



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**EUROPEAN ENERGY SECURITY AND NORD STREAM:
A CASE STUDY OF THE NORD STREAM PIPELINE, ITS
OPPORTUNITIES AND RISKS FOR EUROPE, AND ITS
IMPACT ON EUROPEAN ENERGY SECURITY**

by

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June 2011

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 2011	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE European Energy Security and Nord Stream: A Case Study of the Nord Stream Pipeline, Its Opportunities and Risks for Europe, and Its Impact on European Energy Security			5. FUNDING NUMBERS	
6. AUTHOR Ulf Balzer				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB Protocol number: N/A.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT This thesis focuses on the interpretation and implementation of energy security in the European context concerning the Nord Stream pipeline. Nord Stream has been, and still is, highly debated across Europe because of its enormous opportunities for Europe—it will give Europe access to the largest known reserves of gas worldwide—and because of the risks involved. Nord Stream provides Russia with an option to gain an advantageous position over Europe concerning energy policies, thus raising the fears of Nord Stream's critics that Russia might use this leverage to promote its own position in political areas other than energy. It is, therefore, essential to analyze the opportunities and risks associated with Nord Stream for Europe, and to give thought for future mechanisms of European energy security that will assist in maximizing opportunities and minimizing risks.				
14. SUBJECT TERMS Energy, Energy Security, European Union, Russia, Nord Stream, natural gas, pipeline			15. NUMBER OF PAGES 131	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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SECURITY**

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN SECURITY STUDIES

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

This thesis focuses on the interpretation and implementation of energy security in the European context concerning the Nord Stream pipeline. Nord Stream has been, and still is, highly debated across Europe because of its enormous opportunities for Europe—it will give Europe access to the largest known reserves of gas worldwide—and because of the risks involved. Nord Stream provides Russia with an option to gain an advantageous position over Europe concerning energy policies, thus raising the fears of Nord Stream’s critics that Russia might use this leverage to promote its own position in political areas other than energy.

It is, therefore, essential to analyze the opportunities and risks associated with Nord Stream for Europe, and to give thought for future mechanisms of European energy security that will assist in maximizing opportunities and minimizing risks.

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LIST OF ACRONYMS AND ABBREVIATIONS

AG	Aktiengesellschaft
bcm	billion cubic meters
BP	British Petroleum
BRIC	Brazil, Russia, India, China
CDU	Christian Democratic Union
CEO	Chief Executive Officer
CFSP	Common Foreign and Security Policy
CIS	Community of Independent States
CO ₂	carbon dioxide
CRS	Congressional Research Service
CSDP	Common Security and Defense Policy
ECSC	European Coal and Steel Community
ECT	Energy Charter Treaty
EEZ	Exclusive Economic Zone
EIA	United States Energy Information Administration
ESS	European Security Strategy
EU	European Union
EUR	Euro
FPC	Foreign Policy Concept
GBP	British Pound Sterling
GDP	Gross Domestic Product
HR	High Representative
IEA	International Energy Agency
kWh	kilowatt per hour
LNG	Liquefied Natural Gas
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organization
NSS	National Security Strategy

OECD	Organization for Economic Co-Operation and Development
Ofgem	Office of Gas and Electricity Markets
OPEC	Organization of Petroleum Exporting Countries
R&D	Research and Development
TEN-E	Trans-European Energy Networks guidelines
tcm	trillion cubic meters
UK	United Kingdom
U.S.	United States
USA	United States of America
USD	U.S. Dollar
USGS	Unified System of Gas Supplies

ACKNOWLEDGMENTS

I would like to thank my co-advisors, Professor Robert Looney and COL (G.S.) (GAF) Dirk Rogalski, who provided the necessary and essential knowledge that I needed to engage in such a vast topic as European energy security.

My special thanks are dedicated to my wife, Raphaela, who supported me during my entire stay at the Naval Postgraduate School—and even sacrificed her job in order to accompany me in California. She gave me the full support that I needed, especially during some tough times.

Raphaela, thank you for your understanding and support!

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

The European Union consists of 27 states with a total population of approximately 500 million people.¹ The assumption is that the overall population of the EU will decline within the next decades, while its need for energy will not. Europe's natural energy resources are declining.² Already, the EU is importing about 54% of its energy (gas and oil),³ which makes the EU one of the largest importers of fossil energy resources.

Even if one of the EU goals is to develop more efficient alternative energy sources (wind, solar, etc.), none of these sources—no matter how promising they are—has developed to a stage on which EU can rely as a major source of energy. Given the EU's dependence on foreign imports of fossil energy, the construction of the Nord Stream pipeline between Russia and the EU is the latest attempt to secure its energy supply. Establishing an additional major supply line, however, is only one aspect of improving energy security. In a worst-case scenario, the dependence on a major supply line like the Nord Stream pipeline may actually decrease energy security. It may also provide the supplier, in this case Russia, with the leverage to influence European decision making in policy areas that are well beyond the scope of energy security.

This situation leads to the following research question: What impact does the Nord Stream pipeline have on European energy security?

¹Eurostat, *Eurostat - Tables. Graphs and Maps Interface (TGM) table: Total population*, 11 March 2011, <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&language=en&pcode=tps00001&tableSelection=1&footnotes=yes&labeling=labels&plugin=1> (accessed 6 April 2011).

² European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, Market Observatory (Luxembourg: Office for Official Publications of the European Communities, 2008), 19.

³ *Ibid.*, 16.

To answer this question, it is necessary to define the terminology of energy security and how it is reflected in European energy security policies and strategies.

Energy security is much more than just having secured the income of foreign fossil energy resources by signing contracts and building the infrastructure. Contracts, reliability of partners, the possibility of corruption, and the protection of the necessary infrastructure are also part of energy security. So, energy security, just as security and defense policies, must become a pillar of the whole European security concept that shelters us as people and our way of life. The demand for a common European energy policy is inevitable.

Once the dimensions of energy security have been analyzed in general, the Nord Stream pipeline project will be examined to determine the related opportunities and risks for Europe. This will lead to an assessment to what extent and in which way the Nord Stream pipeline impacts European energy security.

B. IMPORTANCE

Worldwide energy demand is rising with declining fossil resources. In addition, the distribution of energy will dramatically change within the next twenty years, making it even more difficult for individual Western nations, and Europe as a whole, to compete against China, Russia and India for energy resources. Even if the European Union is willing to reduce its greenhouse gas emissions by 20% by 2020 and increase the overall share of renewables by 20% by 2020,⁴ fossil fuels will still be the main source of energy in the next twenty to thirty years. Europe's fossil resources, however, are declining and the dependence on imported resources is increasing. Therefore, it is very important to analyze and understand how the European Union plans to secure its energy supply in the future.

Russia is known to have the largest proven reserves of natural gas. And, it lies in close proximity to Europe. As a consequence, it is not surprising that the EU is trying to

⁴ European Commission, *20 20 by 2020 – Europe's climate change opportunity* (Brussels: Commission of the European Communities, 2008).

gain access to Russia's gas fields to secure its future energy demands. Both players, the EU and Russia, profit from this arrangement, since Europe needs to guarantee its security of supply, whereas Russia is dependent on Europe's security of demand. Overall, the direct linkage between Russia and the EU through the Nord Stream pipeline could be a win-win situation.

But Russia is also known to use its energy resources as a political weapon. And it is uncertain whether Russia is going to use Europe's energy dependence to influence political opinions and goals. The Nord Stream pipeline might increase Russia's leverage to influence European decision-making in policy areas well beyond energy security. The European Union's Common Foreign and Security Policy (CFSP) is still immature, and it remains ambiguous if CFSP is capable to meet the risks that are involved with the construction of the Nord Stream pipeline. Energy security has become a very complex issue and a coherent and comprehensive approach is needed to address the many inherent challenges.

C. PROBLEMS AND HYPOTHESES

Energy is a scarce resource. The International Energy Agency (IEA) estimates that the overall demand for energy will increase by 45% by 2030, and the fuel mix will still consist of 80% fossil fuels, such as coal, oil, and gas.⁵ There are two main reasons for the rising demand for energy: population growth and economic growth, mainly in non-OECD (Organization for Economic Co-Operation and Development) states and regions such as Africa, China, and India. In fact, the economic growth rate of OECD states is expected to decline from 3% to 2% by 2030, according to the IEA. Still, OECD states and non-OECD states will demand more energy in the future, but at different rates. It is expected that the demand of non-OECD states will increase by 84%, whereas the demand of OECD states will increase by "only" 14% by 2035.⁶

⁵ International Energy Agency, *World Energy Outlook 2008: Executive Summary* (Paris: International Energy Agency, 2008).

⁶ U.S. Energy Information Administration, "International Energy Outlook 2010," July 2010, www.eia.gov/oiaf/ieo/index.html.

Europe is expected to have a future decrease in fossil energy demand due to European and national policies, future requirements on energy efficiency, and the promoting of renewables as a source of energy. The above numbers will still have a major impact on European energy politics, since the amount of imported energy will continue to increase.⁷ The expected massive shift of today's existing energy trade routes towards China and India might create severe problems for Europe in guaranteeing its energy supply in the future.

The European Union is not a nation. It is a supranational organization consisting of 27 member states, each with different interests, cultures, and values. Decisions on foreign policies and strategies (including defense policies) are made unanimously. This slows down the decision-making process since it is difficult to find a consensus between all member states on important issues.⁸ Presently, energy security is mainly dealt with the European Commission's Directorate-General for Energy. The importance of energy security has also been recognized by the CFSP; however, all strategic questions concerning energy and energy security are dealt with by the European Commission. So far, energy security has not evolved as a major topic for CFSP. However, the coordination and cooperation between these two powerful EU institutions is critical to properly address energy security in the future.

Several achievements have been made so far, like the European parliament's acceptance of a common energy policy in 2007,⁹ but the Council of the European Union did not approve a common energy policy. The promised goal of the EU to increase the share of renewables in the fuel mix to up to 20% by 2020 also contributes to reducing the risk of energy dependence. In addition, the "Green Paper" of the European Commission from 2006 already provides the EU with "a European Strategy for Sustainable,

⁷ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*.

⁸ The implementation of the Lisbon Treaty took more than two years.

⁹ Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, Seminar Summary (London: Chatham House (www.chathamhouse.org.uk), 2008).

Competitive and Secure Energy.”¹⁰ Still, 56% of the energy demand will need to be imported; therefore, the EU has to ensure these imports through increased diversification of supply lines and securing large energy resources outside the EU for its convenience. The construction of the Nord Stream pipeline, with its determined goal to ensure energy flow from Russia directly towards the EU, is a step in this direction.

The Nord Stream pipeline is a pipeline project that is built to supply the EU with Russian gas. The Nord Stream AG is a joint venture of several European energy enterprises—BASF (15.5%), E.ON (15.5%), Gasunie (9%), and GDF Suez (9%)—and one Russian energy company, Gazprom (51%).¹¹ Since the pipeline is independent of any transit states, no further trading agreements had to be made. The success of the project depends on the reliability of Russia and Gazprom as the energy exporters and producers, and the EU and their enterprises as the importers and consumers. Incidents like the disruption of energy flow from Russia to the EU due to the Ukrainian gas crisis of 2006 will not be repeated because Nord Stream avoids transient countries.

Russia is known to use energy as a political weapon. The Ukrainian gas crisis and the Russian-Georgian conflict are proof of this fact. Needing to receive 30% of its oil and gas consumption, the EU is highly dependent on Russia.¹² The fact that Gazprom holds 51% of the shares of Nord Stream, and is extremely well connected to Moscow and the Kremlin, underscores this issue.¹³ If Russia is planning on using energy as a political tool against the EU, it has the power to do so.

The political and governmental setup of the EU is both a curse and a blessing. The EU sees itself as a civilian normative power, and puts great emphasis on this unique fact. The EU has a great amount of civilian assets available to assist in foreign crisis management. Furthermore, the EU is a great economic power and a highly reliable trading partner, but can also use its economic power in terms of financial aid and

¹⁰ European Commission, *Green Paper: A European Strategy for Sustainable, Competitive and Secure Energy*, report (Brussels: Commission of the European Communities, 2006).

¹¹ Nord Stream AG, 2010, www.nord-stream.com (accessed 22 Jul 2010).

¹² Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*.

¹³ Victor Zubkov is the Chairman of the Gazprom Board of Directors and the First Deputy Prime Minister of the Russian Federation (www.gazprom.com)

investments or, if needed, sanctions to promote its values and interests. When it comes to the EU as a coercive power, the EU is still in its developing stages. The European Security Strategy proves that threats and risks for the stability of the EU have been identified, but that there is still no consensus about how to effectively deal with the identified threats and challenges. Energy security is mentioned only once in the European Security Strategy 2003, and then more as a sideline.¹⁴ In addition, the power of the EU is limited, because most member states are not willing to give up sovereignty in favor of the EU in areas of great national importance. This includes foreign policies—an area where the EU could make a great step forward by implementing the provisions of the Lisbon treaty—and energy security.

It is important for European nations to realize that future efforts concerning energy security must regard the EU as a whole, and should not be dominated by national interests. This coherent approach will enlarge energy security for all member states and will assist in facing possible negative aspects arising out of specific energy projects such as the Nord Stream pipeline.

D. METHODS AND SOURCES

This thesis follows the format of a single case study. It analyses aspects of energy security in Europe and then focuses on the Nord Stream pipeline, its opportunities and risks, and its impact on European energy security. The Nord Stream pipeline project has been chosen because it is considered highly controversial in Europe and it highlights some of the major challenges of energy security.

The main reason for this controversial discussion is, on the one side, the great opportunities the pipeline provides for the European Union, giving it direct access to the largest known gas reserves in the European area, and therefore securing the import of natural gas for at least twenty to thirty years. On the other side is the great dependency on Russia, which is feared to be an unreliable energy-trading partner and one that would

¹⁴ The European Union, *A secure Europe in a better world: European Security Strategy*, intergovernmental document (The European Union, 2003).

possibly use energy as a political tool to influence European politics. Also, the setup of the Nord Stream consortium, with Gazprom being the largest stockholder, has raised the concerns of the pipeline critics.

It is not the goal of this thesis to question the overall setup of European energy security because it includes a lot more than just one pipeline. But the possible impact of the Nord Stream pipeline on European energy security, in combination with an enlarged dependency on Russia, justifies the focus on the project and requires an assessment of how European energy security and its key principles are impacted by the Nord Stream pipeline project, and what the consequences for the European energy security system could be.

E. THESIS OVERVIEW

The main objective of this paper is to determine the dependency of the EU on Russia and whether the EU is prepared, equipped and willing to use adequate means to reduce the risk of the Nord Stream pipeline being used as an energy weapon. To do so, it is necessary to identify to what extent the energy security principles—diversification, resilience, information, reality of integration, globalization, protection of the supply chain—are implemented in European strategies and to measure these principles against the Nord Stream pipeline project, as an example of European-Russian energy relations.

The thesis is divided into several chapters. Chapter II is used to provide the reader with an overview of energy security, its key principles and its relevance. Further on, the implementation and interpretation of energy security within the European context is highlighted, with comparisons to other institutions and nations, and their definition, interpretation and acceptance of energy security.

The third chapter provides an overview of the external and internal European energy market, the role of depicted EU member states and their market behavior, and the role of the EU organs to guide and influence European energy politics.

The fourth chapter focuses on the Nord Stream pipeline, its setup, the players behind the scenes and its opportunities and risks for Europe. Within the presentation of

the Nord Stream pipeline, the role and impact of Russian politics concerning the Nord Stream pipeline is also highlighted. This is necessary to gain a better understanding of the likelihood of Russian politics to directly intervene in the energy market.

The fifth chapter of the paper consists of an analysis what impact the Nord Stream pipeline imposes on the overall aspect of European energy security. It is important to assess the opportunities and risks of the pipeline project and to what extent they are reflected by the interpretation and implementation of energy security key principles within the European energy security context.

The information gained from the analysis is used in the sixth chapter to draw conclusions regarding the impact of the Nord Stream pipeline on European energy security, and what work areas need to be addressed by the European Union to increase energy security.

II. EUROPEAN ENERGY SECURITY

A. THE GLOBAL ENERGY MARKET

The global energy market will change dramatically within the next two decades. It is estimated by the International Energy Agency (IEA) that the world energy demand will increase by 45% by 2030 and that 80% of the worldwide consumption of energy still consists of fossil fuels such as oil, natural gas, and coal. The demand of oil is expected to rise at a rate of 1% per year, whereas the overall share of oil will drop from 34% today to 30% by 2030. Natural gas will rise by 1.8% per year to a total share of the energy mix of 22%.¹⁵

The largest-growing sector in the energy mix is believed to be energy generated out of renewable technologies such as solar, wind, geothermal, tide and wave. Their estimate of growth lies at 7.2% per year, leading to a total share of the energy mix from 1% today to 4% in 2030.¹⁶

There are two main reasons for the rising demand for future energy. The first one is worldwide population growth. According to the IEA, the world population is estimated at 8.2 billion in 2030. Population will grow the most in Africa, China, and India. North America and Europe's growth will be much smaller; in some areas, such as Russia, Germany and Italy, the overall population is expected to decline.¹⁷ It is interesting to note that the fastest rate of population growth is not allocated to the wealthiest states of today, but with emerging economies like China and India.¹⁸

The second reason for the growing demand of energy is economic growth. Despite a decline of the economic growth rate of OECD states, non-OECD states are expected to have an increase in economic growth from 2.5% to 4.8%. China's economic

¹⁵ International Energy Agency, *World Energy Outlook 2008: Executive Summary*, 4.

¹⁶ *Ibid.*, 5.

¹⁷ *Ibid.*, 63.

¹⁸ *Ibid.*, 63.

growth will decline from 8.8% today to, still very impressive, 6.1% in 2030. India, Africa, and Brazil will continue to rise (6.4% for India).¹⁹

The worldwide rate of growth of population and economic power are valid arguments to explain the growing demand for energy. What is most interesting, however, is which regions grow the most. Today, energy consumption between OECD states and non-OECD states is nearly equal. But the U.S. Energy Information Administration (EIA) believes that by 2035 the energy consumption of non-OECD states will grow by 84%, whereas OECD member states will have an increase of only 14%. This has influence on the global energy market and the world economy since, in addition to the rising worldwide predicted energy demand, an overall decline of natural resources is already present. In the future, fewer energy resources will be available against a growing demand. On its own, this is already a great threat to the worldwide energy market.²⁰ Combined with the shift of greater energy demand of non-OECD states, and the need to establish new energy markets, refineries and trade lines, energy security will be one of the major topics now and in the future, so a thorough picture of energy security and its impact is essential.

B. ENERGY SECURITY

The terminology of energy security is not new. It has always been present alongside energy demand and supply, but it did not always get the attention it requires. Starting from the industrial revolution, where energy was only available to the industry sector and a few wealthy households, the implicitness of energy became more and more present since energy was made available to a growing number of societies. Today, seen from the first-world perspective, it is unthinkable of not having electricity and hot water in everyone's household and not having the required transportation means for everyday mobility. And the growing implicitness of energy will continue to grow in every corner of

¹⁹ International Energy Agency, *World Energy Outlook*, 64–66. Table 1.3 illustrates the economic growth by referring to Real GDP.

²⁰ Gal Luft and Anne Korin, *Energy Security for the 21st Century: A Reference Handbook* (Washington D.C.: Library of Congress Cataloging-in-Publication Datat, 2009), 2.

the world. But what is energy security? Is it just the market equilibrium between energy supply and demand, or is there a little bit more to it? Several authors have tried to answer this question in the past.

1. Electricity and Transportation

According to Luft and Korin, each “country’s definition of energy security has much to do with their own particular energy situation and how they view their vulnerabilities to energy supply disruptions.”²¹ They further argue that the distinction between the two primary energy usage sectors, electricity and transportation, is a necessity to define the particular energy situation. Most vulnerable are those countries that need to depend on energy imports in both usage sectors, such as the European Union (EU), which is discussed in more detail later on. The only dependence on resource imports for power generation gives at least the opportunity for diversification, since the fuel mix in the electricity sector consists of natural gas, coal, renewables, and nuclear power, whereas oil is the dominant resource for transportation. Diversification is one important key principle in terms of energy security. Through diversification, in regards to different producers and different resources, the possibility of disruption of energy supply can be reduced.²²

2. Producers and Consumers

Besides the distinction between the two primary usage sectors, in defining a particular country’s energy situation, it is also important to highlight a country’s position in the energy market. Is it, in general, an energy consuming or an energy-producing country? A traditional producer views energy security more as “security of demand,” whereas the consumer thinks of energy security in terms of “security of supply,” as mentioned by Luft and Korin and Yergin.

