitiveness, and security of supply presented in the beginning of this dissertation, we can observe that these different theoretical lenses also shape the different geographical approaches aforementioned.

Therefore, "the security of natural gas supply is a more pressing concern in Central and Eastern Europe, whilst environmental considerations tend to underlie the energy

policies of most EU Member States located in the North-West of the continent" (ibid). The different concerns of the European States and the way these regional strategies blossomed is also the materialization of the EU's cornerstone of legal framework, the principle of subsidiarity, as it encompasses the energy related decision-making on the lowest level of political ruling.

Based on this logic, the EU has also developed beyond-borders initiatives that include non-EU countries, as it is the case of the Energy Community. This organization, which was founded in 2005, has been formulated to include the non-EU-members of the Balkan region and important transit-countries of natural gas to the EU, such as Ukraine.

The Energy Community seeks the standardization of rules in the energy markets of the non-EU countries that joined the organization in question, but, despite its efforts "within this regional platform, it is characterized by soft energy governance" (Leal-Arcas, 2015: 15).

A second beyond-borders initiative created by the EU along with its neighbouring countries is the Euro-Mediterranean Energy Partnership, which represents a strategic importance for the Union: not only because of the importance of energy suppliers such as Algeria, but also thanks to the growing influence of regions like Israel and Cyprus, where new natural gas fields were discovered in the last years.

These two last partnerships mentioned are also going to be crucial for the EU's goal of diversifying its supply routes, and in specific its goal of freeing itself from the overwhelming influence of Russia's carbonates supply.

5.4. The Green side of the European energy strategy

Going back to the notion of energy security based on the axis of environmental sustainability, the investment in green strategies is also a matter of concern within the formation of the European Energy Market. This axis can be summarized with a triangulation of energy efficiency, reduction of greenhouse gases (GHG) emissions and investment in sources of renewable energy.

The investment in this type of a green strategy serves a double-purpose: on one hand, it allows the EU to fulfill its growing concerns around climate change issues, and

on the other hand, it also give it extra leverage to deal with Russia's monopoly on energy supply, for it seeks the maximization of intra-EU energy production.

As such, the environmental side of the European energy security must focus on the combination of renewable energy production, decarbonization , and efficient use of energy. These three axis of the European green effort were materialized in the "2020 package" in the year of 2007: this means that the main objectives is a 20% cut in greenhouse gas emissions compared to the levels of emissions in 1990, 20% of renewable energy in the final energy consumption, and 20% improvement in terms of energy efficiency by 2020. According to the European Commission, the growing use of renewable energy sources makes it possible for the EU to save 30 billion euros a year in fossil fuels imports.

And, again, the environmental aspect of Europe's energy security requires a sensitive overlook, without resorting to a "one size fits all" point of view. A good example of this would be the concerns over the reduction of GHG emissions, "with a target year that might differ from country to country taking into account national diversity" (Pellerin-Carlin, 2017: 36), as it was demonstrated previously, the environmental concern on the matter of energy security is usually of greater importance to Member States located in the North-Western part of Europe.

Besides setting different targets on carbon emissions based on a geographical aspect, and besides setting a long-term goal for the Union as a whole (the EU is striving for a 40% decrease of carbon emissions by 2030, for example), this type of targets ought to be complemented with corresponding strategies.

One example of such a strategy would be the investment in a greener transport sector through the use of electric vehicles (and, of course, the remaining infrastructure that will allow to switch from vehicles fueled by fossils to electric vehicles, such as charging points), since the transport sector is 94 % dependent on fossil fuels, and 90% of these fuels are imported.

In regards to the EU's green agenda goals, the 20% improvement for the 2020 goal seems to be an achievable one for the EU, as "by 2012, it had already achieved a 17.9 percent reduction of greenhouse gas emissions" (Siddi, 2016: 6) and by 2016, the reduction represented 22.4 percent compared to the carbon emissions levels of 1990 (Elbassoussy, 2019). The following table summarizes the EU's goals for carbon

emissions beyond its 2020 deadline:

TABLE I

EU'S GREEN TARGETS

2020 TARGETS	EU	FRANCE	GERMANY
Greenhouse gas *	20%	20%	40%
Renewables *	20%	23%	18%
Energy efficiency *	20%	20%	20%
2030 TARGETS	**EU**	**FRANCE**	**GERMANY**
Greenhouse gas	40%	40%	55%
Renewables	27%	32%	30%
Energy efficiency	27%-30%	20%	/
2050 TARGETS	**EU**	**FRANCE**	**GERMANY**
Greenhouse gas	80%-95%**	75%	85%
Renewables	/	/	60%
Energy efficiency***	/	50%	50%

Source:Pellerin-Carlin, T. & Vinous, J. (2017)

Another important step would be the revision of the Emissions Trading System, by lowering the carbon emissions cap. This way, the 2030 target for the GHG decrease of 40% would be easier to achieve: "this would have an impact on the price of emissions and provide incentives to invest in renewables and green technologies" (Siddi, 2016: 9).

As we can see, the three axis of the European green goals within a broader energy security strategy are intertwined due to the fact that all of them allow the EU to meet its climate change obligations, support its need of a greater supply of endogenous energy resources, and give rise to the creation of new and sustainable growth jobs.

6. CONCLUSIONS

Since the end of the Cold War in the early 1990's, the world has seen an acceleration of the regional integration processes induced by the opening of the former socialist regimes, which allowed for the integration of regions like China and the former Soviet Union in the globalized market-economy, and for the formalization of the European Union into a concrete supranational entity.

For the latter, the post-bipolar world also meant new opportunities located in the East, with the majority of the former socialist countries of Eastern Europe being welcomed into the organization. With such an expansion new challenges arose, one of them being the revision of the notion of energy security in the new era and the possibility of improving it within the supranational logic of the EU.

Throughout this text, the betterment of the notion of energy security and policy homogenization between the EU and its Member States have been given special attention, which allows to draw a set of conclusions.

First, what concerns the way European leaders approach the notion of energy security, this approach has been focused on every aspect of the different academic perspectives on energy security: regulation and liberalization as a base for a competitive and efficient energy market, sustainability concerns materialized in the investment in renewable energy and green strategies, and political worries over the diversification and dependence on few regions of import of fossil fuels have all been balanced out for a complete European energy security strategy.

With respect to the attempt to liberalize and regulate the energy market in Europe, the EU has not yet fully achieved this goal given the fact that vertical integrations are still dominant in terms of energy generation, transmission and distribution, in some markets more than others. As such, the unbundling strategy set by the European Commission has not been fully respected, which means that the EU's energy security in this specific field has not yet been completely achieved.

As for the investment in clean energy and tackling GHG emissions, the EU has succeeded in the latter goal since it managed to overcome its goal in reducing the carbon emissions levels in 20% compared to the ones of 1990.

As for the share of renewable energy in the total mix, this goal is almost

accomplished: the latest data from 2018 showcases that the EU has succeeded in doubling the use of renewable energy between 2004 and 2018, from 9,6% to 18,9% respectively, and it showcases that 12 out of the 27 Member States have managed to reach or surpass the 2020 target for the use of 20% of renewable energy in their energy mixes, while 4 Member States are less than 1% away from reaching their target, 9 countries are between 1% and 4% away, and only 3 Member States are 4 or more percentages points from the 20% target (European Commission, 2020c).

What concerns the energy efficiency target for 2020, the EU has also been successful in tackling this objective, for the final energy consumption in 2018 was 3,2% above the target set (European Commission, 2020a).

Overall, the EU has had a positive result in this field and managed to reinforce its energy security strategy within this realm, as not only did it manage to make progress within its green agenda, it also did so by resorting to unique action plans for each Member State and left aside a "one size fits all" approach.