It is the producer’s short-term goal to sell as much energy resources as possible at the highest possible price. In the long run, however, the producer has to find the balance

²¹Luft and Korin, *Energy Security for the 21st Century*, 6.

²²Daniel Yergin, Ensuring Energy Security, *Foreign Affairs* 85, no. 2 (Mar 2006): 69.

between maximizing its revenue and being recognized as a responsible and fair supplier.²³ Several conditions are required to ensure this balance.

At first, only a stable market can guarantee stable prices. Too intense price fluctuations are not in the best interest of either consumers or producers. But a stable market can only be guaranteed when the conditions are given. The existence of an energy producing monopoly will not guarantee a stable market. Russia, for example, has been known in the past to try to “gain primacy over the main pipelines and market channels.”²⁴ According to Luft and Korin, Russia’s attack on Georgia in 2008 was simply to increase Russian control over two strategic important gas pipelines.²⁵ Russia is already the largest energy exporter to the EU and controls large shares of the market, but is it in Russia’s interests to create an energy monopoly? This issue is highlighted in this thesis, in a closer look at Russia and its interpretation of energy security.

Second, a stable energy market must be existent and functioning. A functioning market means a self-regulating market—a market where the price is established through supply and demand. Yergin recommends the stability and existence of a global energy market, when he refers to “only one oil market,” and indicates “for all consumers, security resides in the stability of this market.”²⁶ Moran and Russel state that “strong states are prepared to trust their energy security to the workings of international markets” and this is to be recognized as a “testimony to their faith in the efficiency of those markets.”²⁷ The necessity of a stable market is also recognized by Kalicki and Goldwyn. But, up to now, the global energy market is split. The existing global oil market— where the Organization of Petroleum Exporting Countries (OPEC) is the main player (78% of the worlds proven oil reserves and 40% of global oil production)—allows OPEC to

²³ Luft and Korin, *Energy Security for the 21st Century*, 9.

²⁴ Yergin, *Ensuring Energy Security*.

²⁵ Luft and Korin, *Energy Security for the 21st Century*, 9.

²⁶ Yergin, *Ensuring Energy Security*.

²⁷ Daniel Moran and James A. Russel, *Energy Security and Global Politics: The militarization of resource management* (New York: Routledge, 2009), 5.

influence the oil price to a large extent²⁸—but a global gas market is not yet fully developed.²⁹ So this will continue to be a challenge for energy security.

Third, to be recognized as a reliable and fair supplier, it is essential for the producer to invest in the future of securing the consumer's demand and be able to fulfill that demand. Since worldwide demand continues to rise, the logical consequence would be that supply would have to rise as well. Some believe that this will be an issue in the near future. This is not because the world is running out of energy, but because of a lack of investments. There are yet-to-be-discovered reserves of energy resources that could supply the global demand for the next fifty years. The problem is that these resources are more difficult to exploit today. This includes the exploitation of fossil resources out of harsh, mankind-hostile regions such as the deep sea, or turning towards exploitation technologies that were dismissed before due to high costs such as oil sands. The oil sector is the energy sector that is threatened most by the rising exploitation costs. Another sidelining factor of rising exploitation costs is that the number of states holding the majority of fossil resources will decline as well as the number of companies that are able to afford the large amount of investments needed to exploit fossil resources in the future. So, in the near future, a rising demand, a small amount of energy producing countries and a small amount of multi-national companies will set up the fossil energy market. This future set up will not make life easier in the energy market.

Let's turn to the consumer's side. As has been stated above, the traditional energy-consuming country thinks of energy security in terms of security of supply. It is in the nation's interest to ensure that the demand for energy needed will always be met. For countries that are totally energy independent, this is not a great challenge, but it will be for countries that depend on energy in either one or both usage sectors. For these countries, it is very important to rely on stable market conditions, fair prices and trading partners, and secure energy trade lines. With all these variables, it will prove to be a major challenge for energy-dependent countries. How can energy-consuming countries

²⁸ Luft and Korin, *Energy Security for the 21st Century*, 9.

²⁹ Jan H. Kalicki and David L. Goldwyn, *Energy & Security: Toward a New Foreign Policy Strategy* (Washington D.C.: Woodrow Wilson Center Press, 2005), 10.

secure their energy income? Do “guidelines” exist that assist in controlling the variables an energy-dependent country has to take into account to secure the demanded energy income?

Luft and Korin (Luft and Korin 2009) identified two principles that consumers need to be aware of concerning securing energy demand—diversification of energy supplies and the creation of mechanisms to withstand sudden supply disruptions, such as the International Energy Agency (IEA) and the OECD.³⁰ Both organizations have been founded to assist consuming countries in sharing their energy resources in times of need and as a counterbalance in the global energy market, in contrast to the organizations of energy producing countries such as OPEC.³¹ Kalicki and Goldwyn have also found diversification important as well as the necessary requirement of new political and economic strategies and coalition building.³² In the introduction of their book, Moran and Russel put great emphasis on the stability of markets and the trust in markets. They raise the question: What needs to be done when market strategies fail? They conclude that it will come to a militarization of energy security—seizure of energy assets, denial of entry to energy assets to rivals, and military protection of the supply chain including the whole energy creating process, etc.³³ It can be argued whether this is a radical perspective or not, but all three above-mentioned sources see the need for more political involvement to stabilize the energy market or be prepared if the stabilization process fails. This includes military means and power projection, even it has not been addressed precisely by all authors.

3. Key Principles of Energy Security

Yergin points out that the current energy security system was set up as an answer to the industrialized nations due to the oil crisis of 1973. At that time, energy-consuming countries were made aware of how dependent they were on oil imports from Arabian oil-

³⁰ Luft and Korin, *Energy Security for the 21st Century*, 10–11.

³¹ Dr. Werner Zittel and Joerg Schindler, *Crude Oil: The Supply Shock*, Report, Energy Watch Group (Ottobrunn: Ludwig-Boelkow-Stiftung, 2007), 81.

³² Kalicki and Goldwyn, *Energy & Security*, 2.

³³ Moran and Russel, *Energy Security and Global Politics*, 7.

exporting states by using energy dependence as a political weapon. As one consequence, the IEA was founded to assist industrialized countries to respond to sudden disruptions of energy income. Other lessons learned were the necessity for the creation of strategic stockpiles, energy conservation and the coordinated emergency sharing of supplies.³⁴ He argues that several principles must be present to maintain energy security in the long run. These principles will now be discussed, in detail, since they include most of the above-mentioned requirements, but will follow along an abstract outline, which makes these principles easier to understand.

a. Diversification

Diversification, as has already been pointed out several times, is the first key principle to ensure energy security in the long run. Seen from the consumer's perspective, diversification can be divided into two parts—diversification of energy resources and of energy suppliers.³⁵ Depending on the composition of a country's fuel mix—for example, the overall energy fuel mix of the EU consists of oil (37%), gas (24%), solid fuels (18%), nuclear (14%), and renewables (7%)³⁶—it is easier for a country to react to disruptions in energy income if the fuel mix is set up in a way that allows the country to rely on other energy resources for a short period of time in order to fulfill the demand for energy by its citizens or, in the worst case, allow strategically important industries to continue to produce. Nations who depend on only one source of energy—such as the United States within their transportation sector³⁷—do not have this opportunity. They need to rely on the second alternative, the diversification of suppliers. Today the U.S. is 60% dependent upon oil imports, where most of the oil is coming from the Middle East.³⁸ Oil income disruption could hurt the U.S. significantly. As a

³⁴ Yergin, *Ensuring Energy Security*.

³⁵ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 19.

³⁶ *Ibid.*, 7, Figure 4 (numbers are from 2006).

³⁷ Luft und Korin, *Energy Security for the 21st Century*, 6.

³⁸ John Deutch and James R. Schlesinger, *National Security Consequences of U.S. Oil Dependency*, Report (New York: Council on Foreign Relations, 2006), 14.

consequence, the U.S. has great incentives to either enlarge the diversification of suppliers or to bind the limited amount of suppliers to the U.S. by other means, which could include military assets, such as military power projection, in exchange for preferential market treatment.³⁹ The EU is no more independent than the U.S. In fact, 54% of its energy resources need to be imported into the EU.⁴⁰

b. Resilience

The second key principle is resilience. Every energy-dependent nation needs to integrate some kind of buffer within its energy security strategy. This could include “strategic reserves, backup supplies of equipment, adequate storage facilities along the supply chain, and the stockpiling of critical parts for electric power production and distribution,”⁴¹ but is not limited to these. Resilience is a difficult task to fulfill since it includes so many different aspects, such as sudden disruptions due to natural disasters, terrorist attacks or political embargos. How can the whole supply chain be secured if it is unknown when, how, and to what extent the supply chain will be disrupted? The rise of possible terrorist attacks against energy-based targets is already a present threat and the massive destruction of Hurricane Katrina in the Gulf of Mexico in 2005 proved the underestimation of natural disasters and their impact on the energy sector.⁴² The uncertainty of such events is the greatest challenge in terms of resilience. To reduce uncertainty to some extent, it is necessary to have, besides reactive instruments, preventive instruments of resilience. If the exact route of a hurricane could be anticipated well in advance, the reactive instruments could be used more efficiently. If the time and place of a terrorist attack is known, then instruments can be made available to prevent the attack. Even if great achievements have already been made, uncertainty remains the largest variable. This continues to be a great challenge for the future.

³⁹ Moran and Russel, *Energy Security and Global Politics*, 7.

⁴⁰ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 8.

⁴¹ Yergin, *Ensuring Energy Security*.

⁴² *Ibid.*

c. Information

Third, the importance of information needs to be mentioned.⁴³ Information is essential and connects all principles. Information reduces the risks of investments. The sharing of information between producers and consumers helps to stabilize markets and prices. Gaining an information advantage assists in securing the supply chain. Information in terms of technological advantage can also contribute to the exploitation of today's unreachable energy resources—such as deep sea drilling—and make the exploitation profitable. Forums need to be present where such information can be shared like the IEA and the OECD. One main function of both organizations is the exchange of information between members. But information itself is a highly valued factor and is not free. Nobody is willing to pass on information without receiving something of similar value in exchange. This does not say that the IEA is nothing more but an information trade market; its pure existence already provides its members with knowledge and power, tools to prevent or react to energy crises. But these can only be provided when the member states are willing to share their information in exchange for a secured energy income. It can always be reduced to a classic win-win situation. And the exchange of information is the basis of every win-win situation.

d. Reality of Integration

Besides importance of information, it is also important to recognize the reality of integration.⁴⁴ No country in the world can be self-sustaining. International trade is important for the growth of the economy and that is a dependent variable to ensure the wealth of society. This applies to the energy market as well. Without a sufficient amount of resources, the energy demands of today's society can never be met. As Luft and Korin stated, “[Transportation] energy makes the world go around.”⁴⁵ Therefore, it is essential for countries to realize that they will be dependent upon other nations in terms of energy, either as a producer to secure the energy demand, as a consumer with regards to sufficient

⁴³ Yergin, *Ensuring Energy Security*.

⁴⁴ Ibid.

⁴⁵ Luft and Korin, *Energy Security for the 21st Century*, 6.

supply and stable prices, or as a nation that seems to be energy independent but has to rely on foreign technology to exploit or further process energy resources. To some extent, they all are connected and depend on each other. This further stresses the point of integration in the energy market. Stable market conditions and stable prices can only be guaranteed through an overall accepted market. Oil, as a good, is only traded on one market, the oil market. It could be argued whether the oil market, in its present setup, could be considered a stable market, but it is a functioning market. It just could use a few more competitors to stabilize the price and reduce its elasticity. And this important fact has to be realized by all consumers and producers.

e. Globalization of Energy Security

Closely connected to integration is the recognition of the globalization of the energy security system as another principle.⁴⁶ The separation of the participants of the energy market into two camps—IEA vs. OPEC; OECD vs. non-OECD; consumers vs. producers—will have to be reconsidered. As mentioned in the first paragraph, the global energy market, including the overall demand of energy, is rising. Whereas the rise of demand in OECD countries will not increase by a large extent, countries like China, India, and Brazil are held accountable for a significant portion of the overall rise in demand. China and India, especially, with their large populations and their emerging economies will become very important players, if they are not already, in the energy market. It would be foolish to deny the fact that these countries will control large portions of the energy market in the near future. Now is the time to integrate them into the energy market and make them part of the energy security system. Otherwise, China, India, and maybe Brazil might create their own energy security system and their own energy market, which would lead to an unstable energy market with unstable prices and an outdated energy security system.

⁴⁶ Yergin, *Ensuring Energy Security*.

f. Protection of the Supply Chain

Last, there is the rising need to protect the entire supply chain.⁴⁷ This has become an increasing need in the last few years, mainly to the rising threat of terrorism. According to Kalicki and Goldwyn, “the internal stability of U.S. suppliers ... and their vulnerability to acts of terrorism are critical factors for U.S. energy and national security.”⁴⁸ Even if this statement reflects the U.S. perspective, it also has a global meaning. Luft and Korin identified terrorism as a large threat to energy security, especially for the power generation and distribution sector.⁴⁹ This can be underlined by Koknar, who identified electric power grids and the gas and oil infrastructure as highly vulnerable.⁵⁰ Since it is often the terrorist’s intention to force a government to agree to terrorists’ interests, targets are often chosen for their strong impact on society. Disrupting the supply chain, by destroying an electric power grid, could have such an impact. Again, there is uncertainty as to when and where an attack could happen. As a preventive instrument, information is needed, but if this fails it is important to have reactive instruments, such as a diverse energy distribution network or backup supply systems.

Moran and Russel have also identified the threat of terrorism, but they do not believe that a terrorist attack against energy-based targets would have the same impact as the attacks from September 11. They argue that those attacks had a high psychological effect on people that influenced them to drastically change their travel plans, which took the airline industry years to recover. They believe that the energy security system—they are referring to the U.S. energy security system—is so diverse and resilient that the effect of an attack against the energy sector would be difficult to compare. According to these authors, people would never reconsider taking other means of transportations to work or to heat their homes.⁵¹ This can be argued, because up until

⁴⁷ Yergin, *Ensuring Energy Security*.

⁴⁸ Kalicki and Goldwyn, *Energy & Security*, 10.

⁴⁹ Luft and Korin, *Energy Security for the 21st Century*, 5.

⁵⁰ Ali M. Koknar, The Epidemic of Energy Terrorism, in *Energy Security Challenges for the 21st Century: A Reference Handbooks*, 18-30 (Washington D.C.: Library of Congress Cataloging-in-Publication Data, 2009).

⁵¹ Moran and Russel, *Energy Security and Global Politics*, 11.

now, people have never been forced to rethink their energy consumption behavior due to a terrorist attack. This has only been achieved through governmental implementations of environmental laws or rising gas prices. But because it did not yet happen, does not mean it cannot happen. Uncertainty again makes it difficult to react or use preventive measures. The need for protection of the supply chain should not just be limited to the possibility of a terrorist attack, even if it is the largest threat.

The protection of the supply chain will also be necessary along the transportation waterways, especially their choke points: the Straits of Malacca, the Strait of Hormuz, and the Suez Canal, to name only a few, as pointed out by Nincic.⁵² The possibility of terrorist attacks at sea is also mentioned, but there is another threat present: piracy. The rise of piracy along the coast of Somalia in the past few years, and the rapid actions taken by the U.S., NATO, and the EU by sending warships into the area to secure safe ship passage, illustrates how much weight industrial nations have put on the threat of piracy. The importance of protecting the supply chain has also been proven in times of conflict. First, the supply chain can be attacked as a military target to weaken the enemy and its power as the Germans did in World War II when they attacked supply ships from the U.S. with goods for England. Only the massive protection of these supply convoys, using warships, made it possible to keep the supply chain running. Second, the denial of energy can be and has been used as a political weapon. In these cases, it is mandatory to protect the supply chain either via military means or via sanctions. No matter what, the supply chain cannot be allowed to break. And, as a last option, military assets can and will be used by nations if all other options have failed, especially the market, as perhaps the most important tool of energy security.

Since fossil energy resources are scarce and demand is rising, the probability of energy becoming a main reason for future conflicts is high. This does not mean that wars in the future will be only about energy, but wars have been fought over energy resources and will continue to be so. That is why energy security is so vital. It is

⁵² Donna J. Nincic, *Troubled Waters: Energy Security as Maritime Security*, in *Energy Security Challenges for the 21st Century: A Reference Handbook*, 31-43 (Washington D.C.: Library of Congress Cataloging-in-Publication Data, 2009).

not just about the possibility of future wars and their reasons, but the probability of war should be taken into account. The global energy market will not help solve all energy issues, but it should be considered a powerful tool in energy security and, therefore, be supported. Energy Security is not just a topic for energy companies and energy lobbyists, but also for society, and especially for nations and their governments. “Energy security is a public good,”⁵³ so it is the nation’s responsibility to face these challenges and ensure energy security by all means—civilian, politically, economically, and militarily.

The topic of energy security is vast, as can be seen in this compromised outline. But it is important to realize the relevance of energy security and understand the principles and how they interact. To sum up, the distinction between the two primary usage sectors—power generation and transportation—is important to identify how vulnerable nations really are in terms of energy disruption. The distinction between consumers and producers is relevant because, otherwise, no clear picture can be drawn about each nation’s specific interest and demand for energy security. The presentation of the principles of energy security—diversification, resilience, information, integration, globalization, and protection of the supply chain—points out the great dimension of energy security and the possibilities nations have to ensure it.

C. ENERGY SECURITY IN AN INTERNATIONAL CONTEXT

1. The United Kingdom

Between the three largest economies of the European Union—Germany, France, and the UK—the UK has the least dependency on imported fossil fuels due to its natural resources in the North Sea. These resources, however, are declining; peak production has been reached and the UK is aware of this.

Within the National Security Strategy of the United Kingdom since 2008, several security challenges have been identified, including competition for energy. This relates to its declining resources and that the UK will very soon have to compete with other

⁵³ Kalicki and Goldwyn, *Energy & Security*, 4.

nations, worldwide, for the remaining natural energy resources. China and India are specifically mentioned as growing markets, with an increasing demand for energy. According to the UK's NSS, this growing demand—global energy demand will be 50% higher in 2030 than it is today—will increase the potential for conflict. “Along with climate change and water stress, it [competition for energy] is one of the biggest potential drivers of the breakdown of the rules-based international system and the re-emergence of major inter-state conflict, as well as increasing regional tensions and instability.”⁵⁴ Already, some nations, like China and Russia, have made energy supply a major topic for their respective foreign policies. Similar to the United States, the UK understood the connection between climate change and energy policy. It is also, therefore, the goal of the UK to tackle climate change by reducing CO2 emissions and increase energy efficiency.

To increase energy security, the UK speaks of an “integrated strategy.” It is designed to ensure energy supplies, reduce the UK's vulnerability to security shocks, reduce tensions from competition for energy resources, and to tackle climate change.⁵⁵ Great emphasis is put on the improvement of the competitive energy market, especially the creation of a global gas market. This will have to include Russia, who the largest gas producer and accountable for half of Europe's gas imports to ensure secure and reliable imports of gas.⁵⁶ This is not surprising, since currently 40% of the UK's domestic energy production is derived from gas.⁵⁷ With its own declining resources, the UK sees a need to strengthen its energy position by competing for energy resources. This includes the diversification of supply, reliability of trading nations and investments. Ten billion GBP are to be invested in modernizing its gas import and storage facilities. In addition, investment in nuclear power plants is encouraged to increase energy independency.⁵⁸

⁵⁴ Office of the Prime Minister, *The National Security Strategy of the United Kingdom*, governmental document (London: Office of the Prime Minister, 2008), 19.

⁵⁵ *Ibid.*, 51.

⁵⁶ Office of the Prime Minister, *The National Security Strategy of the United Kingdom*, 51.

⁵⁷ European Commission, *United Kingdom - Energy Mix Fact Sheet*, January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_uk_en.pdf (accessed 27. August 2010).

⁵⁸ Office of the Prime Minister, *The National Security Strategy of the United Kingdom*, 51–52.

The UK's NSS shows that the UK is aware of the importance of energy security and has managed to put it into the right context within the UK's overall national security strategy.