As for the achievement of a greater security of supply, the conclusions are not crystal clear: there has been an internal gas production decrease of 8% in the first quarter of 2019, an increase of LNG imports by 126% in the same quarter when compared to the first quarter of 2018 (European Commission, 2019b), with Russia providing 21% of the total LNG imports. This has been possible due to the falling spot prices, which allowed the EU to buy cheaper energy, although the volume of its imports has grown. The most recent data from the first quarter of 2020 showcases that the Russian Federation was still the main supplier of gas to the EU, representing 40% of the EU's imports in said quarter (European Commission, 2020d). This indicates that despite the constant controversies surrounding the relations between the EU and the Russian Federation, Russia maintains its position as the preferred energy supplier of Europe. This fact is also confirmed by the construction of the new Nord Stream 2 that, despite America's opposition and threat of sanctions, is going to cement the EU's (specifically Germany's) hunger for Russian gas.

In short, the path that the EU will follow within its energy agenda will depend upon its capacity to adapt to the challenges in the international affairs arena, especially its capacity to adapt to the post-pandemic world order, and upon the desire of its Member States to transfer its sovereign decision-making capacities within the realm of energy to

EU institutions, which means that its energy security strategies will be discussed on the fine border between supranational integration and intergovernmentalism, and between a compromise of its Member States and how willing the latter will be in delegating more power to the European institutions.

BIBLIOGRAPHY

Belyi, A. (2003). *New Dimensions Of Energy Security Of The Enlarging EU And Their Impact On Relations With Russia*. [online] Available at: <https://www.researchgate.net/publication/238315157_New_Dimensions_of_Energy_Security_of_the_Enlarging_EU_and_Their_Impact_on_Relations_with_Russia> [Accessed 7 April 2020].

Bros, A. (2014). *Gazprom In Europe: A Business Doomed To Fail?*. [online] Ifri.org. Available at: <https://www.ifri.org/sites/default/files/atoms/files/ifri_rnr_18_gazprom_aurelie_bros_july2014.pdf> [Accessed 5 July 2020].

Cherp A, Jewell J. (2011). *The three perspectives on energy security: intellectual history, disciplinary roots and the potential for integration*, Current Opinion Environmental Sustainability. Available at:< www.sciencedirect.com> [accessed 7 April 2020]

Deloitte (2015). *Energy Market Reform In Europe*. [online] Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/gx-er-energy-market-reform-in-europe.pdf> [Accessed 15 May 2020].

Elbassoussy, A. (2019). *European Energy Security Dilemma: Major Challenges And Confrontation Strategies*. [online] Available at: <https://www.researchgate.net/publication/335269379_European_energy_security_dilemma_major_challenges_and_confrontation_strategies> [Accessed 10 December 2019].

European Commission (2014). *Communication from the Commission to the European Parliament and the Council,* May 2014 [online] Available at: <https://www.eesc.europa.eu/resources/docs/european-energy-security-strategy.pdf>

[Accessed 9 July 2020].

European Commission (2018). *Quarterly Report On European Gas Markets*. [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/documents/quarterly_report_on_european_gas_markets_q1_2018.pdf> [Accessed 5 August 2020].

European Commission (2019a). *Projects Of Common Interest - Interactive Map*. [online] Available at: <https://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.html> [Accessed 20 December 2020].

European Commission (2019b). *Quarterly Report On European Gas Markets*. [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/quarterly_report_on_european_gas_markets_q3_2019.pdf> [Accessed 5 August 2020].

European Commission (2020a). *Energy saving statistics: Statistics Explained.* [online] Available at: <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/19548.pdf> [Accessed 5 August 2020].

European Commission (2020b). *Estonia-Latvia Third Interconnection Starts Operation On 1 January 2021 - Innovation And Networks Executive Agency - European Commission*. [online] Innovation and Networks Executive Agency - European Commission. Available at: <https://ec.europa.eu/inea/en/news-events/newsroom/estonia-latvia-third-interconnection-starts-operation-1-january-2021> [Accessed 27 December 2020].

European Commission (2020c). *Renewable Energy Statistics - Statistics Explained*. [online] Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php/Renewable_energy_statistics> [Accessed 5 August 2020].

European Commission (2020d). *Quarterly Report On European Gas Markets*. [online] Available at: <https://ec.europa.eu/energy/sites/ener/files/quarterly_report_on_european_gas_markets_q1_2020.pdf> [Accessed 5 August 2020].