2. France

The French White Paper on defense and national security, in comparison to the NSS of the UK, is a more defense and military-oriented strategy. It focuses more on present and future military responsibilities and capabilities in order to strengthen French national security. But the White paper also tries to integrate domestic and foreign policies, as well as civilian capabilities.⁵⁹

Energy Security is not addressed, in particular, in the White Paper, but is in context with several important key findings and new security parameters that have been identified. The security of the energy supply has been identified as a priority area for protecting European citizens, and an integral part of France's European ambition, but no future guidelines can be derived from this statement. The French White Paper on defense and national security puts more emphasis on Europe's future military capabilities.⁶⁰

What has been realized is the impact of energy as a risk to evolve as a threat to French national security. Future conflicts are predicted to involve energy and the competition for resources. In addition, energy security is one of the factors where the traditional distinction between domestic and foreign policies vanishes. The global perspective of energy security is believed to be on the same level as international

⁵⁹ Prèsidence de la Rèpublique, *The National White Paper on Defense and National Security*, governmental document (Paris: Prèsidence de la Rèpublique, 2008), 4.

⁶⁰ Prèsidence de la Rèpublique, *The National White Paper on Defense and National Security*, 7–8.

terrorism. Because it influences domestic as well as foreign security policies, comprehensive and integrated strategies are required to meet these challenges.⁶¹

France identified its main area of interest along one major strategic axis—the arc of crisis from the Atlantic to the Indian Ocean. According to the White Paper, this axis is characterized by regional instability, inter-state and non-state violence and the high concentration of energy resources.⁶² By specifically mentioning the high concentration of energy resources along the main strategic axis, the importance of the Middle East for France, concerning energy, is made clear. The White Paper, however, does not include any specific strategies on how to tackle the challenges of energy security and how energy security will contribute to national security. It is unclear why France did not include such strategies in their White Paper, which overall is a very detailed report on French defense strategies at present and in the future. It might be due to the fact that France derives nearly 80% of its electricity from nuclear power plants.⁶³ This puts France in a more comfortable position than other European nations in the realm of energy dependency.

3. Germany

Energy security is an important topic for Germany as Germany's dependency on imported fossil fuels (61.3%) is nearly three times as large as the UK's dependency.⁶⁴ In addition, Germany's climate change goals and the highly debated shutdown of all nuclear power plants by 2022, contribute to Germany's acceptance of the importance of energy security. To be able to ensure the needed base load of electricity in the future, nuclear power plant providers have been granted an extension of 15 years by the government,⁶⁵ a decision that is opposed to the beliefs of a large portion of Germany's population. After

⁶¹ Prèsidence de la République, *The National White Paper on Defense and National Security*, 16.

⁶² Prèsidence de la République, *The National White Paper on Defense and National Security*, 18.

⁶³ International Energy Agency, *Energy Policies of IEA Countries - France 2009*, report (Paris: IEA, 2009), 7.

⁶⁴ European Union, *Europe's Energy Portal*, 2010, <http://www.energy.eu/#routes> (accessed 27. August 2010)

⁶⁵ New Europe, *German nuclear-power plant extension debate going strong*, 5. September 2010, <http://www.neurope.eu/articles/102424.php> (accessed 29. October 2010).

the nuclear catastrophe in Japan, all political decisions concerning the extension granted to nuclear power plants in Germany are on hold again.

The German White Paper of 2006 reflects Germany's view of security policies and the future of the Armed Forces. Contrary to the security strategies of the USA, the UK and France, the German White Paper is not written and published by the office of the head of government [chancellor], but by the Ministry of Defense.

In conjunction with globalization, terrorism, proliferation, etc., energy security has been identified as a risk for German security policies and has been implemented in the strategic context. A secure and sustainable energy supply is of strategic importance, and Germany is aware of the fact that new global challenges, risks and opportunities have to be met. A worldwide increase on energy demands and climate protection are some of the risks, whereas the "necessity in developing countries to improve access to energy" opens economic opportunities for these countries and Germany.⁶⁶

Germany's growing dependency on imported fossil fuels is one of the challenges that have to be met. This can only be achieved through intensive cooperation with producing, transiting and consuming states, including Russia, as Germany's primary source for fossil fuels, the Middle East with its rich energy sources alongside its political, religious and cultural conflicts that have to be solved, and India and China as the two fastest-growing economies and largest populations in the world.⁶⁷ Both nations are important trading partners for Germany and their increasing energy demands will drastically change the worldwide distribution of energy resources. They will be partners and competitors at the same time. Germany has realized that the energy topics of tomorrow are not matters of national concern, but have to be engaged and solved at a global level. What can be solved on a national basis are the political and economic

⁶⁶ Federal Ministry of Defense, *White Paper 2006 on German Security Policy and the Future of the Bundeswehr*, governmental document (Berlin: Federal Ministry of Defense, 2006), 20.

⁶⁷ Ibid., 47–48.

decisions on a diverse fuel mix and suppliers, renewable energy, an increase in energy efficiency and the protection of the energy infrastructure.⁶⁸

The importance of energy security and its global dimension has been properly addressed and integrated in the strategic context of Germany's White Paper on Security Policy.

4. Russia

With the end of the cold war, the Soviet Union collapsed, leaving behind multiple states that emerged from the Soviet Union as independent states. Russia, especially Moscow, was the centre of power for the Soviet Union, which leads to the Russian perception of being the successor of the Soviet Union. The sudden realization that the United States and the Western states won the cold war and that the United States is the only remaining superpower, combined with a devastating economy, are examples of the problems Russia has and has to cope with. The Russian Federation was left in an identity crisis and was desperately searching for ways to restore its significance as a superpower. The possession of nuclear weapons and its permanent membership as a veto power within the United Nations Security Council assisted Russia in restoring its claim of being recognized as a superpower.

Speaking of its economy, the first years after the end of the cold war were very difficult for the Russian state and its people. Based on the GDP growth rate data from the World Bank, the Russian economy declined up to 14.5% in 1992 and 12.6% in 1994.⁶⁹ The Russian economy did not take off until 1999, and since then, the Russian economy has risen at a rate between 5% and 10% annually, which is a remarkable rise in GDP growth compared to highly industrialized nations. As for the whole world economy, the year 2009 resulted in a decline Russia's GDP of 7.4% due to the global financial crisis.

⁶⁸ Federal Ministry of Defense, *White Paper 2006 on German Security Policy and the Future of the Bundeswehr*, 20.

⁶⁹ The World Bank, *The World Bank - GDP growth (annual%)*, 2010, <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=3>.

Nevertheless, Russia, as one of the BRIC-nations,⁷⁰ will emerge from this crisis a winner because it has something to offer that a great number of countries are interested in—large fossil energy resources. Russia holds 43,30 trillion cubic meters of natural gas reserves, which are the world's largest proven gas reserves. In addition, Russia is the seventh largest occupant of proven oil reserves (79 billion barrels). Russia is the largest worldwide exporter of natural gas and the second largest exporter of oil.⁷¹ Not surprisingly, the focus on energy security is of great importance for Russia's economy and wealth and, therefore, an issue of national security.

The most recent paper dealing with the matter of Russia's national security is the Foreign Policy Concept (FPC) published in 2008. According to a report from the Center for Eastern Geopolitical Studies, the new FPC emphasizes an "increasing importance of energy in international affairs." Specifically, the rising competition for energy resources and its potential for future conflicts is mentioned.⁷² A report from the Caucasian Review of International Affairs mentions that Russia lays its focus on regions like the Arctic, the Caspian Sea and Siberia and that Russia will "participate in the struggle for the exploitation of regions rich in resources and the control of the transportation routes" and that "Russia desires to be a country that plays a leading part in energy, serving both economic and political goals."⁷³

The large proven reserves of natural resources allow Russia to become a major player concerning energy on the international scene. If not dependent already, large parts of the world will become dependent on Russian energy resources in the near future. In addition, Russia will be a counterbalance to the politically unstable region of the Middle East, which promotes Russia's role in worldwide energy politics. The fact that Russia is not a member of OPEC underlines this.

⁷⁰ The BRIC-nations (Brazil, Russia, India, China) are considered to be the fastest rising economies of today and the most influential markets of tomorrow.

⁷¹ European Union, *Europe's Energy Portal*.

⁷² Rokas Grajauskas, *What is New in Russia's 2009 National Security Strategy?* (Centre for Eastern Geopolitical Studies, 2009), 3.

⁷³ Sophia Dimitrakopoulou und Andrew Liaropoulos, *Russia's National Security Strategy to 2020: A Great Power in the Making?*, *Caucasian Review of International Affairs* 4, no. 1 (2010): 35–42, 39–40.

D. ENERGY SECURITY IN THE CONTEXT OF THE EUROPEAN UNION

Energy security is not just a topic that is only important to the European Union, but also of great national interest to the member states. So far, several documents and policies have been published on a European level dealing with the matter of energy security. Specifically mentioned are the Green Paper and additional reports based on the Green Paper, the European Security Strategy and the Treaty of the European Union. The Green Paper⁷⁴ was written by the European Commission and includes strategies for the European Union on how to properly address energy issues in the future. The European Security Strategy,⁷⁵ published by Javier Solana in 2003, during his term in office as the Secretary General and High Representative of the European Union, is so far the only paper that identifies key threats to the European Union and how these key threats need to be addressed. Since 2003, no revised versions of the European Security Strategy have been published. The Treaty of the European Union was signed in 1992 in Maastricht by the heads of state or government. Since then, the Treaty of the European Union has been updated with several additional treaties. The last version of the Treaty of the European Union is known as the Lisbon Treaty. It was signed in 2007, and after ratification by the member states, was implemented in December 2009.⁷⁶

Before the documents are described in more detail, it is important to have a closer look at the setup of the EU as a legal body, in order to understand the connectivity between the different decision-making institutions and the boundaries and problems associated with energy security policies, foreign policies and national interests.

⁷⁴ European Commission, *Green Paper*.

⁷⁵ European Union, *A secure Europe in a better world: European Security Strategy*.

⁷⁶ European Union, *Europa - Treaties and Law*, http://europa.eu/abc/treaties/index_en.htm.

1. Interpretation of Energy Security

The EU is not a nation but a supranational organization. What makes the EU unique is that it combines institutions within the organization that can overrule national interests and laws—different from other intergovernmental organizations like NATO, where all decisions are made unanimous in the North Atlantic Council (NAC)—but also includes the European Council, consisting of the head of state or government from every member state, where decisions are made also unanimous to maintain national sovereignty.

Even if the EU is not a nation, its constructional setup is similar to democratic states. The legislature of the EU consists of two chambers, the European parliament and the Council of the European Union. These two chambers discuss, vote and adopt European laws proposed by the European commission. Laws passed through both chambers are binding for member states. In some cases, national laws have to be adjusted accordingly. The parliament consists of 736 members and is elected by the citizens of the European Union for five years.⁷⁷ The Council of the European Union consists of the national ministers of the member states and they are, therefore, not electable through a European election, but through the national elections held in each member state individually. Depending on the subject being discussed, the Council has different configurations. With the implementation of the Lisbon Treaty in 2009, the amount of possible configurations rose to ten. Depending on the discussed subject, not only the configuration, but also the decision-making process will vary—single-majority voting, qualified-majority voting or unanimity.⁷⁸

The judiciary is represented by the EU's Court of Justice. It is the duty of the Court of Justice to assure that European laws are implied in all European states the same way. On the executive side, there is the European Commission. It is comparable to the cabinet of most nations. Every one of the 27 member states appoints one commissioner.

⁷⁷ European Parliament, *European Parliament*, October 2010, <http://www.eurparl.europa.eu/parliament/public/staticDisplay.do?id=146&language=en>.

⁷⁸ Council of the European Union, *Consilium - Council Configurations*, 2010, <http://www.consilium.europa.eu/showPage.aspx?id=426&lang=en>.

The Commission proposes new laws and assures their proper application in the EU. It is setup out of several departments, such as environment, finance, internal market, and energy, just to name a few. In contrast to the Council of the European Union, within the parliament and the commission, all decisions are based on either single-majority or qualified-majority voting.

Energy security is mainly part of the working order of the European Commission for energy. The Council of the European Union, consisting of the national ministers of energy, is mainly involved in the decision-making processes concerning European energy work areas, but are not limited to only the energy questions being addressed in this specific configuration. Whenever necessary, it is possible to discuss energy questions within other configurations, such as environmental issues related to energy production within the Environment Council, or when issues of energy security need to be discussed in the Foreign Affairs Council due to its international dimension.

The presidency of the Foreign Affairs Council is held by the High Representative of the Union for Foreign Affairs and Security Policy (HR). In fact, the Foreign Affairs Council is the only institution of the Council of the European Union that is not chaired by the respective minister of the member state, which currently holds the rotating presidency of the European Union. At the same time, the HR is also Vice President of the European Commission. This change was introduced through the implementation of the Lisbon Treaty in December 2009 to increase the impact of European foreign policies.⁷⁹ The main working area of the Foreign Affairs Council is the Common Foreign and Security Policy (CFSP). This includes diplomatic and economic tools, humanitarian aid, sanctions, nation building, police missions and military missions. As the operational arm of CFSP, the European security and defense policy—within the Lisbon treaty renamed the Common Security and Defense Policy (CSDP)—was introduced. It is the goal of CSDP to provide the EU with military and civilian capabilities to act in crisis management and “ensure

⁷⁹ European Union, *Treaty of Lisbon - Amending the Treaty on European Union and the Treaty establishing the European Community*, (Brussels: Official Journal of the European Union, 2007).

peace and security in troubled regions.”⁸⁰ The EU does have its own civilian capabilities and a military staff, but further police and military capabilities need to be provided by the member states. Most decisions made with regards to foreign affairs are based on unanimity.

The Lisbon Treaty is the most recent version of the Treaties of the European Union. As with all treaties following the Lisbon Treaty, it is an amendment to the original version from 1992, known as the Maastricht Treaty, which is the founding treaty of the European Union. No previous treaties are regarded as founding treaties of the Union, but they built important milestones that enabled European nations to help evolve into the European Union. In fact, energy matters played a very important part in the first European treaty, the establishment of the European Coal and Steel Community (ECSC), signed in 1951 and expired in 2002. The main purpose of the ECSC was “to integrate two key sectors of their [European] economies to create a community ... [whose] purpose was to replace conflict with cooperation and antagonism with prosperity.”⁸¹ At that time, coal was the main driver of energy production in Europe. Energy played an important part in European politics right from the beginning.

With the implementation of the Lisbon Treaty, several changes have been made and added to the Treaty of the European Union, including energy politics, which have been raised to a greater political level. Energy, as a topic on the European level, has been added as Title XX Article 176 A to the Treaty of the European Union. It highlights the importance of energy and includes four key interests for European energy politics; (1) a functioning energy market, (2) the assurance of security of supply, (3) the promotion of energy efficiency and energy saving and (4) the promotion of an interconnectivity in energy networks.⁸² This is to be achieved through a “spirit of solidarity between member states” but is not to “affect a Member State’s right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the

⁸⁰ Council of the European Union, *Security and Defence*, <http://consilium.europa.eu/showPage.aspx?id=261&lang=en> (accessed August 2010).

⁸¹ Sami Andoura, Leigh Hancher and Marc van der Woude, *Towards a European Energy Community: A Policy Proposal*, Notre Europe (Paris: Jacques Delors (Notre Europe), 2009), 1.

⁸² European Union, *Treaty of Lisbon*, 88.

general structure of its energy supply.”⁸³ The Lisbon Treaty truly shows the importance of energy politics on a European level, and its acceptance. But the treaty does not show any interconnections between the new office of the High Representative of the Union for Foreign Affairs and Security Policy and energy politics (HR), especially energy security. Energy politics remain within the working order of the European Commission.

Concerning European security, the European Security Strategy (ESS) needs to be named. Written in 2003 under Javier Solana, the ESS identifies key threats to the European Union and how to address these threats. Identified key threats are terrorism, proliferation, regional conflicts, state failure, and organized crime. Energy dependence has been identified as a global challenge, with the EU being the largest importer of oil and gas.⁸⁴ There is no strategy for how energy dependence is to be reduced or addressed and no further comments are found regarding energy security within the security strategy. This has been realized and is now integrated into in the “Report on the Implementation of the European Security Strategy”⁸⁵ since 2008. Due to the high dependence of the EU on imported fossil fuels and their limited allocation within areas with high threat potential, the EU must adopt “an energy policy which combines external and internal dimensions.”⁸⁶ According to the report, the internal dimension includes a unified energy market, greater interconnectivity and “attention to the most isolated countries and crisis mechanisms to deal with temporary disruption to supply.”⁸⁷ Externally, the report favors greater diversification, good governance and investments in source countries. In addition, transit routes, promotion of renewable energy and energy efficiency are also valuable contributions to the European Security Strategy. Since the report does not replace the Security Strategy, but contributes to it, maybe a new European Security Strategy will be published in the near future to address Europe’s vision of “a secure Europe in a better world” in more detail.

⁸³ European Union, *Treaty of Lisbon*, 88.

⁸⁴ European Union, *A secure Europe in a better world: European Security Strategy*, 3.

⁸⁵ Report on the Implementation of the European Security Strategy: Providing Security in a Changing World,“ Report (Brussels, 2008).

⁸⁶ *Ibid.*, 5.

⁸⁷ *Ibid.*, 5.

The Green Paper, published by the European Commission in 2006, can be regarded as the most important European energy strategy paper. Six priority areas have been identified by the Commission as essential to achieve the goal of “sustainable, competitive, and secure energy.”⁸⁸ The main points that can be drawn out of these areas are an internal energy market, security of supply, solidarity between member states, diversification, tackling climate change, promoting new technologies and a coherent external energy policy.

These priorities come very close to the key principles of energy security—diversification, resilience, information, reality of integration, globalization of energy security, protection of the supply chain.⁸⁹ Even if the terminology of energy security is used very rarely in the Green Paper, by integrating the key principles of energy security, the whole paper relates to European energy security.

Through the completion of an internal electricity market, the European Union wishes to secure and create jobs in the European energy sector and contribute to a security of supply based on the interconnectivity of national networks and solidarity between member states. This alone reflects resilience, information, and reality of integration as key principles. Diversification of the fuel mix and the supply chain is essential to the EU to enlarge the security of supply and decrease the negative effects of a high dependence in the EU on fossil fuels imported from a limited number of source countries. Concerned with climate change and promoting new technologies, the EU has set itself ambitious goals. An additional report based on the Green Paper was published by the Commission in 2008: “20 20 by 2020—Europe’s climate change opportunity.” It addresses two key targets—the reduction of 20% of all greenhouse gas emissions by 2020 and a 20% share of the renewables of the European fuel mix.⁹⁰ To fulfill these goals the EU has to increase energy efficiency, decrease the import of fossil fuels, since fossil fuels are accountable for the biggest part of greenhouse gas emissions, and invest in new CO2-

⁸⁸ European Commission, *Green Paper*.

⁸⁹ Yergin, *Ensuring Energy Security*.

⁹⁰ European Commission, *20 20 by 2020 - Europe's Climate Change Opportunity*, 2.

low energy generation facilities and new technologies and replace ageing infrastructure.⁹¹ The last priority area mentioned in the Green Paper is the adoption of a “coherent external energy policy.”

Europe needs a coherent external policy to enable Europe to play a more effective international role in tackling common problems with energy partners worldwide. A coherent external policy is essential to deliver sustainable, competitive and secure energy... It would enable the EU to speak with one voice.⁹²

This contributes to the request of an external dimension of energy security within the Report on the Implementation of the European Security Strategy. The necessary interconnectivity of a nation’s energy networks and of energy security between the Commission, the office of the High Representative of the European Union for Foreign Affairs and Security Policy and the Foreign Affairs Council have been identified by the Union as a must to give European energy security an external dimension. “The EU’s external energy policy is dependent upon the progress with internal policies and, in particular, the creation of the internal market for energy.”⁹³

Reflecting the above-mentioned institutions of the European Union, their working areas and tools, the developed strategies, reports and papers, it can be stated that energy politics and energy security are part of the main agenda of the European Union. The importance of energy security has been realized and integrated into strategies to properly address energy security. The European Union already has the working bodies with identified working areas, consisting of people derived from the member states, tasked with working for the European Union and its people. But how is energy security implemented within the European context?

⁹¹ European Commission, *Green Paper*, 3.

⁹² *Ibid.*, 14.

⁹³ European Commission, *Green Paper*, 14.