European Commission (2020e). Shedding light on energy on the EU. 2020. *Shedding Light On Energy On The EU: Where Does Our Energy Come From?*. [online] Available at: <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2a.html> [Accessed 16 May 2020].

Finon, D. and Locatelli, C. (2007). *Russian And European Gas Interdependence: Can Market Forces Balance Out Geopolitics?*. [online] Halshs.archives-ouvertes.fr. Available at: <https://halshs.archives-ouvertes.fr/halshs-00129618v2/file/Cahier41bis.pdf> [Accessed 26 June 2020].

Gratz, J. (2009). *Energy Relations With Russia And Gas Market Liberalization*. [online] Available at: <https://www.researchgate.net/publication/237517028_Energy_Relations_with_Russia_and_Gas_Market_Liberalization> [Accessed 7 May 2020].

Konoplyanik, A. (2012). *Russian Gas At European Energy Market: Why Adaptation Is Inevitable*. [ebook] Energy Strategy Reviews, pp.42-56. Available at: <https://www.researchgate.net/publication/257742381_Russian_Gas_at_European_Energy_Market_Why_Adaptation_is_Inevitable> [Accessed 8 July 2020].

Leal-Arcas, R. (2015). *The Creation Of A European Energy Union*. [online] Available at: <https://www.researchgate.net/publication/278373560_The_creation_of_a_European_Energy_Union> [Accessed 2 December 2019].

Macie, A. (2016). *SEGURANÇA ENERGÉTICA EUROPEIA, NO CONTEXTO DA PROTECÇÃO DOS DIREITOS FUNDAMENTAIS*. [online] Cedis.fd.unl.pt. Available at: <http://cedis.fd.unl.pt/wp-content/uploads/2017/10/CEDIS-working-paper_DSD_Seguran%C3%A7a-energ%C3%A9tica-europeia-no-contexto-de-prote%C3%A7%C3%A3o-dos-direitos-fundamentais.pdf> [Accessed 4 April 2020].

Mammadli, I. (2012). *European Energy Security: Prospects Of The Caspian Basin*. [online] Lup.lub.lu.se. Available at: <https://lup.lub.lu.se/student-papers/search/publication/2971205> [Accessed 4 April 2020].

Özdamar, Ö. (2010). *Energy, Security, And Foreign Policy*. [online] Academia.edu. Available at: <https://www.academia.edu/688870/Energy_Security_and_Foreign_Policy> [Accessed 7 April 2020].

Pellerin-Carlin, T. and Vinous, J. (2017). *The Governance Of The Energy Union: A New Relationship Between European Citizens and Decision Makers.* [online] Institutdelors.eu. Available at: <https://institutdelors.eu/wp-content/uploads/2018/01/ch1-makingtheenergytransitionaeuropeansuccess-study-pellerincarlinfernandesrubio-june2017.pdf> [Accessed 8 July 2020].

Siddi, M. (2016). *The EU'S Energy Union: A Sustainable Path To Energy Security?*. [online] Available at: <https://www.researchgate.net/publication/301703308_The_EU's_Energy_Union_A_Sustainable_Path_to_Energy_Security> [Accessed 8 July 2020].

Silva, A. (2007). *A Segurança Energética da Europa.* IDN - Revista Nação e Defesa, [online] (Nº 116 - 3ª Série), pp.31-72. Available at: <https://comum.rcaap.pt/bitstream/10400.26/1231/1/NeD116_AntonioCostaSilva.pdf

> [Accessed 16 May 2020].

Treaty on European Union (2016). *Consolidated Version Of The Treaty On European Union*. [online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12016M/TXT&from=EN> [Accessed 8 July 2020].

Treaty on the Functioning of the European Union (2016). *Consolidated Version Of The Treaty On The Functioning Of The European Union*. [online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12016E/TXT&from=EN> [Accessed 8 July 2020].

Winzer, C. (2011). *Conceptualizing Energy Security*. [online] Repository.cam.ac.uk. Available at: <https://www.repository.cam.ac.uk/bitstream/handle/1810/257227/cwpe1151.pdf?sequence=1> [Accessed 7 April 2020].