2. Implementation of Energy Security

The rising dependency of the European Union on fossil fuels is the main reason for the rising importance of energy security within the Union. In fact, Denmark is the only member state of the Union that is energy independent. On the other hand, Cyprus, Malta, and Luxembourg are nearly 100% energy dependent. Germany has a dependency rate of 61% whereas France is a little better with 51%. Of the four big nations of the EU, the United Kingdom has the lowest energy dependency, at 21%, due to oil and gas reserves in the North Sea. But natural resources are declining, so energy security will be and already is an issue in the UK. The overall dependency of the European Union on natural resources is 54%.⁹⁴

It is important to mention that energy security is not only about the dependency on foreign natural resources. Energy security is also about diversification of the fuel mix, resilience and information. The security of supply through foreign imports is only one dimension of energy security, but it is the most influential external dimension. It demonstrates the direct connection between energy politics at home and foreign affairs. Energy security will not be enlarged by only paying attention to the security of supply, but the denial of its importance can cause energy supply disruptions with severe consequences. This was clearly seen during the 2008–2009 Ukrainian gas crisis, where several Central and Eastern European countries “found themselves suffering through a cold winter with greatly reduced access to heating fuel.”⁹⁵ For the importance of European energy security, this crisis has been an “early wake up call that exposed Europe’s energy security vulnerability to both intended and unintended supply disruptions.”⁹⁶

Nevertheless, despite all the strategies and policy suggestions written by the EU and worldwide energy specialists, and despite all the institutions already available to the

⁹⁴ European Union, *Europe's Energy Portal*.

⁹⁵ Security & Defence Agenda, *Is Europe's Energy Security Policy a Reality or an Ambition?*, in *SDA Policymakers' Dinner* (Brussels: Security & Defence Agenda, 2010), 6.

⁹⁶ Kevin Rosner, *The European Union: On Energy, Disunity*, in *Energy Security Challenges for the 21st Century: A Reference Handbooks* (Washington D.C.: Library of Congress Cataloging-in-Publication Data, 2009), 166.

EU dealing with energy matters, the European Union still lacks a common energy security policy. The main reason for this is the nations' unwillingness to comply with binding laws on a European level concerning energy politics. This is only true to some extent. In 2007, the member states agreed on an "Energy Policy for Europe." Within this policy, several goals, like the increase of renewable energy and energy efficiency and the decrease of CO₂ emissions, have been formulated, some of them legally binding. But member states still continue with divergent national energy policies and "remain reluctant to cede national control over energy markets."⁹⁷ As was written in a CRS Report from 2008 concerning the EU's energy security challenges, "energy policy remains ... the responsibility of the member states" and most decisions regarding long-term investments, infrastructure, fuel mix "continue to be made at the national level by individual member states."⁹⁸

Kevin Rosner, the editor of the *Journal of Energy Security*, named one of his articles "The European Union: On Energy, Disunity," which is similar to the official motto of the EU: "United in diversity." Rosner states, "no state was or is willing to have Brussels [the EU] dictate the form and type of energy consumed" and "national governments largely retain the right of determining their own energy future."⁹⁹ When the EU wants to emphasize its strength through the diversity of its member states, regarding energy security, this diversity is not favorable. This fact can be underlined by comparing the fuel mix of member states. France, for example, has a great belief in nuclear power, which accounts for 85% of its national energy production. Renewables account for a share of 13%, whereas oil and gas have a diminishing share at 2%.¹⁰⁰ Germany's domestic energy production consists of solid fuels (43%), nuclear (32%), gas (11%), renewables (10%) and oil (4%).¹⁰¹ These numbers already show the differences between

⁹⁷ Paul Belkin, *The European Union's Energy Security Challenges*, *CRS Report for Congress*, January 2008, Summary.

⁹⁸ Belkin, *The European Union's Energy Security Challenges*, 1.

⁹⁹ Kevin Rosner, *The European Union: On Energy, Disunity*, 161.

¹⁰⁰ France - Energy Mix Fact Sheet, January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_fr_en.pdf (accessed 29. October 2010).

¹⁰¹ Germany - Energy Mix Fact Sheet, January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_de_en.pdf (accessed 29. October 2010).

the member states regarding energy and their priorities, and the differences are also the base of debates throughout Europe. Regarding the goals of the European Union to fulfill its “20 20 by 2020” targets, France is in a better position than Germany. Nuclear power generation is currently the only energy source that can provide clean, CO₂ efficient energy as a base load, if the danger associated with nuclear power and the unsolved problem of nuclear waste disposal are not considered. In addition, through its great dependence on nuclear energy production, France is nearly energy independent in terms of domestic power generation. Germany, who is committed to fulfill the “20 20 by 2020” goals, like France, has decided to shut off all of their nuclear power plants by 2022. This decision has been revised by the government, and the nuclear power industry has been given an extension of 15 years.¹⁰² As mentioned above, this decision has been put on hold since the nuclear catastrophe in Japan. Following this decision, there was a controversy in the German parliament and protest actions by Greenpeace against what is currently the largest party in the German parliament, the CDU or Christian Democratic Union.¹⁰³ How is the European Union going to unite its member states concerning energy when the two largest economies of the European Union have such diverse opinions and interests in energy matters? And how will the EU be able to create a common energy security policy with an external dimension when its member states cannot agree on matters of the internal dimension of energy security, including the extension of a European internal energy market and network?

The Security & Defence Agenda¹⁰⁴ hosted a dinner in May 2010 where Europe’s energy security situation was discussed in conjunction with an overall question: Is Europe’s energy security policy a reality or an ambition? One of the main points mentioned was that the EU should continue to follow along its track of adopting the six priority areas as defined in the Green paper. However, it was also mentioned that “the EU

¹⁰² New Europe, *German nuclear-power plant extension debate going strong*.

¹⁰³ tagesschau, *Hitzige Bundestagsdebatte um umstrittenes Energiekonzept*, 28. October 2010, <http://www.tagesschau.de/inland/akw144.html> (accessed 29. October 2010).

¹⁰⁴ The Security & Defence Agenda (SDA) is the only specialist Brussels-based think-tank where EU institutions, NATO, national governments, industry, specialized and international media, think tanks, academia and NGOs gather to discuss the future of European and transatlantic security and defence policies in Europe and worldwide.

lacks genuine political will to reach a decision together and take common actions” and “national interest take precedence over common actions in the EU, a fact that is rooted in the fear that common actions would not provide the same benefits as individual actions.”¹⁰⁵ Further on “the lack of a single external representative from the EU creates a sense of incoherence on the world stage.”¹⁰⁶ “We [the EU] need to speak with one voice in external energy affairs.”¹⁰⁷ Even if the European Union officially has its external voice concerning foreign affairs, the office currently held by Lady Catherine Ashton, her power regarding energy politics is limited. As mentioned above, the main reason for the lack of a common energy security policy is the nations’ unwillingness to work together.. Energy security is too important for each nation, making it difficult to distribute to any level beyond national authorities. Giving the EU the authority to formulate a valid energy security policy, binding for all member states, would mean giving up national power concerning energy. Energy security is regarded in most nations a matter of national security, just like defense. Concerning defense, the EU has been able to develop a Common Security and Defence Policy (CSDP) over the last ten years, embedded in the Common Foreign and Security Policy (CFSP). Still, each nation decides on its own whether a CSDP mission is to take place and to what extent military or civilian personnel will be contributed. All CSDP missions, as mentioned above, are bound to unanimity within the Foreign Affairs Council and the European Council.

Despite all the negative aspects concerning CSDP, at least the EU and its member states were able to agree on the implementation of a common security and defense policy. Concerning energy security, this has not been achieved. Energy security, up to this point, is not part of the working order of CFSP within the Foreign Affairs Council, which makes it difficult to give Europe “one voice” concerning energy security, and a forum

¹⁰⁵ Ovidiu Dranga, Ambassador of Romania to Belgium, in Security & Defence Agenda, Is Europe's Energy Security Policy a Reality or an Ambition?, in *SDA Policymakers' Dinner* (Brussels: Security & Defence Agenda, 2010), 7.

¹⁰⁶ Security & Defence Agenda, Is Europe's Energy Security Policy a Reality or an Ambition?, in *SDA Policymakers' Dinner*, 8.

¹⁰⁷ Heinz Hilbrecht, Director, Security of Supply, Energy Markets & Networks; Directorate General for Energy; European Commission in: Security & Defence Agenda, Is Europe's Energy Security Policy a Reality or an Ambition?, in *SDA Policymakers' Dinner* (Brussels: Security & Defence Agenda, 2010), 7.

where the external dimension of energy security can properly be addressed. This forum is needed as most European natural resources imports are derived from areas of great instability or where the reliability remains uncertain.¹⁰⁸

Title XX Article 176 A of the Lisbon Treaty explicitly states that “[such measures] shall not affect a Member State’s right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply.”¹⁰⁹ The only commitment stated in the Lisbon Treaty concerning energy is a “spirit of solidarity.”¹¹⁰ The question that arises is the value of this spirit of solidarity between European Union member states when their energy interests are so divergent. Today, every member state has the right to agree on bilateral agreements to strengthen its own energy position, even if this might be disastrous for other European member states.¹¹¹ The deep-sea oil drilling off the coast of Angola by the French oil company, Total, is just one example of these bilateral agreements. No other European nation has currently entered the very profitable market of deep sea drilling in Angola. This is good for France and its citizens since it allows Total and the French government to control the development of oil prices in France, but it weakens the position of other European nations and the European Union. The ongoing discussion about the environmental aspects of deep sea drilling, after the incident in the Gulf of Mexico, is just one factor where the European Union has no word. As has been pointed out previously, environmental issues are important to the European Union in terms of energy politics. But Angola is not Europe and French national interests are valued higher than European interests. Another example, which will be highlighted in more detail later on (within this thesis), is the erection of the Nord Stream pipeline through the Baltic Sea. Overall costs of the pipeline are estimated at 7.4 Billion EUR, not

¹⁰⁸ European Commission, *Green Paper*, 3.

¹⁰⁹ European Union, *Treaty of Lisbon*, 88.

¹¹⁰ CSS Analysis in Security Policy, *European Energy: The 'Solidarity' Conundrum*, (Zurich: CSS, 2010), 1.

¹¹¹ *Ibid.*, 1.

including operational and maintenance costs.¹¹² It was highly debated that the erection of the pipeline through the territory of the Baltic States and Poland would have been cheaper and easier to maintain, but Russia and Germany preferred and selected the bilateral solution. Since both the Baltic States and Poland are members of the European Union, the pipeline project not only weakens their position towards the resources giant, Russia, but also within the European Union. It also hampers further development of an integrated internal energy market in Europe.

The EU has realized the great importance of energy security and developed an impressive set of policies and strategies that could contribute to European energy security. Nevertheless, the unwillingness of its member states makes it nearly impossible for the EU to act accordingly. Therefore, it remains uncertain how long this unfortunate situation regarding European energy security will remain. The real power within the EU does not lie within its institutions, but with its member states, and as long as national interests are of a higher priority than European interests, European energy security will be difficult to accomplish.

¹¹² Nord Stream, *The pipeline - Nord Stream AG*, <http://www.nord-stream.com/en/the-pipeline.html> (accessed 17. November 2010).

III. THE EUROPEAN ENERGY MARKET

At the beginning of Part II of this paper, the overall development of the global energy market was described. It discussed the rising global demand for energy that is expected, mainly due to population and economic growth in non-OECD states like China, India, Brazil, and Africa as a region.

Nineteen of twenty-seven EU member states are members of the OECD. The EU has expressed its willingness to reduce greenhouse emissions by 20%, increase the share of renewables in the fuel mix to 20%, and increase overall energy efficiency by the year 2020.¹¹³ Whether these numbers can be met by 2020 remains questionable. Under today's conditions, the energy demand in the EU will, in fact, rise and dependency on fossil fuels will increase as well.

The European energy market is made up of two parts—the external market and the internal market. The goal of this section is to explain the differences between the two markets, their make-up, their unique features, and the importance of differentiating between the two.

First, the external market will be discussed. The main focus will be on the EU as a consumer. What is the make-up of the current fuel mix? How will the fuel mix change in the future? Does the EU itself act as an importer or is this still done by each nation? Concerning the EU's role as an importer, it is necessary to define its critical dependencies (oil and gas) and identify the providers. Where does Europe get its oil and gas? Who are the main exporting nations? What are their incentives? How dependent is Europe on these nations?

After answering the above questions, the focus will then shift to the internal energy market, between the EU member states. What is the make-up of the internal market? What are the market arrangements? Do all countries distribute energy equally or are there barriers? Are all nations equally dependent on net importers or do some nations

¹¹³ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 11.

have the internal advantage of being energy independent? The three leading countries in the EU have been chosen to explain the European internal energy market—France, the United Kingdom, and Germany.

Before both markets are presented, a few explanations need to be made. Like every other market, the European energy market consists of two sides—demand and supply, in other words, importers and exporters, or consumers and producers. The terminology ‘importers and exporters’ refers to, the usual trade of natural resources (oil and gas).. This is important as there is a big difference between importers and exporters, and consumers and producers. Every nation is a consumer, but not every nation is an importer or producer. If a state does not have enough natural resources to satisfy its demand, it needs to import them. The proportion of natural resources in the fuel mix is a good indicator of the amount of dependency of that specific nation, which contributes to a large extent to the subject of energy security. Once the natural resources are inside the country, they need to be refined and used to produce energy. This capacity needs to be present as well. A state is only fully energy independent if it does not have to rely on the imports of natural resources and also has the capacity to produce enough energy to satisfy its own demand. , By these criteria, not one single member state of the EU is fully energy independent.

A. THE EXTERNAL MARKET

1. Importing Energy Resources

In order to evaluate the degree of Europe’s energy dependency, it is important to analyze Europe’s current and future fuel mix and its proven reserves of natural resources. The focus will be mainly on oil and gas, since here lies the EU’s greatest dependency.

Today the European Union can rely on several ways of creating energy in both primary usage sectors—electricity and transportation. According to the data provided by The European Commission, the fuel mix consists of five major segments—oil, gas, nuclear, solid fuels, and renewables. The largest share is made of oil (37%), followed by gas (24%), solid fuels (18%), nuclear (14%), and renewables (7%).

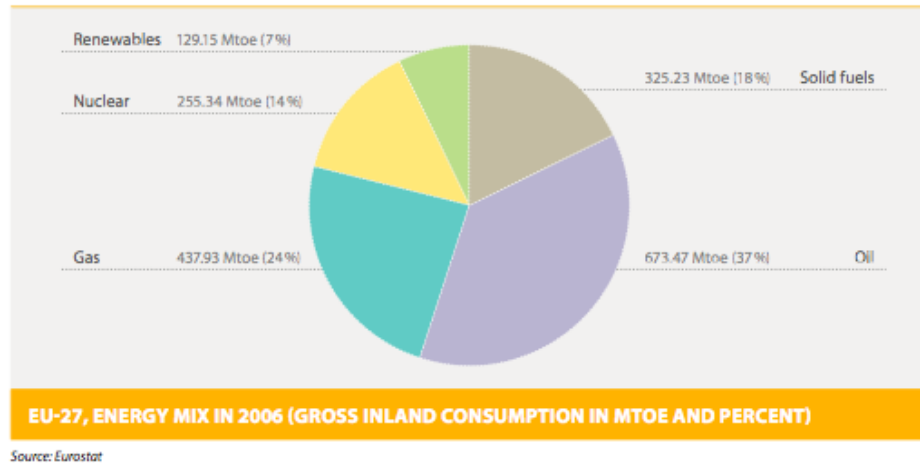


Figure 1. EU-27, Energy Mix in 2006 (From European Commission, 2008) ¹¹⁴

These are the numbers that account for all the 27-member states of the EU. Of course, there are great differences between the nations.¹¹⁵ Great Britain, still highly reliant on oil and gas due to its resources in the North Sea, has a different fuel mix than states like Germany or France, who have larger capacities for utilizing solid fuels or nuclear power. This also explains the great differences in imports of natural resources and the sources of exporting nations, which depend on the member state's interests in certain regions of the EU.

More than one third of the fuel mix is made up of oil. In regards to power generation and transportation, nearly all the oil is used in the transportation sector. Transportation has the largest share of energy consumption, even larger than the whole industrial sector.¹¹⁶ "Oil is king!"¹¹⁷ This statement proves to be valid for the European energy market as well and it stresses out the importance of the transportation sector for the whole energy market. Even if the discussion regarding solar-driven or bio-fuel-driven

¹¹⁴ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 7.

¹¹⁵ Juan Delgado, *European Energy Markets: Moving in a Common Direction?*, report (Brussels: Bruegel, 2008), 1.

¹¹⁶ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 5.

¹¹⁷ Luft and Korin, *Energy Security for the 21st Century*.

vehicles is present, up till now their percentage of the whole transportation sector is negligible.¹¹⁸ Thus, if the flow of oil was disrupted in Europe, the whole transportation sector would suffer.

All other segments of the European energy fuel mix—gas, nuclear, solid fuels, and renewable—are for usage in the electricity sector. This counts for two thirds of the overall fuel mix. Compared to the transportation sector, the electricity sector has one great advantage—diversification of energy resources. If the supply of one of the segments is disrupted, the consequences would still be severe, but it would not affect the whole electricity sector. In fact, the diversification of energy resources can also be counted as part of resilience, another important key principle of energy security.

Nevertheless, it is the EU's goal to satisfy its energy demand and therefore supply its energy production capacities with the specific resource needed. As mentioned above, none of the 27 member states of the EU is fully energy independent. The question that needs to be answered is: To what extent is the EU energy dependent and what are the trends for the future?

The oil reserves within the EU represent a share of 0.5–0.8% of the world's proven oil reserves. The proven gas reserves of the EU represent a share of 1.4–2% of world gas reserves.¹¹⁹ The overall consumption rate of the 27 member states of the EU represents a share of 17% of the world's energy consumption.¹²⁰ Reflecting the numbers from Figure 1, 61% of the energy fuel mix consists of oil and gas. Today, the EU needs to import about 50% of its total energy supply, with oil already at an import rate of 80% and gas of 54%.¹²¹ According to the report of the European Commission in 2006, this dependency will rise to 70% within the next 20–30 years.¹²²

¹¹⁸ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 11. In 2003 it was agreed that by 2010, 5.75% of all petrol-driven cars will run on bio-fuels. This target will not be achieved.

¹¹⁹ *Ibid.*, 22–23.

¹²⁰ Belkin, *The European Union's Energy Security Challenges*, 5.

¹²¹ *Ibid.*, 5.

¹²² European Commission, *Green Paper*, 3.

These numbers already show the EU's great dependence on imported fossil fuels. But, with a rising energy demand in Europe and a growing demand in countries like China, India, and Brazil, the dependence and the need for gaining access to energy resources obtains an even greater significance. The only scenario where European energy demand is expected to decline is when the targets set by the European Council in 2007—a 20% reduction of greenhouse gases and 20% share of renewables by 2020—are met.¹²³ However, this is not certain. Despite the implementation of these targets, energy demand for the transportation sector would still increase by 4–8% by 2020.¹²⁴ Thus, the dependency on imported fossil fuels remains a problem for the EU.

Besides the dependency, the EU faces another problem—the fragmentation of the market. This is a great disadvantage for the European energy market because different interests and policies prevent the development of a common energy strategy.¹²⁵ The EU does not buy natural resources from the exporting regions. This is done by the member states to fulfill their specific demands. Seen from the nations' point of view, this seems reasonable, but viewed from the EU's perspective, this is an unfortunate situation. All member states have agreed upon the policies made by the commission and it is also a known fact that the EU would be much stronger if national interest in regards to energy supply and energy security could be set aside, but “member states have been careful not to sacrifice their individual rights to independently pursue external relations to secure energy supplies.”¹²⁶ This reflects a classic example of the “prisoner's dilemma.”¹²⁷ Together they would be better off, but each nation fears that another nation would try to get the best deal, so they all try to get the best deal and everyone loses. This dilemma will be covered in more detail when the internal market of the EU is presented. The bottom line is that, Europe must speak with one voice when it comes to energy security politics.

¹²³ European Commission, *20 20 by 2020: Europe's climate change opportunity*, 2.

¹²⁴ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 12.

¹²⁵ Delgado, *European Energy Markets: Moving in a Common Direction?*, 1.

¹²⁶ Belkin, *The European Union's Energy Security Challenges*, 9.

¹²⁷ The “dilemma” faced by the prisoners is that, whatever the other does, each is better off confessing than remaining silent. But the outcome obtained when both confess is worse for each than the outcome they would have obtained had both remained silent. (<http://plato.stanford.edu/entries/prisoner-dilemma/>)

Up to this point, the energy fuel mix in the EU has been presented and a great dependency on imports of energy resources has been identified. Now it is important to focus on the origin of the imports. Where does the EU get its oil and gas from? Who are the main trading partners, and what does this mean for Europe?

2. Exporting Energy Resources Toward the European Union

The largest reserves of energy resources (oil and gas) are located in four main areas—Russia, the Caspian Sea, the Middle East, and North Africa. All are within reach of the EU, which is a great advantage for the EU.¹²⁸

All of the main exporters of crude oil to the EU—Saudi Arabia, Russia, Iran, Libya, and Norway—belong to the top twenty nations of proven oil reserves. And except for Norway, all of them belong to the top ten nations.¹²⁹

Russia accounts for 30.3% of crude oil exports to the EU, followed by Norway with 13.8%, Libya (9.1%), Saudi Arabia (6.4%), and Iran (5.6%). Already this accounts for 65.2% of all crude oil imports to the EU.¹³⁰ And since Europe's own reserves are declining, this number is going to increase.

In terms of natural gas imports, the EU receives its gas mainly from Russia, Norway, and Algeria. Again, all are in reach of the EU and belong to the top twenty nations to hold the largest amount of worldwide gas reserves. Russia accounts for 30.7% of the EU's gas imports, Norway for 20.1%, and Algeria for 12.9%. This is more than half of the overall gas imported into the EU, and it is expected to rise to 80% in the next 25 years, if current trends remain the same.¹³¹

Both, oil and gas can be transported two ways—via ship or pipeline. Ninety percent of all European trade is done by ship, which could be an indicator for ships being

¹²⁸ Belkin, *The European Union's Energy Security Challenges*, 9.

¹²⁹ European Union, *Europe's Energy Portal*, 2010.

¹³⁰ European Commission - eurostat, *Energy production and imports - Statistics explained*, 2010, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Energy_production_and_imports#Main_tables (accessed 26. August 2010), table 4.

¹³¹ European Commission, *Green Paper*, 3.

the preferred method of transportation for oil and gas.¹³² For oil this is true, whereas for gas, pipelines are the preferred methods of transportation. Transportation via ship creates greater flexibility. Nearly 38,000 tankers navigate through the oceans to distribute oil from its origin to its consuming destination.¹³³ The main trade routes for oil via ship to the European Union are by way of the Mediterranean Sea, the Atlantic Ocean, the North Sea, and the Baltic Sea as can be seen in Figure 2. Especially noteworthy are the maritime chokepoints—the Suez Channel, Gibraltar, the English Channel, and the Baltic Sea—since they pose a great threat to energy security in terms of environmental issues.

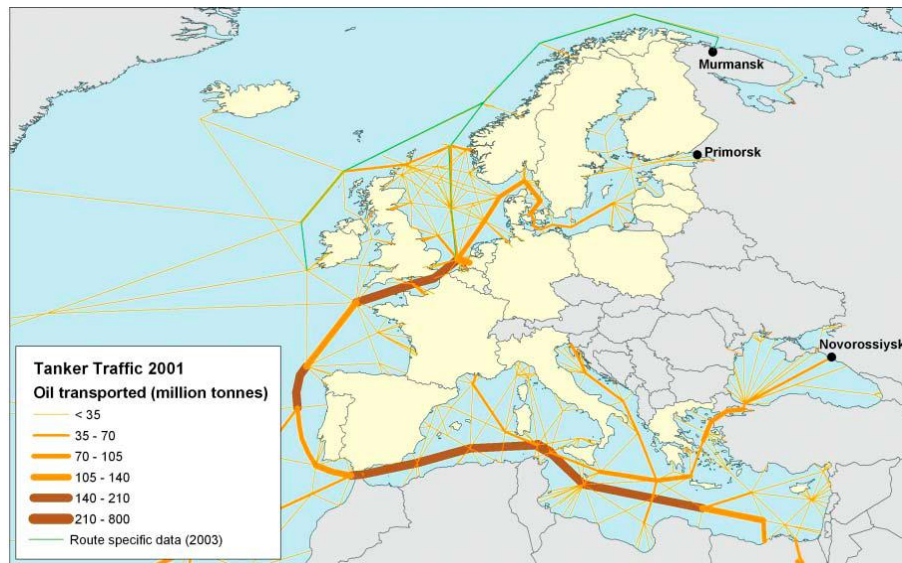


Figure 2. Indicated Tanker Traffic and Volume of Oil Transported in 2001 (From European Maritime Safety Agency, 2004)¹³⁴

Due to Russia's connection to the EU via land, the preferred method of transportation for oil is the use of pipelines. However, this is an exception. Overall, the most used method of transporting oil is via ship.

¹³² European Maritime Safety Agency, *Action Plan for Oil Pollution Preparedness and Response*, report (Brussels: EMSA, 2004), 25.

¹³³ Total: [planete-energies.com](http://www.planete-energies.com), *planete-energies.com - The transportation of oil and gas*, <http://www.planete-energies.com/content/oil-gas/transportation.html> (accessed 26. August 2010).

¹³⁴ European Maritime Safety Agency, *Action Plan for Oil Pollution Preparedness and Response*, 29.

The reason gas is mainly transferred via pipelines is its gaseous state. Natural gas occupies a volume 600 times greater than oil. Therefore, transportation of gas via ship is not the preferred method, as expenses are higher.¹³⁵ When gas is being transported by ship, it is usually as liquefied natural gas (LNG), meaning the natural gas needs to be cooled down to transform from its gaseous state into the liquid state. This is a very costly process, but it has the advantages of reducing the natural gas' volume and creating greater flexibility using ships as transportation devices. Further, by using this method, gas can be transferred to the EU more easily from North Africa, where the erection of a pipeline through the Mediterranean Sea would cost even more. Since the EU receives most of its gas from Russia, pipelines are the preferred method of transportation. But it is important to emphasize that pipelines do have several disadvantages in comparison to ships. The construction of a pipeline is a long-term investment. Long-term trade agreements and a sufficient amount of trust with the trade partner are needed to justify such large investments. For example, the costs of the Nord Stream pipeline are projected to be 7.4 billion EUR, which is about 9.5 billion USD.¹³⁶ Pipelines usually have a length of several hundreds or thousands of kilometers. Several border crossings are common, so specific trade arrangements with transit states have to be made. Also, pipelines, mainly due to their length, are more difficult to protect than ships, which is another important factor with regards to energy security.

¹³⁵ Total: Planete-Energies.com, *planete-energies.com - The transportation of oil and gas*.

¹³⁶ Nord Stream, *The pipeline - Nord Stream AG*.

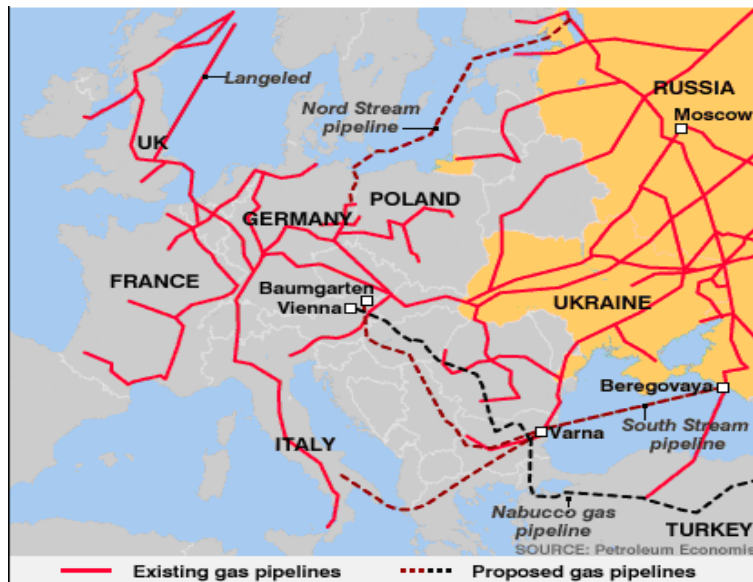


Figure 3. Main European Gas Pipelines (From Real Instituto Elcano 2009)¹³⁷

Figure 3 illustrates the pipeline network, showing the major pipelines from Russia to Eastern and Central Europe. It is clear how complex the pipeline system in Europe is. Except for one pipeline, all the rest have to cross several borders to bring the gas to its destination and all of them are at least several hundred kilometers long. For example, the Nord Stream pipeline will have a total length of 1,220 kilometers and it is not the longest pipeline in Europe.¹³⁸ The maintenance and protection of a pipeline network of that size is a great challenge for the EU and its exporting nations. The challenge will probably be greater for the EU since the security of the supply of fossil energy resources is most important for the EU. Seen from the exporter's perspective, they are looking at the long run for security of demand, but the EU is not the only trading partner demanding energy resources. And global demand is rising.

To sum it up, Europe's energy position in the external energy market is currently not too bad. Europe's energy resources are declining, and therefore it needs to import a greater share of fossil fuels to satisfy its energy demand. Europe is in close proximity to

¹³⁷ Real Instituto Elcano, *The EU and Natural Gas from Central Asia: Is Nabucco the Best Option?*, http://www.realinstitutoelcano.org/wps/portal/rielcano_eng/content?WCM_GLOBAL_CONTEXT=/elcano/elcano_in/zonas_in/asia-pacific/ari102-2009 (accessed 26. August 2010).

¹³⁸ Nord Stream, *The pipeline* - Nord Stream AG.

the largest proven reserves of oil and gas, so gaining and securing access to these proven reserves of resources is important. This is done through long-term trade agreements. The worldwide recognition of the EU as a reliable trading partner and a strong economic power supports this. But there are also some problems associated with Europe's position. Due to declining resources, the EU is forced to import energy resources and due to worldwide declining resources, the remaining resources are "concentrated in the hands of a small number of countries."¹³⁹ Diversification of supply, one of the key principles of energy security, is limited. Further, the remaining resources are located in regions of which "some are threatened by insecurity."¹⁴⁰ The current civil war in Lybia is proof of this fact, which is not an easy situation on which to build long-term relations. Saudi Arabia is considered to have elements of instability within its regime, which also affects long-term relations. Russia, despite its special relationship to the EU, has used its energy potential several times in the past as a political weapon, so far, however, not against the EU itself. In addition, the Russian government has very close control over its energy sector and associated firms.¹⁴¹

The pure dependency on imports of natural energy resources is not the problem per se, but it "requires an active energy security strategy with a good diversified fuel mix, mechanisms to deal with crisis, greater diversification of suppliers and supply routes and a well-functioning internal market with good interconnections."¹⁴²

¹³⁹ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 19.

¹⁴⁰ European Commission, *Green Paper*, 3.

¹⁴¹ Victor Zubkov is the Chairman of the Gazprom Board of Directors and the First Deputy Prime Minister of the Russian Federation (www.gazprom.com)

¹⁴² European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 19.

B. THE INTERNAL MARKET

The degree of dependency of the EU as whole has been depicted in the previous section. As it has been pointed out, the dependency itself is not the problem as long as it is accompanied by an active energy security strategy. The necessity of a well-functioning internal market is part of this strategy. But what is the idea behind an internal market?

The fuel mix in the EU differs greatly between EU member states.¹⁴³ Some nations might be more dependent on Russian gas than the EU; Estonia and Finland are 100% dependent on Russian gas.¹⁴⁴ Other nations might be nearly energy independent due to the make-up of their fuel mix—France generates nearly 80% of its electricity from nuclear power plants.¹⁴⁵ But what they all have in common is the dependency on oil for the transportation sector as the percentage of alternative engine-driven vehicles is still very low. Still, the dependency on oil imports and the diversification of suppliers varies greatly between EU member states.

The idea of an internal energy market is that the EU takes advantage of its given single European market by enlarging EU-wide energy production, increasing the amount of alternative and renewable energy sources, creating greater network interconnectivity in the different national energy systems, and sharing their resources within the EU. This would significantly increase European energy supply security and cost efficiency.¹⁴⁶

At first the focus will be on the differences between several EU member states according to their fuel mix make-up, their own natural resources, dependence on imports, national policies and national interests in either foreign energy trade arrangements and their own energy companies, and future developments. The three largest economies, which are also the most influential nations, in terms of European politics, have been chosen to highlight the differences in their specific energy set up and interests—France, the UK, and Germany. They have been chosen not only because of their economic power

¹⁴³ Delgado, *European Energy Markets: Moving in a Common Direction?*, 2.

¹⁴⁴ Belkin, *The European Union's Energy Security Challenges*, 6, table 1.

¹⁴⁵ International Energy Agency, *Energy Policies of IEA Countries - France 2009*, report (Paris: IEA, 2009), 7.

¹⁴⁶ Belkin, *The European Union's Energy Security Challenges*, 24.

and European influence, but also because of their energy set up and dependency. France, with nuclear power occupying nearly 80% of its power generation is a highly energy independent nation. France can be referred to as a MAKE state, in terms of energy production for power generation. The UK, still relying on its own natural reserves of oil and gas, which are declining rapidly, is in transformation from a MAKE to a BUY state. Germany, with no large proven reserves of oil and gas, is an example of a classic BUY state.

1. France

Looking at the two primary energy usage sectors, France is highly independent in power generation and highly dependent in the transportation sector. Due to the lack of existing energy resources, France needs to import all of its oil and gas. The transportation sector has a 31% share of the final energy consumption and oil has a share of 33% of the primary energy supply. Nearly all of the imported oil is used in the transportation sector. A disruption of the supply of oil imports would have a severe impact on the French transportation sector. All of its imported gas (14%) is used in the power generation sector but gas only accounts for a small share in the overall domestic power generation production (12%). Nearly 80% of French power generation is derived from nuclear technology, followed by 10% derived from renewables. An increase in the amount of gas used in the power generation sector has been noted.¹⁴⁷ Nuclear technology is the backbone of France's power generation, making France independent from imports of oil and gas used for electricity. It also puts France in the position of being an exporter of electricity to its neighbouring states. In terms of importing necessary natural resources, France is fully dependent, but their fossil fuel imports are well diversified.¹⁴⁸ France imports its oil from Norway, Saudi Arabia, Russia, Kazakhstan, and Iran. Gas is imported from Norway, Russia, the Netherlands, Algeria, and Egypt.¹⁴⁹

¹⁴⁷ All numbers taken from: European Commission, France - Energy Mix Fact Sheet, "January 2007, http://ec.europa.eu/energy/energy_polica/doc/factsheets/mix/mix_fr_en.pdf (accessed 27. August 2010).

¹⁴⁸ International Energy Agency, *Energy Policies of IEA Countries - France 2009*, 7.

¹⁴⁹ European Commission, France - Energy Mix Fact Sheet.

France has identified four key principles of energy policy: security of energy supply, competitive energy supply, sustainable energy development, and equal level of energy service to all territories and all citizens.¹⁵⁰ In addition, it is France's goal to reduce its CO₂ emissions by 75% by 2050, which is a very ambitious goal. France is also willing to adhere to the EU directives with the opening of the energy market to more competition. This has also been accompanied by several side effects, which hamper an increase in market competition—the fragility of the domestic electricity transmission system and the existence of energy market tariffs.¹⁵¹

France is a key player in the construction of greater interconnection and infrastructure development inside the EU. Due to its geographic position in the centre of Europe and its great share of nuclear technologies in electricity generation, France will be able to distribute electricity accordingly as the center of a future European energy network. This would follow the European Commission directives, but still needs to be implemented accordingly.

Due to existing market tariffs, the energy market of France is controlled by a small number of companies. TOTAL (oil) and GdF Suez (gas) belong to the fifteen largest energy companies in the world.¹⁵² GdF Suez is mostly state-owned, similar to EdF, which is completely state-owned and holds the monopoly on electricity generation and distribution in France.¹⁵³ This market setup also hampers the implementation of EU directives concerning more liberalization in the European energy market in terms of increased competition.

France, due to the advantage of its geographic location and its independence in the power generation sector, can play a major role in the further development of a

¹⁵⁰ International Energy Agency, *Energy Policies of IEA Countries - France 2009*, 7.

¹⁵¹ International Energy Agency, *Energy Policies of IEA Countries - France 2009*.

¹⁵² PFC Energy, *PFC Energy 50*, January 2010, <http://www.pfcenergy.com/pfc50.aspx> (accessed 27 August 2010).

¹⁵³ The Encyclopedia of Earth, *Energy profile of France - Encyclopedia of Earth*, 23 April 2010, http://www.eoearth.org/article/Energy_profile_of_France (accessed 27 August 2010).

European energy market. Most of all, adjustments have to be made in the fragile electricity distribution network, the reduction of tariffs, and the abandonment of state-owned monopolies.

2. The United Kingdom

The United Kingdom can still rely on natural resources of oil and gas, but they are declining at a great speed. Currently, the UK still has 0.34 trillion cubic meters of gas and 3.4 billion barrels of oil as proven reserves. Compared to the largest known reserves (Russia: 43.30 trillion cubic meters of gas; Saudi Arabia: 264.1 billion barrels of oil) this is a very small share of the world's reserves.¹⁵⁴ But the UK still exports oil and is a negative net-importer of oil, which means that the UK can still rely on its own oil resources. The amount of imported gas is also a very small amount. Only 6% of all energy related net imports consist of gas. The UK has one of the lowest dependencies on imports in the EU. The highest share of imports is solid fuels (90%), but it only accounts for 16% of the primary energy supply and 7% of domestic production.¹⁵⁵ In comparison to France, the UK is dependent in both primary usage sectors—electricity and transportation—but at a lesser rate. Overall, the UK energy dependency rates at 21.3%.¹⁵⁶

The UK is the largest producer of oil (43%) and gas (39%) in the EU. Electricity is generated out of gas (40%), coal (33%), and nuclear (20%). Main import nations are Norway (oil and gas), Russia (gas and coal), and South Africa and Australia (coal).¹⁵⁷ Due to the Commonwealth, the UK has the advantage of relying on imports from former colonies.

Because of the decline of its own natural resources, which then results in a rising dependency on imports, the UK energy policy focuses on two major themes; security for

¹⁵⁴ European Union, *Europe's Energy Portal*.

¹⁵⁵ Numbers taken from: European Commission, *United Kingdom - Energy Mix Fact Sheet*, January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_uk_en.pdf (accessed 27. August 2010).

¹⁵⁶ European Union, *Europe's Energy Portal*, 2010.

¹⁵⁷ European Commission, *United Kingdom - Energy Mix Fact Sheet*.

energy supply and energy efficiency.¹⁵⁸ Like France, the UK has committed itself to reduce CO₂ emissions by 60% by 2050. The UK was actually the first country to announce a reduction of CO₂ emissions, one of the first states to develop a certificate obligation program for renewable energy, and a program to increase energy efficiency. The UK is known to be very innovative with energy policies.¹⁵⁹

The UK believes in the controlling function of the market. Again, the UK was the first nation to fully liberalize its gas and electricity markets. A regulation department—the Office of Gas and Electricity Markets (Ofgem)—has been founded to set the energy market regulations that are necessary in any competitive market.¹⁶⁰

The UK's recognition of its declining resources is an important factor for energy security. The UK is aware of the rising need to import gas, coal, and oil, but it's the import of gas that creates the biggest challenge for the UK. The geographic location of the UK as an island does not favor the construction of a gas pipeline network. A few pipelines from Norway, the Netherlands, and Belgium are in place, but further pipelines are too costly. Being dependent on further imports of gas, the UK has, therefore, to increase its LNG capacities with sufficient receiving ports and storage capacities. This will include large investment sums, but any delay will “hamper the ability of the market to respond quickly to demand and therefore jeopardize energy security.”¹⁶¹

3. Germany

Germany is highly dependent on energy resource imports for the electricity sector as well as the transportation sector. In addition, Germany does not have large amounts of natural resources other than coal. Germany ranks as the twelfth country in terms of proven reserves of coal, at an estimated amount of 6,708 million tons. Compared to the country with the largest proven reserves, the USA, with 238,308 million tons of coal, it's

¹⁵⁸ International Energy Agency, *Energy Policies of IEA Countries - The United Kingdom 2006 Review*, report (Paris: IEA, 2007), 9.

¹⁵⁹ International Energy Agency, *Energy Policies of IEA Countries - The United Kingdom 2006 Review*, 9.

¹⁶⁰ *Ibid.*, 9, 15.

¹⁶¹ *Ibid.*, 15.

a small number, but it is still the largest producer of coal in the EU.¹⁶² Germany with a 61.3% dependency on the importation of fossil fuels, is more dependent than the EU average.¹⁶³ The main importing nations are Russia and Norway for oil and gas, the Netherlands for gas, and Poland, Russia and South Africa for coal.¹⁶⁴

Germany has a fairly diverse fuel mix, consisting of oil (36%), solid fuels (25%), gas (23%), nuclear (12%), and renewables (4%). In terms of domestic production, Germany is the largest producer of coal, the second largest producer of nuclear energy, and the third largest producer of gas within the EU. Electricity is generated to nearly 50% out of coal, followed by nuclear (27%). Gas and renewables have increased their share of electricity generation significantly.¹⁶⁵

Germany plays a major role in European energy security due to its size and strategic position in Europe. Germany is constantly evolving its energy security, economic efficiency and environmental sustainability, the “three E’s” of good energy policy.¹⁶⁶ The foundation of an electricity network regulator (the Bundesnetzagentur) is one example of creating more economic efficiency, whereas the efforts of seeking a greater partnership with Gazprom, in terms of energy security can be debated. Also, the prognosticated shutdown of all nuclear power plants by 2022 will not increase energy security; it will decrease it as it is unclear to what extent the share of nuclear power generation will be overtaken by renewables or new coal plants.¹⁶⁷ The number of renewables is rising, but not enough to replace nuclear energy. New coal plants are controversial as they do not coincide with the reduction of CO₂ emissions. Right now, in Germany, the government’s proposal to prolong the life span of nuclear power plants is the number one topic of discussion, but, up to this point, there are no other alternatives.

¹⁶² European Commission, Germany - Energy Mix Fact Sheet, “ January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_de_en.pdf (accessed 27. August 2010).

¹⁶³ European Union, *Europe's Energy Portal*.

¹⁶⁴ European Commission, Germany - Energy Mix Fact Sheet.

¹⁶⁵ Ibid.

¹⁶⁶ International Energy Agency, *Energy Policies of IEA Countries - Germany 2007 review*, report (Paris: IEA, 2007), 7.

¹⁶⁷ International Energy Agency, *Energy Policies of IEA Countries - Germany 2007 review*, report (Paris: IEA, 2007), 7.

With its last country report, the IEA developed three key recommendations for Germany in order to maintain its development of the “three E’s” of energy policy:

- Reconsider the nuclear phase-out in light of the possible serious adverse consequences of its unaltered implementation for security of supply, economic efficiency and carbon dioxide emissions.
- Continue to reform the electricity and gas markets in order to set a level playing field for the development of genuine competition, particularly with respect to network access.
- Ensure a consistent, co-ordinated and cost-effective climate change and renewables policy.¹⁶⁸

All of the above-mentioned points are part of the present ongoing energy discussion in Germany. Germany promised to shutdown all of its nuclear power plants by 2022 but alternatives are missing to take over the base load provided by nuclear power generation. New coal plants, with less carbon dioxide emissions, could be one solution but investments would have to be made now. On the other side, even if new coal plants have a less carbon dioxide footprint than today’s coal plants, they still are higher than CO₂ emissions from nuclear power plants and would challenge the promised goal of Germany to fulfill the EU directive to reduce CO₂ emissions by 20% by 2020.

Right now, Germany has to make very difficult decisions: fulfilling the promise of shutting down all nuclear power plants will reduce energy security in terms of security of supply. Constructing new coal plants to take over the baseload provided by nuclear power plants will take large investment sums and could challenge the promised goal of CO₂ emission reduction. Currently, Germany is investing large sums of money in renewables technologies in order to comply with the 20% share of the renewables of the overall fuel mix by 2020.

Germany is also well set up in its security of supply, and its energy demand, in terms of in reducing its CO₂ emissions and increasing its share of renewables. But,

¹⁶⁸ International Energy Agency, *Energy Policies of IEA Countries - Germany 2007 review*, 13.

“Germany lacks a co-ordinated and integrated environmental policy.” Large sums are spent to “tackle climate change” while “other policies underline many of its good efforts.”¹⁶⁹

All three countries differ greatly in their energy mix set up, their dependence on imports of fossil fuels and their national policies. On one hand, it creates variety, but on the other hand it also creates obstacles for the further development of a European internal energy market. Since the mid-to-late 1990s, the Commission has been eager to promote the development of a single European energy market, comparable to the already existing single European market.¹⁷⁰ The commission focused on four primary objectives:

- Implementation of a single energy market with adequate competition and efficiency in the production and delivery of electricity and gas
- Lowering the prices; all EU customers are given the opportunity to choose their energy supplier
- Improve the environment
- Enhance energy security¹⁷¹

All of the EU member states are committed to these objectives and, as was verified by the selection of the three main players of the EU, all are trying to address these challenges. So far, no single energy market with adequate competition has been created. There are two reasons for this. The first one is that national interests play an important role in energy politics. Energy is too important to nations and their development to give up national control. In fact, some nations created boundaries to protect their own national energy industries.¹⁷² Second, there are technical barriers. Electricity is not storable and is dependent upon a physical network. Transportation is

¹⁶⁹ International Energy Agency, *Energy Policies of IEA Countries - Germany 2007 review*, 11.

¹⁷⁰ The single European market was created through the Single European Act in 1986, allowing free movement of goods, services, people, and capital across the EU: Belkin, *The European Union's Energy Security Challenges*, 24.

¹⁷¹ Belkin, *The European Union's Energy Security Challenges*, 24.

¹⁷² *Ibid.*, 24.

only possible over very limited distances. These characteristics of electricity favor regional fragmentation of the electricity market.¹⁷³

All member states have agreed on the opening of the energy market. However, only a few, like Britain, have created a competitive energy market. EU customers are not given the opportunity to choose their energy supplier. In Germany, competition for the electricity market was enlarged in the mid 2000s but this accounts only for the distribution of electricity, and not the production. France still maintains the concept of tariffs and monopolies, hindering other companies to even enter the market. This might increase energy security on a national level, but not on the EU level. Prices also vary greatly in the EU. There is no fixed price level for gas, oil or electricity. Germany's domestic electricity price (0.211 EUR per kWh) is more than double to Greece's (0.089 EUR per kWh). Fuel prices differ from 1.08 EUR per liter (Cyprus) to 1.63 EUR per liter (the Netherlands).¹⁷⁴

Environmental issues are highly prioritized topics for the EU. The EU signed the Kyoto Protocol in 1997, which binds nations to reduce their greenhouse gas emissions “to an average of five per cent against 1990 levels over the five-year period 2008–2012.”¹⁷⁵ So far, fifteen EU member states have already fulfilled the Kyoto Protocol agreements.¹⁷⁶ Despite the Kyoto Protocol, the EU has imposed its goal of “climate change opportunity” — 20 20 by 2020: the reduction of greenhouse gases by 20% and the increase of renewables to up to 20% by 2020.¹⁷⁷ Whether this can be achieved is not yet certain.

It is the overall goal of the EU to enhance energy security. The realization of the importance of this fact is a giant step towards greater energy security. The EU

¹⁷³ Delgado, *European Energy Markets: Moving in a Common Direction?*, 3.

¹⁷⁴ Numbers are taken from: European Union, *Europe's Energy Portal*.

¹⁷⁵ United Nations Framework Convention on Climate Change, *Kyoto Protocol*, http://unfccc.int/kyoto_protocol/items/2830.php (accessed 29. August 2010).

¹⁷⁶ European Union, *Europe's Energy Portal*.

¹⁷⁷ European Commission, *20 20 by 2020: Europe's climate change opportunity*.

commission has already launched several key papers that comment on Europe's position on energy issues as they are linked with environmental, economic, and security, with the Green Paper being the most important one.¹⁷⁸

Up to this point, as was pointed out in the last section, the EU still lacks several implementations. Besides technical and geographic characteristics, such as the inability to store electricity, or the geographic location of the UK, which complicates the exchange of energy through an open market, so far, the implementation of energy security is lacking mainly due to political, economic and national policies.

The EU has achieved a lot over the last decades, even when it comes to security issues and common foreign policies where member states tend to guard their sovereignty. When it comes to energy security and using the market as a tool to increase energy security, national interests and sovereignty issues are counterproductive. The member states have to open their markets to European-wide competition, increase interconnectivity and interoperability to allow the exchange of energy, decrease their dependence on foreign imports, continue to diversify the EU-wide fuel mix, enlarge energy efficiency and reduce the carbon dioxide footprint, and invest in new and long-term focused energy production and new technologies.

¹⁷⁸ European Commission, *Green Paper*.

IV. THE NORD STREAM PIPELINE

Europe's fossil energy resources are declining. In 2006 alone, the European Union had a demand for 532 bcm of natural gas.¹⁷⁹ If the EU was independent from imported gas and if current demand remained the same, then the EU would run out of natural gas in six to seven years. But demand does not remain the same. In 2030, the IEA expects European demand to reach 681 bcm, incorporating an annual growth rate of 1.0%.¹⁸⁰ To cover the deficiencies, the EU already imports large amounts of its energy supply.

Natural gas from Russia already accounts for 45% of the EU's gas imports¹⁸¹ and 80% of Russia's gas is transported to the European Union via the Ukraine.¹⁸² Therefore, by looking at the numbers, it is not surprising that the construction of new pipelines is encouraged by the European Commission to satisfy Europe's energy demands. The Nord Stream pipeline is estimated to reach its maximum output of 55 bcm per year by 2012.¹⁸³ This accounts for 10% of current European gas consumption.

A. OVERVIEW

“Nord Stream is more than just a pipeline. It is a new channel for Russian natural gas exports, and a major infrastructure project which sets a new benchmark for cooperation between the European Union and Russia.”¹⁸⁴

This statement is found on the webpage of the Nord Stream AG and leaves room for interpretation. It is a fact that the amount of natural gas delivered through the pipeline will significantly contribute to meet Europe's energy demands today and in the future. On the other hand, no other pipeline project before has been questioned and criticized so

¹⁷⁹ International Energy Agency, *World Energy Outlook 2008*, 110, Table 4.1.

¹⁸⁰ *Ibid.*, 110, Table 4.1.

¹⁸¹ Belkin, *The European Union's Energy Security Challenges*, 5.

¹⁸² Bendik Solum Whist, *Nord Stream: Not Just a Pipeline*, FNI Report 15, Fridtjof Nansen Institut (Lysaker: Fridtjof Nansen Institut, 2008), 9.

¹⁸³ Nord Stream, *The pipeline - Nord Stream AG*.

¹⁸⁴ *Ibid.*

often. What are the reasons that the Nord Stream pipeline has been and still is under harsh critique from nations, politicians, energy experts, security analysts, ecologist, etc.? Who benefits from the construction of the pipeline and who does not? Are there any risks associated? And what role does Russia's leading elite play in the project, if any?

To answer these questions, it is first necessary to give the reader an overview of the Nord Stream pipeline and the main facts. Second, to answer the question of the role of Russia's leading elite, it is important to have a closer look at Russia's energy policy and how it is perceived outside of Russia. Finally, the importance of the Nord Stream pipeline for Russia will be highlighted by focusing on the interconnection between the Nord Stream AG and the Kremlin. Is the Nord Stream pipeline “a major infrastructure project that sets a new benchmark for cooperation between the European Union and Russia,”¹⁸⁵ or is it simply a tool for Russian politics to increase its leverage on European politics?

1. The History

In 1997, a shared company, North Transgas Oy, was founded between Russia's Gazprom and the Finish Company, Neste, whose main task was to examine new, alternative pipeline transit routes from Russia through the Baltic Sea to Germany. In 1998, the company submitted a feasibility study that concluded that a pipeline project through the Baltic Sea would be technically feasible and economically efficient.¹⁸⁶

In December 2000, the European Union validated the Baltic Sea pipeline project as a “Project of Interest” in accordance with the Trans-European Energy Networks guidelines (TEN-E).¹⁸⁷ Between 2001 and 2004, two major German energy companies, E.ON Ruhrgas and BASF/Wintershall, became closely linked to the project, whereas the

¹⁸⁵ Nord Stream, *The pipeline - Nord Stream AG*.

¹⁸⁶ Nord Stream, *Project Milestones*, <http://www.nord-stream.com/en/the-pipeline/milestones.html> (accessed 17 January 2011). Also compare: Whist, *Nord Stream: Not just a Pipeline*, 5.

¹⁸⁷ Nord Stream, *Project Milestones*. TEN-E guidelines list and rank projects eligible for Community assistance, available at: http://ec.europa.eu/energy/infrastructure/tent_e/ten_e_en.htm (accessed 17 January 2011).

Finish company, Fortum (earlier known as Neste), pulled out of the Baltic Sea pipeline project in 2005, after Gazprom made an announcement in 2004 that made further Finish participation needless.¹⁸⁸

In 2005, the North European Gas Pipeline company (later renamed in Nord Stream AG) was founded by Gazprom (51%), E.ON Ruhrgas (24.5%) and BASF/Wintershall (24.5%).¹⁸⁹ It is remarkable that this incident had such a major political impact that Russia's President (now Prime Minister) Vladimir Putin and Germany's Chancellor (now Chairman of the Shareholders Committee of the Nord Stream AG) Gerhard Schröder were present.¹⁹⁰

In 2006, the Nord Stream AG joint venture was joined by the Dutch energy company Gasunie, which bought from E.ON Ruhrgas and BASF/Wintershall each a share of 4.5%, a total of 9%.¹⁹¹ Its youngest shareholder, the French energy provider, GDF SUEZ, joined the Nord Stream AG in 2010. Today, shares of Nord Stream AG are distributed as follows: Gazprom (51%), E.ON Ruhrgas (15.5%), BASF/Wintershall (15.5%), Gasunie (9%), and GDF SUEZ (9%).¹⁹²

Construction of the pipeline started in April 2010 and the first pipeline is estimated to be fully operational by the end of 2011. The second pipeline is estimated to be fully operational in 2012, but construction of the second line has not yet started.¹⁹³

2. The Main Facts

Nord Stream AG is a joint venture of five major European energy companies: Gazprom, E.ON Ruhrgas, BASF/Wintershall, Gasunie, and GDF SUEZ. Gazprom

¹⁸⁸ Whist, *Nord Stream: Not Just a Pipeline*, 5.

¹⁸⁹ Nord Stream, *Project Milestones*.

¹⁹⁰ Whist, *Nord Stream: Not Just a Pipeline*, 5.

¹⁹¹ Nord Stream, *Project Milestones*.

¹⁹² Nord Stream, *Our Company*, <http://www.nord-stream.com/en/our-company.html> (accessed 17 January 2011).

¹⁹³ Nord Stream, *Press release: Nord Stream passes Half-Way Mark for Line 1*, 17 November 2010, http://www.nord-stream.com/press0/press-release/article/nord-stream-passes-half-way-mark-for-line1.html?tx_ttnews%5BbackPid%5D=24&cHash=0749e524fa (accessed 17 January 2011).

remains the largest shareholder with a 51% stake. The joint venture's headquarters are located in Zug, Switzerland¹⁹⁴ and a branch office is located in Moscow, Russia.¹⁹⁵

The Nord Stream pipeline will consist of two parallel lines. Line 1 is already under construction and so far the estimated date of when the first gas reaches Europe, the end of 2011, seems accomplishable. The pipeline will have an overall length of 1,224 kilometers and will travel from Vyborg, Russia through Finish and Swedish exclusive economic zones (EEZ) to Greifswald, Germany (see Figure 4).

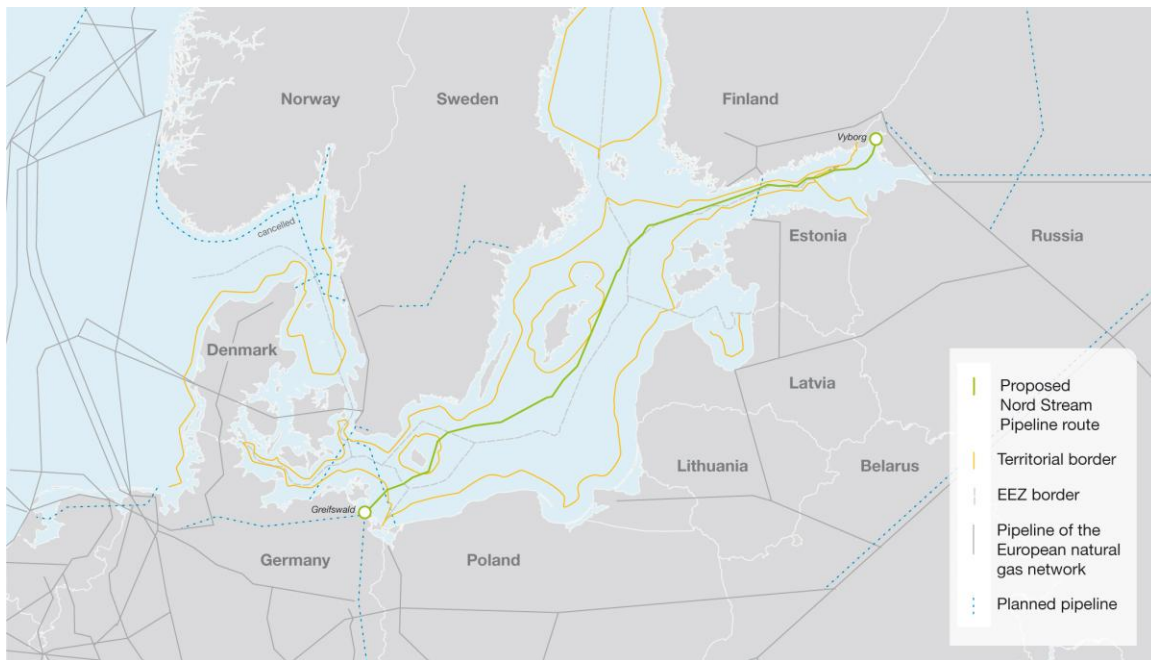


Figure 4. The Planned Pipeline Route (From Nord Stream, n.d.)¹⁹⁶

Both lines together will have a supply capacity of 55 bcm per year and will be one of the longest offshore pipelines worldwide.¹⁹⁷ The source of the gas is located in the Yuzhno-Russkoye oil and gas reserve, Yamal Peninsula, Ob-Taz bay and

¹⁹⁴ Switzerland is not part of the European Union. This fact will be more important for future analysis of the legal set up of the joint venture.

¹⁹⁵ Nord Stream, *Our Company*.

¹⁹⁶ http://www.nord-stream.com/fileadmin/Dokumente/3_PNG_JPG/4_Maps/The_Planned_Pipeline_Route_EN_rgb.jpg (accessed 17 January 2011)

¹⁹⁷ Whist, *Nord Stream: Not just a Pipeline*, 5.

Shtokmanovskoye fields.¹⁹⁸ According to Gazprom, the Yuzhno-Russkoye field is estimated to have proven reserves of approximately 1000 bcm,¹⁹⁹ whereas the Yamal Peninsula is estimated at 16 trillion cubic meters (tcm) of proven reserves. An additional 22 tcm have recently been discovered on the Yamal Peninsula and adjacent offshore fields.²⁰⁰ Concerning the Ob-Taz bay and Shtokmanovskoye fields, no information is available on Gazprom's official web page.

The overall costs of the Nord Stream pipeline are estimated at 7.4 billion EUR. The shareholder companies, proportionate to their respective share, will provide 30% of the costs. Seventy percent of the costs will be provided through direct investments by the international banking sector.²⁰¹ This amount will only cover construction costs. Operational and maintenance costs are not included, according to a study of the Swedish Defense Research Agency by Robert L. Larsson. In fact, Larsson says that the costs may have been underestimated and, according to energy and financial experts, the costs could reach as high as 10–15 billion EUR.²⁰²

Several experts have also questioned why the transit route through the Baltic Sea was chosen. In their opinion a land-based solution passing through the Baltic States and Poland (known as the Amber pipeline) or updating and building a second line on the Yamal pipeline, passing through the Ukraine and Poland, would have been much cheaper than the sea-based option. But, despite the additional costs, the Nord Stream AG rejected

¹⁹⁸ Nord Stream, *Facts & Figures*, <http://www.nord-stream.com/the-pipeline/facts-figures.html> (accessed 17 January 2011).

¹⁹⁹ Gazprom, *Yuzhno-Ruskoye*, <http://gazprom.com/production/projects/deposits/ym/> (accessed 17 January 2011).

²⁰⁰ Gazprom, *Yamal megaproject*, <http://gazprom.com/production/projects/mega-yamal/> (accessed 17 January 2011).

²⁰¹ Nord Stream, Background Information, *Nord Stream: The New Gas Supply Route for Europe*, December 2010, http://www.nord-stream.com/fileadmin/Dokumente/1_PDF/3_Background_Infos/General_Background/Nord_Stream_White_Paper_General_Background_en.pdf (accessed 17 January 2011), 2.

²⁰² Robert L. Larsson, *Nord Stream, Sweden and Baltic Sea Security*, Research, Swedish Defense Research Agency (FOI) (Stockholm: FOI, 2007), 34.

the land-based options because “there is a need to become independent of politically unstable transit states, and ... a second Yamal pipeline will not contribute to route diversification.”²⁰³

Nord Stream will deliver large amounts of gas to Europe and it will contribute toward satisfying Europe's energy demand in the long run. However, there are several facts that are disturbing about this project: the unclear financial situation, the preference of a much more costly solution because of “unstable transit states” like Poland and the Baltic States, which are all members of the European Union. In this context, it should be kept in mind that the Nord Stream pipeline project was ranked by the European Commission as a “Project of Interest” according to the TEN-E guidelines. It also remains unclear whether the numbers concerning proven gas reserves provided by Gazprom can and should be used as a solid base for enormous investments in the Russian gas sector. In addition, the distribution of shares between the shareholders also leaves room for interpretation, since Gazprom has nearly unrestricted power over the Nord Stream pipeline due to its 51% stake.

B. RUSSIAN ENERGY POLITICS

“Energy is both a factor that influences a state’s foreign policy outcomes and a potential tool of foreign policy.”²⁰⁴

This statement is valid all over the world. Today it might be even more valid than it was in history, but energy has always been the most important driver for a nation's economy and wealth. Energy politics and energy matters are closely interconnected. While the economy of a nation depends on energy to produce its goods, energy dependence has also become an issue for every household, at least in developed countries.

Energy is the necessary fuel to keep the engines of the economy and of everyday life running. Therefore, it is only natural that energy companies and the government are

²⁰³ Whist, *Nord Stream: Not just a Pipeline*, 20.

²⁰⁴ Brenda Shaffer, *Energy Politics* (Philadelphia: University of Pennsylvania Press, 2009), 28.

engaging in the issue of the rising energy demand together. Companies rely on the government to create necessary conditions for a favorable investment atmosphere whereas the government relies on the companies to provide the necessary amount of energy needed. Both sides depend on each other. In times of diminishing resources and a greater dependency on foreign resources, as it is with the case of the European Union, energy politics become an even greater issue on the work agenda of foreign policy. For this reason, it is not surprising that Russian energy politics and foreign policy are closely interconnected.

This chapter will focus on Russian energy politics and its scope. How are Russian energy politics defined and how close are energy and foreign politics interconnected? What are Russia's intentions? And how are Russian energy politics perceived outside of Russia?

1. The Russian View

In 2009, Russia released its current National Security Strategy: National Security Strategy of the Russian Federation up to 2020. This paper is the Kremlin's main paper that describes how Russia wants to defend and secure its national security and defines areas of interests for national security.²⁰⁵ Energy occupies a central role for Russian national security. It is perceived in three different ways: as a matter of future trends of development, ensuring Russia's national security, and economic growth. Russia views its "resource potential" as a possibility to "reinforce the influence of the Russian Federation on the world stage" and aspires "ownership of energy resources, including in the Near East, the Barents Sea Shelf and other parts of the Arctic, the Caspian Basin, and in Central Asia" as a tool for international politics.²⁰⁶

²⁰⁵ Security Council of the Russian Federation, *National Security Strategy of the Russian Federation up to 2020* (Moscow, 12 May 2009).

²⁰⁶ Ibid., bullets 9, 11.

Concerning the insurance of national security, “an intensification of competition over insufficient raw material, like energy” is viewed as a possible threat to Russia's national security.²⁰⁷

In terms of economic growth “the loss of control over national resources and the worsening of the condition of the industrial and energy resource base” possess a direct threat to Russia.²⁰⁸ Energy security is viewed as a “long-term direction for national security.”²⁰⁹

Russia has the world's largest proven natural gas reserves. With 44.9 tcm it owns 30% more than Iran, which has the second largest reserves of natural gas.²¹⁰ Fossil energy resources are highly valued products that the whole world is interested in. Three European nations, Germany, Italy and France, belong in the top five worldwide importers of natural gas, which makes the EU the largest gas market.²¹¹

As has been pointed out by Olikier, et al., “Russia's foreign policy is driven by the same goals as Russia's domestic policy.”²¹² This is especially the case with Russia's energy policy. Even though Russia contains the world's largest proven reserves of natural gas and is the second largest producer of gas (663,6 bcm per year), due to its own domestic consumption (457 bcm per year) and international export agreements (241 bcm per year),²¹³ Russia needs to import gas to fulfill its domestic and international commitments. Therefore, it is not surprising that Russia defines energy as a central matter of national security and Russia tries to maximize its influence over energy resources

²⁰⁷ Security Council of the Russian Federation, *National Security Strategy of the Russian Federation up to 2020*, bullet 47.

²⁰⁸ Security Council of the Russian Federation, *National Security Strategy of the Russian Federation up to 2020*, bullet 55.

²⁰⁹ Ibid., bullet 60.

²¹⁰ European Union, *Europe's Energy Portal*.

²¹¹ Ibid.

²¹² Olga Olikier et al., *Russian Foreign Policy: Sources and Implications* (Arlington: RAND Corporation, 2009), 5.

²¹³ Ministry of Energy of the Russian Federation, *Energy Strategy of Russia for the period up to 2030*, “13 November 2009, [http://energystrategy.ru/projects/docs/ES-2030_\(Eng\).pdf](http://energystrategy.ru/projects/docs/ES-2030_(Eng).pdf) (accessed 27 January 2011), 134-136: 2008 actual figures.

within Russia and the post-soviet sphere, which Russia considers to be their area with “privileged interests,” as can be found in Friedman's: *The Medvedev Doctrine and American Strategy*.²¹⁴ To not become dependent on imports of fossil fuels itself, Russia tries to bring the resources within the post-soviet sphere under its control. Russia believes that energy is the new political tool that helps to rebuild Russia's justified right to being perceived as a world power. This can only be achieved by “strengthening Russia's market position, maximizing its export capabilities and using gas supplies for the purpose of Russia's political interests.”²¹⁵ The current Energy Strategy of Russia even recommends a “strengthening of the state participation and control in the (...) gas sector.”²¹⁶ “The state must support Russian companies in the struggle for resources and markets and vice versa Russian companies must support the state in the struggle for political interest and influence.”²¹⁷

During Putin's time as President of Russia, the energy sector underwent a complete transformation. Putin realized how much political potential lay within Russia's natural resources. This meant that the state had to restore its control over the energy sector “and should serve as a basis for restoring the Russian state, its economy, military, and ultimately its pride.”²¹⁸ From the Russian perspective, this has been done very effectively. Putin managed to reduce the influence of Russia's oligarchs drastically, which have ascended during Yeltsin's Presidency, as he was politically dependent on their power and influence.

The gas-producing giant, Gazprom, is officially a privatized company, but it is state owned. It is the government that uses Gazprom's economic power to boost the

²¹⁴ George Friedman, *The Medvedev Doctrine and American Strategy / STRATFOR*, 2 September 2008, http://www.stratfor.com/weekly/medvedev_doctrine_and_american_strategy (accessed 20 January 2011).

²¹⁵ Roderick Kefferpütz, EU-Russian natural gas relations - Pipeline politics, mutual dependency, and the question of diversification,“ in *EU-Russia gas connection: Pipes, politics and problems* (Turku: Liuhto, Kari: Electronic Publications of Pan-European Institute 8/2009, 2009), 101.

²¹⁶ Ministry of Energy of the Russian Federation, *Energy Strategy of Russia for the period up to 2030*, 38.

²¹⁷ Kefferpütz, EU-Russian natural gas relations—Pipeline politics, mutual dependency, and the question of diversification, 101.

²¹⁸ *Ibid.*, 98.

Russian economy and extend its political influence. Therefore, it is important for Russia to maintain close state control over the energy sector. Foreign investment, which is crucial for the development of the Russian economy, is limited in areas of “strategic importance of state security and defense.”²¹⁹ The energy sector is of strategic importance for Russia as it has been stressed out within the National Security Strategy. The limitation of foreign investment naturally reduces the pace of Russia's economic growth. The Russian government is well aware of that. An open market would attract a large number of foreign investors, and competition has always been a main driver for a stable and growing economy, but this would also reduce Russia's political potential because Russia's international political power depends on energy. This cannot be allowed by the Russian state; it is a natural act of protectionism.

Thus, the Kremlin believes that, maintaining close state control over the energy sector is crucial for Russia. By creating a state owned monopoly over the gas market (Gazprom is already one of the largest and most influential gas producers and suppliers worldwide), the government controls the supply side of natural gas. Speaking economically, a larger demand over a smaller supply increases the possibilities for the supplier. With the establishment of a monopoly, the supplier is able to have a very elastic price policy and increases the dependence of the consumers. The Russian government has very well understood the basic principles of a market economy and price politics. “It is quite natural that state-owned companies—Transneft and Gazprom—are responsible for oil and gas transit under the regulation of the Federal Energy Commission.”²²⁰

On that account, it makes sense for Russia to enlarge its influence over the energy sector, not only in Russia, but also in adjacent areas. By not only controlling its own natural resources, but also of their neighbors (Russia's area of privileged interests),²²¹ Russia's position as one of the largest producers and suppliers of gas is being further manifested. It is part of Russia's strategy “to lock in supply by consolidating control over

²¹⁹ Kefferpütz, EU-Russian natural gas relations—Pipeline politics, mutual dependency, and the question of diversification, 99.

²²⁰ Viktor I. Kalyuzhny, *Commentary to Energy & Security - Toward a New Foreign Policy Strategy* (Washington D.C.: Woodrow Wilson Center Press, 2005), 192.

²²¹ Friedman, *The Medvedev Doctrine and American Strategy*.

strategic energy infrastructure throughout Europe and Eurasia.”²²² This further increases the possibility of energy being used as political leverage.

Russia also knows that as a supplier, it is also highly dependent on consumers’ demand. This especially accounts for the gas industry and is a potential threat for Russia. Gas cannot be transported as easily as oil. Only two options exist and both of them require large investments and are limiting factors for the supplier's possibilities of diversification—the transportation of gas as liquefied natural gas (LNG) via ship or via pipelines. If the consumers’ demand decreases, it is very difficult for the supplier to re-route gas to other interested customers. Also, the high investment costs create long dependencies for consumers as well as suppliers. In light of this, it is understandable, from a Russian perspective, that Putin made energy security a main topic at the G8 summit in 2006 in St. Petersburg: “Russia insisted on providing demand guarantees for the producers, and sharing responsibilities and risks among energy suppliers, consumers, and transit states.”²²³ Russia must not only cover its own domestic demand but also the demand of its interconnected consumers and must maintain the production of energy and supply of gas profitable, which means that prices must be affordable to attract future investors in new pipeline projects or LNG terminals. Russia is not only responsible for its own energy security, but also, to some degree, for the energy security of its customers, like Europe.²²⁴

Both pipelines and LNG terminals are costly to build, maintain and repair. Once their life span has been reached, they need to be replaced. Fourteen percent of Russia's pipeline infrastructure needs to be renovated and an additional 20% have already been used for more than twenty years. This will cost the Russian state tens of billions of dollars, money that Russia does not have.²²⁵ Therefore, to be able to fulfill its domestic and international commitments, Russia's only chance is to further promote its attempt to

²²² Ariel Cohen, Russia: The flawed Energy Superpower, “in *Energy Security Challenges for the 21st Century: A Reference Handbooks* (Washington D.C.: Library of Congress Cataloging-in-Publication Data, 2009), 93.

²²³ Ibid., 93.

²²⁴ Viktor I. Kalyuzhny, Commentary, 191.

²²⁵ Cohen, Russia: The flawed Energy Superpower, 102.

create an energy monopoly in Eastern Europe and Central Asia. In addition, Russia is seeking strategic partnerships with other gas producers like Iran, Algeria, Libya, Nigeria and some Central Asian countries. The focus here lies on a proactive penetration of the European market to be able to influence prices and consumption rates and acquire new contracts and additional investments.²²⁶

In the Russian view, the creation of a state-owned gas monopoly for Europe and Central Asia, greater dependency of Europe on Russian gas, and gaining control over the energy sectors of the Russian post-soviet sphere of influence contribute to Russian energy security, its national security, enhance Russia's wealth and promote Russia's claim as a world power. Energy is the leverage to advance Russia's political influence and is therefore placed in “the center of Russian diplomacy.”²²⁷

2. The External Perception

As was pointed out in the previous chapter, Russia's main incentive within the energy sector is gaining control. Control over a nation's economy must, per se, not be a bad thing, but Moscow is not only gaining control over its domestic energy sector but also over international energy markets, especially its post-soviet neighbors. This is the reason why international consumers of Russian gas should be worried because it largely reduces their leverage on energy politics (even within their own nation) and increases Russia's sphere of influence.

Lacking transparency in the Russian energy sector is another fact that is reason for worry by international customers. For them, it is difficult to base investment decisions on unreliable information about future production rates of natural gas, the state of development of natural gas fields and the unclear financial situation of Russia's largest gas company, Gazprom. According to a report from Chatham House based on a seminar

²²⁶ Edward Christie, European security of gas supply - A new way forward,“ in *The EU-Russia gas connection: Pipes, Politics and Problems* (Turku: Liuhto, Kari: Electronic Publications of Pan-European Institute 8/2009 8, 2009), 12–13.

²²⁷ Cohen, Russia: The flawed Energy Superpower, 93.

discussing transparency in Russia and Eurasia and energy security in Europe in 2008, “50% of the money Gazprom invests in development simply disappears.”²²⁸

In addition, uncertainty remains with importing nations as to how Moscow will be using energy as a political tool to enlarge its international influence and to enforce Russia's international interests. From an economic point of view, the Russian energy sector does not currently reflect an investment-friendly atmosphere for international investors. This is also due to the fact that Moscow has restricted foreign investment in the energy sector as a matter of strategic interests.²²⁹ Russia has used its energy weapon before and for some critics, it is not a question of if Russia is using the energy weapon again, but when.

a. Gaining Control

Russia's expansion of its sphere of influence has so far mainly influenced its domestic market and adjacent post-soviet neighbors. Under Putin's presidency, the government started to retrieve control over the energy sector within Russia. The most prominent case is the dismantling of Yukos, one of the largest independent oil companies in Russia. Yukos was confronted with the charge of tax evasion and its CEO Mikhael Khodorkovsky was imprisoned. In 2006, all assets of the company were put under state control and the company had to declare bankruptcy.²³⁰ In December 2010, Khodorkovsky was again sentenced to an additional six years in prison, a verdict that was strongly opposed all over the world and was the reason for a discussion at the Human

²²⁸ Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, 8.

²²⁹ Christie, *European Security of Gas Supply—A new way forward*, 13.

²³⁰ Kefferpütz, *EU-Russian natural gas relations - Pipeline politics, mutual dependency, and the question of diversification*, “ 98.

Rights Committee of the European Parliament in January 2011.²³¹ Most striving about the second trial that Putin himself found Khodorkovsky guilty even before the court had announced the verdict, which leaves room for interpretation concerning the independence of the Russian legal system.

The domestic gas market is controlled by Russia's largest private company, Gazprom. The company accounts for approximately 85% of Russia's gas production and owns the entire gas transportation system: Unified System of Gas Supplies (USGS). In addition, Gazprom has the monopoly over exporting gas abroad, which has been confirmed by the 2006 law of gas exports.²³² Besides Gazprom, a few independent companies are present in the domestic gas industry, and Gazprom officially welcomes their participation. It is assumed that independent gas production will help to satisfy growing domestic demand and will also put Gazprom in the position to use more of its produced gas for the “more lucrative international market.”²³³

Outside of Russia, Moscow retrieved control over large parts of the energy markets of former members of the Soviet Union. Most of these actions are directed towards greater control of the gas distribution network in Europe. In the view of Russian officials, a situation where “neighboring states should trade their sovereignty for energy security” is favorable and that “Russia should lead the Community of Independent States (CIS) through an economic occupation of neighboring states.”²³⁴ In 1998, Gazprom bought large shares of the Bulgarian gas company, Topenergy.²³⁵ Moscow tried to destabilize the government of Georgia for over a decade by supporting the pro-Russia territories of South Ossetia and Abkhazia. Georgia's opening towards the West and plans to allow transits of gas from Central Asia to Europe circumventing the Russian-controlled

²³¹ European Parliament, *Human Rights Subcommittee discusses Russian Khodorkovsky case*, 11 January 2011, http://www.europarl.europa.eu/news/public/story_page/015-11414-010-01-03-902-20110110STO11394-2011-10-01-2011/default_en.htm (accessed 25 January 2011).

²³² Nina Poussenska, Analysis - Gazprom and Russia's Great Eastern Pipe-Dreams, “*Russian Analytical Digest* (Research Centre for East European Studies), No. 58 (April 2009), 5–6

²³³ Ibid., 6.

²³⁴ Olikier et al., *Russian Foreign Policy: Sources and Implications*, 95.

²³⁵ Cohen, *Russia: The flawed Energy Superpower*, 94.

pipeline network resulted in the Russian-Georgian conflict in 2008.²³⁶ Other neighboring states have been offered moderately priced energy supplies in exchange for control of their respective energy infrastructure. States that did not comply were “immediately forced to pay the same prices as European customers or abruptly lose supply during the winter.”²³⁷ The winter crisis of 2006–2007 in the Ukraine, which resulted in a shortage of gas distributed in Europe, also resulted in “establishing a shadow Russian Swiss registered company, RosUkrEnergo, to handle Turkmenistan's gas supplies to Ukraine ending Kiev's access to an additional supplier.”²³⁸ Moscow also has long-term contracts with Kazakhstan that envision the transfer of Kazakh gas via the Russian pipeline network. Officially, Moscow is interested in Central Asian energy supplies in order to “preserve Russia's northern gas fields for next generations, avoid boosting investment in their development, and decrease the pressure on the markets presenting strategic interests for Russia itself” but it also gives Russia the opportunity to gain control over the Central Asian energy market and therefore the possibility to “dictate prices—especially in Europe.”²³⁹

But Moscow's power already reaches into the European Union. Latvijas Gaze, Latvia's gas distribution monopoly, is owned to 34% by Gazprom and to 16% by Itera, an independent Russian gas company. Both Russian stakeholders have used their power over the Latvian energy market to strengthen their monopoly position. According to Chatham House, they managed to delay a governmental decision on alternatives to Russian gas and further forced the government to allow the construction of a Gazprom-owned power plant. In addition, it is feared that Gazprom and Itera might use their leverage to influence the political party system since public funding does not exist in Latvia.²⁴⁰ This is already threatening to the European Union because it gives Russian

²³⁶ Shaffer, *Energy Politics*, 42.

²³⁷ Shaffer, *Energy Politics*, 43.

²³⁸ Ibid., 44.

²³⁹ Cohen, *Russia: The flawed Energy Superpower*, 97.

²⁴⁰ Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, 12–13.

state-owned companies like Gazprom the ability to directly influence the political system in the EU. Latvia and the other Baltic States joined the EU in 2004.

It is part of Russia's strategy to “maximize its economic and geostrategic advantages,” to “create customer country dependency through locked energy demands and consolidating gas supplies through long-term contracts with Russian state-owned producers and pipeline monopolists.”²⁴¹ Therefore, Russia's strategy of maximizing its influence over large parts of the Central Asian energy market is being perceived as dangerous, especially in some European countries and to the European Union as a whole.

b. Lacking Transparency and the Investment Atmosphere

The lack of transparency about the true financial situation of Gazprom, due to the increased level of corruption and the poor condition of the Russian pipeline network, is another reason to worry for international dependent consumers. In addition, the relatively slow pace of exploring new gas fields and the restriction on foreign investments fuel the discussion that creates an unfavorable investment sphere for international investors.

The state-dominance over Gazprom, which allows room for “dubious and non-transparent practices,” is feared by international consumers.²⁴² Moscow uses any possible means to further strengthen the power of Gazprom, therefore, also the power of the Russian state, and reduces the power of competing companies. The 2006 Law of gas exports, which grants Gazprom the monopoly over the very lucrative international market, is conceived as a discriminative law in Western democracies. It not only forbids external companies from entering the Russian gas market, but also other Russian firms from exporting gas, even if the market was large enough for additional competitors. Moscow would then lose its control over the energy sector and energy could only be used

²⁴¹ Cohen, Russia: The flawed Energy Superpower, 93.

²⁴² Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, 8.

as a political tool in international relations. Officially, state capitalism has been rejected by President Medvedev, but that is the way Moscow behaves, from an external point of view.²⁴³

In 2006, Royal Dutch Shell had to sell the majority of its stake in gas fields to Gazprom due to environmental breaches. Just after Gazprom's entry, Putin announced that the environmental breaches would be legally resolved in conjunction with the governmental environmental agency. British Petroleum (BP) had to sell its 62.9% stake in an exploration company for an Eastern gas field to Gazprom because it was unable to fulfill its production rate. The interesting thing about this incident is that Gazprom holds the monopoly over the Russian gas pipeline network and has refused to allow BP to connect to it.²⁴⁴ Western companies have no insight into the financial situation of Gazprom and several promising deals were called off by Western companies because they did not want to “funnel profits to off-shore accounts or to intermediary firms.”²⁴⁵ RosUkrEnergo, a Ukrainian company largely owned by Gazprom, did hand out 730 million US dollars as dividends from its 750 million USD earnings in 2005.²⁴⁶

So far, Western governments and companies have done little to eliminate dubious and non-transparent practices within the Russian energy sector, even if they present a clear violation of the Energy Charter Treaty (ECT).²⁴⁷ It might be due to the fact that energy is such a profitable market that dubious and non-transparent practices are condoned.

It is also unclear whether Gazprom will be able to fulfill its international commitments concerning sufficient gas exports. This is due to rising domestic gas

²⁴³ Cohen, *Russia: The flawed Energy Superpower*, 98.

²⁴⁴ Cohen, *Russia: The flawed Energy Superpower*, 99.

²⁴⁵ Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, 9.

²⁴⁶ *Ibid.*, 11.

²⁴⁷ *Ibid.*, 9.

the ECT has been ratified by every member of the European Union and the EU as a legal body. Russia has so far refused to ratify the treaty.

consumption, an aging existing pipeline infrastructure, lack of investments in replacing or renovating pipelines, and in the exploration of additional necessary gas fields.

Already, Russia has to import gas to satisfy its domestic demand and international commitments, and both domestic and external consumption are forecast to rise significantly. Domestic demand is supposed to rise from 457 bcm in 2008 to 605 bcm in 2030. Exports are to increase from 241 bcm to 349 bcm. Even with Russia's forecasted production rate of 885 bcm by 2030, the total numbers are not achievable without importing additional gas.²⁴⁸ How is Russia going to fulfill its commitments? A rise in the domestic gas price and an increase in energy efficiency would contribute to loosening the pressure on the gas production, but it will not be sufficient.²⁴⁹ Also, Russia's forecasted production rate leaves room for interpretation. The production rates of three major gas fields located in Western Siberia are declining. They account for about three-quarters of Russia's gas production.²⁵⁰ In addition, Russia faces great difficulties preparing new fields for exploration on the Yamal Peninsula and the Barents Sea (Shtokmanovskoye field).²⁵¹ This is mainly due to harsh weather conditions and the unfavorable location of the fields. The Shtokmanovskoye field is located 300 miles offshore in the Barents Sea and sea depths of more than 300 meters are not uncommon.²⁵² Gazprom does not have any experience in deep-sea offshore exploration. The resources are there but they are hard to reach and require huge investments. According to the Russian Energy Strategy, 2030 forecast investments for gas production alone could be as high as 194 billion USD.²⁵³

²⁴⁸ Ministry of Energy of the Russian Federation, Energy Strategy of Russia for the period up to 2030, 134-136; 146-147.

²⁴⁹ Russian domestic gas price is not set by the market but reflects a fixed price set by the Federal Tariff Service. Domestic gas prices are considerably lower than export prices. Laura Solanko and Pekka Sutela, Too Much or Too Little Russian Gas to Europe?, *Eurasian Geography and Economics* (Bellwether Publishing) 50, No. 1 (2009): 58-74, 66.

²⁵⁰ Cohen, Russia: The flawed Energy Superpower, 102.

²⁵¹ Jeffrey Mankoff, Eurasian Energy Security, *Council Special Report* (Council on Foreign Relations), no. 43 (February 2009), 8.

²⁵² Cohen, Russia: The flawed Energy Superpower, 102.

²⁵³ Ministry of Energy of the Russian Federation, Energy Strategy of Russia for the period up to 2030, 147.

Additionally, new production sites have then to be connected to the pipeline network to transport the gas to the consumer. The Russian pipeline system is largely based on the system that was built under the Soviet regime. Fourteen percent needs to be fully replaced or renovated and another 20% have already been in use for more than 20 years.²⁵⁴ Up to 289 billion USD are forecasted as a necessary investment in the gas transportation sector.²⁵⁵ Pipelines have an unfavorable implication as they depend on long-term contracts. Once established, they cannot be moved, meaning that diversification of markets cannot be as easily accomplished as with oil that is largely being transported via sea, rail or road. LNG would be an option that would allow more flexibility of diversification, but the investment costs of LNG terminals are also very large and Russia does not see its future in the LNG business. So far, Russia has only built one LNG terminal in Sakhalin. It is estimated to reach its full capacity of 90 million tons of LNG in 2030. Overall, Russia's share of LNG is not estimated to extend 13 bcm of gas per year.²⁵⁶ This equals only one fourth of the transportation rate of the Nord Stream pipeline alone.

Russia's attempts at controlling the Eurasian and Central Asian energy sector and defending its pipeline monopoly position, its dubious financial practices, its unclear financial situation regarding its true production and transport capabilities do not contribute to a strong belief in the Russian energy industry. From an external point of view, Russia's energy sector remains questionable.

C. THE NORD STREAM PIPELINE AND THE KREMLIN

The Nord Stream pipeline is the latest success story for Gazprom and for Russia. With the creation of the pipeline, Russia established a long-term relationship with Germany, France and Denmark. The UK will also receive a respective share of the

²⁵⁴ Cohen, Russia: The flawed Energy Superpower, 102.

²⁵⁵ Ministry of Energy of the Russian Federation, Energy Strategy of Russia for the period up to 2030,“ 147.

²⁵⁶ Kari Liuhto, The EU needs a common energy policy—not separate solutions by its member states,“ in *The EU-Russia gas connection: Pipes, politics and problems* (Turku: Liuhto, Kari: Electronic Publications of Pan-European Institute 8/2009, 2009), 110.

transported gas. All four are very reliable customers with credible forecasted consumption rates and strong economies. So far, Russia has been a reliable energy supplier to Western Europe and the Nord Stream pipeline will further contribute to its reliability and strengthen the relationship. The German-Russian relationship is traditionally very strong.²⁵⁷ The demanded amount of gas will be received at the contractually agreed upon price. There should not be anything to worry about—or should there

Europe is dependent upon Russian gas and it is wise to create stable connections to the largest known reserves in the world, which are in close proximity to Europe, but it must be kept in mind that Western European firms are only the junior partners in the Nord Stream consortium. Gazprom owns Nord Stream to 51% and Gazprom is owned and controlled more than 50% by the Russian government. This alone is, per se, not a bad thing, but keeping in mind Russia's past behavior with other customers, this could become a problem.

Because of the distribution of the shares, only Gazprom has the power to make any adjustments within the company. This includes direct management influence, but also changes in the transportation capacity and prices. The management must ensure the profitability of the company; if it cannot be ensured, then such measures might become necessary to increase profitability. The European shareholders, representing the customer's side, do not have any say in such matters. This gives the Russian government the ability to legally exert direct influence on the company, which, as a result, might lead to a direct impact on some parts of Europe's industrial sector. “In the short term, the cost of lack of supply is much higher and more dangerous than the cost of lack of payment of supply,” meaning that importers are always more vulnerable than exporters.²⁵⁸ Energy as a means of foreign policy is always applied short term. This possibility has to be kept in mind by the “junior partners” of the Nord Stream consortium.

²⁵⁷ what is known as “Ostpolitik” began under Chancellor Willy Brandt in the 70s to overcome the differences between the East and the West and to allow both German states to come closer to each other.

²⁵⁸ Shaffer, *Energy Politics*, 39.

Europe needs also to be aware of the fact that they don't have any ability to influence the production rates of gas in Russia or control which gas fields are used as the supply source for the Nord Stream pipeline. The monopoly for exploiting Russia's gas fields for exports, as well as the Russian gas pipeline network belongs to Gazprom. The official website of Nord Stream refers to which gas fields will be used to supply sufficient gas from Russia to Europe in order to enlarge its transparency, which has been highly debated in the past, but this does not imply any guarantees or legal claims.²⁵⁹ If supply runs short for any reason, then the demand will have to adapt or will be adapted. This is especially worrisome with natural gas because storage facilities are expensive to build and are not common.²⁶⁰

The Kremlin's influence over Gazprom and Nord Stream is also apparent when looking at the composition of the management. The Shareholders Committee of Nord Stream is chaired by Gerhard Schröder, former Chancellor of the Federal Republic of Germany. During his term in office, the contract for the creation of the consortium was signed. Schröder and Putin, whose relationship has extended into their private lives, were both present. Alexei Miller is also a member of the Shareholders Committee. Miller is also the Chief Executive Officer (CEO) of Gazprom and a close friend of Putin. The Board of Directors of Gazprom is chaired by Viktor Zubkov, who is also the First Deputy Prime Minister of the Russian Federation. His predecessor, Dmitry Medvedev, is now the President of the Russian Federation. Putin, who was the President of the Russian Federation before him, is now the Prime Minister of Russia. This shows how closely interconnected the two companies are and how tight the connection with the Kremlin is. No decision within Gazprom, and therefore within Nord Stream, is made without silent approval from Moscow.

The participation of Gazprom in Nord Stream has opened a door for Europe to gain access to Russia's gas resources, but it has also opened a door for the Kremlin to intervene in European business and perhaps even politics. The energy sector is one of the

²⁵⁹ Nord Stream, *Facts & Figures*.

²⁶⁰ Solanko and Sutela, Too Much or Too Little Russian Gas to Europe?, 60.

most important industrial sectors in Europe, and, therefore, mutual dependency between the energy sector and politics is assumed to exist.

The direct connection between Russia and Western Europe has another main advantage for Moscow. Russia does not now have to deal with Belarus, the Baltic States, the Ukraine and Poland as transit states anymore. “Supply arrangements that have transit states in between the supplier and the consumer are less stable than direct ones.”²⁶¹ In light of this, the direct connection must be a win-win situation for Russia as the supplier, or the European states as the consumers. But who can draw more advantages out of this relationship: Europe or Russia? “Nord Stream is an EU priority energy project and important in completing the European energy grid.”²⁶² But Nord Stream is actually a project that divides Europe into two parts. The Western European Union member states that profit from the pipeline and the Eastern European Union member states that are left out. In fact, Nord Stream is not a pipeline that has been created between Russia and the European Union but between Russia and a few member states. Russia prefers to deal with EU member states alone because this increases Moscow's potential for price discrimination.²⁶³

Sweden, as one state bordering the Baltic Sea, has a very special issue with the Nord Stream pipeline and Moscow's influence. The Nord Stream pipeline will cross through Sweden's EEZ. This is not a problem per se. What Sweden is worried about is the vulnerability and the prominence of the pipeline. This prominence might lead to increased attraction for the pipeline by terrorists who could view it as a potential target. This, itself, gives reason for concern but Sweden also fears an increased military presence by Russia in the Baltic Sea, which could result in a “source of political friction.”²⁶⁴ Sweden also feared that a planned maintenance platform close to the island of Bornholm could be used as a sensor platform for intelligence purposes.²⁶⁵ However, Nord Stream

²⁶¹ Shaffer, *Energy Politics*, 40.

²⁶² Günther Oettinger, EU Energy Commissioner, 9 April 2010, available at: http://www.nord-stream.com/en.html?no_cache=1 (accessed 27 January 2011)

²⁶³ Cohen, *Russia: The flawed Energy Superpower*, 93.

²⁶⁴ Larsson, *Nord Stream, Sweden and Baltic Sea Security*, 8.

²⁶⁵ *Ibid.*, 8.

decided not to hold on to the construction of a maintenance platform. Sweden's position is understandable since Sweden remained neutral during the Cold War and, therefore, paid very close attention to the protection of its sphere of interests in the Baltic Sea and its territorial waters. It remains to be seen whether Sweden's fear of an increased Russian military presence will prove valid.

The last fact that points out Moscow's control over the pipeline and its political leverage is the location of the office and its legal implications. The headquarters of the Nord Stream consortium is located in Zug, Switzerland and another office is located in Moscow. This implies several advantages for the Kremlin. First, the chosen location in Moscow creates an even tighter connection between Russian government officials, Gazprom and Nord Stream; Gazprom's headquarters is also located in Moscow. Second, picking Switzerland as the location for the main headquarters was a clever move. Switzerland is not part of the European Union and hence it does not fall under the jurisdiction of the European Union. This accounts for companies registered in Switzerland as well. Legal claims by the European shareholders cannot be brought up in front of a European court, but have to be addressed in Switzerland. The legal leverage is reduced for both sides, but it is unlikely that Gazprom will make use of the Swiss jurisdiction anyway. Gazprom already holds all legal rights within the company. Switzerland is also well known for its very secretive banking sector. The whole system is based on confidentiality. This, of course, makes it difficult for external observers to gain an inside view of the financial situation of Nord Stream and could give Gazprom the ability to have dubious money transfer operations. This is not to say that Nord Stream is nothing but a dummy company for dubious money transfer operations. It is also not the intention to discredit the Swiss financial system, By no means! But, it is worth noting that RosUkrEnergo, the Ukrainian-Russian gas company, which is considered to be a dummy company for Gazprom, is also registered in Switzerland.²⁶⁶ As has already been pointed out in previous chapters, RosUkrEnergo attracted some attention in the past due to

²⁶⁶ Shaffer, *Energy Politics*, 44.

dubious money transfers.²⁶⁷ The future will show to what extent the critics of Russia's influence over the Nord Stream pipeline is right.

Russia's influence over Nord Stream is immense. This is a fact that Europe, its member states, and the involved companies will have to be aware of. Russia's tendency towards non-democratic behavior, a legal system that seems to be based more on randomness than on the rule of law, and the lack of transparency in the energy sector fuels the discussion. So far, Russia has been a very reliable supplier of energy for the EU and its member states. What would Russia gain from starting a fight with the EU over energy? After all, the EU is the world's largest energy market and promises to be a very lucrative market for Russia in the future. And maybe the European Union is not so vulnerable after all. The overall fuel mix of the EU, its member states, and its economic power all point in the right direction. A concluding assessment of Europe's opportunities and risks associated with the pipeline and Russia's influence will be approached in the following analysis of this thesis.

²⁶⁷ Chatham House, *Transparency in Russia and Eurasia and Energy Security in Europe*, 11.

V. NORD STREAM: IMPACT ON EUROPEAN ENERGY SECURITY

Within the previous chapters, the founding stones have been laid to now further continue with the analysis of European energy security and the impact of the Nord Stream pipeline.

The second chapter gave an overall description of the terminology of energy security. The key principles of energy security have been presented and described followed by a description of the interpretation and implementation of energy security in the European context.

The third part started off with a depiction of Europe's energy situation, divided into the external market, Europe's main sources of fossil fuels and overall fuel mix, and the internal market, a description of the energy fuel mix of various European countries and their priorities in energy security. A nation's priorities do not always coincide with European priorities. This situation creates possible challenges for the EU.

The focus then switched to a short presentation of the Nord Stream pipeline, its history and main facts. Because of Russian involvement in the project, a more thorough description of Russian energy policies and their external perception was thought necessary. The chapter concluded with a description of the involvement of the Russian state in the Nord Stream pipeline project.

It is the goal of this analysis to combine the above-mentioned facts and evaluate to what extent the Nord Stream pipeline impacts European energy security. Does the pipeline acknowledge the key principles of energy security? What are the positive effects for Europe? What are the negative effects for Europe? How is Europe going to outweigh these effects? Is Europe's diverse energy fuel mix the solution or the further continuation of the internal market, or maybe both? Has the Russian influence over Nord Stream been overestimated? Is the Nord Stream pipeline Europe's best option to secure its natural gas demand in the future? How dependent is Europe on gas in the long run?

To recall, six key principles of energy security have been selected to describe the numerous facets of energy security. Of course, energy security is not limited to these principles but they present the most important aspects of energy security: diversification, resilience, information, reality of integration, globalization of energy security, protection of the supply chain.²⁶⁸

As has been pointed out in Chapter II, the EU has understood the importance of the key principles of energy security. This is especially apparent within the Green Paper, Europe's strategy for sustainable, competitive and secure energy.²⁶⁹ It has also been pointed out that Europe lacks implementation of the key principles of energy security due to the particular national interests of its member states. In light of the creation of the Nord Stream pipeline, it is now important to evaluate associated opportunities and risks for Europe and how Europe will overcome possible negative effects.

A. IN COMPLIANCE WITH ENERGY SECURITY? OPPORTUNITIES FOR EUROPE

Russia already accounts for 24% of the EU's natural gas consumption.²⁷⁰ In 2006, Europe's share of natural gas energy consumption was 486 bcm.²⁷¹ In numbers, Russia contributes 116 bcm of gas to the European Union. The Nord Stream pipeline, when it has reached full capacity with 55 bcm/year in 2013, will increase Russia's gas exports to the EU by nearly 50%, if actual numbers are stable. But, dependency on imported gas is growing and Russia plans on further increasing their export potential of natural gas. The pipeline contributes to securing Europe's energy needs in the future. It contributes to the security of supply. In addition, Russia's gas resources are in close proximity to the European Union. The only other sources that are closer to the European Union are the gas resources of Norway, an additional large exporter of gas to the EU. Through the

²⁶⁸ Yergin, *Ensuring Energy Security*.

²⁶⁹ European Commission, *Green Paper*.

²⁷⁰ Liuhto, *The EU needs a common energy policy—not separate solutions by its member states*, 115.

²⁷¹ 486 bcm equal 437.93 Mtoe (million tonnes of oil equivalent): Directorate-General for Energy and Transport, *Europe's energy position: present and future*, 7.

establishment of the pipeline, the European Union gains access to the largest proven reserves of natural gas. In times of growing gas consumption, this seems logical.

Russia has, so far, been a very reliable supplier of energy towards the European Union. The European Union and Russia maintain and continue to further develop a special partnership. Currently, the European-Russian cooperation implies four policy areas: Freedom, Security and Justice, External Security, and Research & Education. Besides this, Russia is the EU's third largest trading partner. The existing Partnership and Cooperation Agreement of 1994 is currently under observation to establish a new Cooperation Agreement, which will further extend the European-Russian partnership on topics such as political dialogue, economic cooperation, provisions on trade, investment and energy, etc.²⁷²

Part of the Cooperation Agreement is also to further support Russia in its efforts to further strengthen its own democracy and fight corruption. In comparison to other exporters of natural gas to the EU, especially the Arabian nations like Algeria, Libya, and Egypt, Russia does not create the impression of being an area threatened by insecurity. In fact, the terrorist attack on the Moscow airport in January 2011 did not achieve to question the authority of the government. The Arabic states are currently threatened, at large, by insecurity, as is the case with Algeria, Egypt, Tunisia and Libya. This possible risk has already been identified by the European Commission in 2006.²⁷³ Currently, Russia is besides Norway the region, which contains large reserves of natural gas and is not threatened by high levels of insecurity. Seen from this perspective, the Nord Stream pipeline further contributes to energy security because it provides Europe with additional gas and gives Europe the opportunity to divert from areas threatened by insecurity, if necessary and applicable.

Strictly speaking, Nord Stream is not a European project. Nord Stream is a consortium consisting of several European energy companies and Gazprom, Russia's largest gas company. German companies, E.ON Ruhrgas and BASF/Wintershall each

²⁷² European Union, *EEAS (European External Action Service) / Russia*, http://eeas.europa.eu/russia/index_en.htm (accessed 2 February 2011).

²⁷³ European Commission, *Green Paper*, 3.

own 15.5% of Nord Stream. The German influence, even if all European firms altogether do not hold the majority of the shares, should not be underestimated. The reason for this is the special relationship between Germany and Russia that started in the 1970s under Chancellor Willy Brandt, known as “Ostpolitik.”²⁷⁴ And it was also due to the special relationship between Chancellor Schröder and President Putin that helped to push the negotiation process forward. Some critics say that it is the German-Russian relationship that hampers Europe’s efforts to achieve a common energy policy and promote a greater stand against Russia—this aspect will be highlighted in the next chapter—but the strong German-Russian relationship can also be an advantage for Europe.

Germany is the strongest economy in Europe. In 2009, the World Bank ranked Germany as the fourth strongest economy in the world measured with 3,330,031 millions of USD GDP (gross domestic product), followed by France with 2,649,390 millions of USD GDP.²⁷⁵ In 2009, the GDP was actually declining because of the worldwide financial crisis beginning in 2008, but the prospects for 2011 are very promising. In 2010 Germany already achieved a surplus of 3.4% GDP and this trend is likely to continue. Germany’s economic growth is the main driver for the European economy and it resulted in an economic growth rate in the EU-27 of 1.8% for 2010, even if several European member states still had to suffer from the outcome of the financial crisis, and 2010 also has been a very difficult year for the Euro, Europe’s shared currency.²⁷⁶ Besides Germany’s main contribution to the economic stability of the EU, Germany is also a great believer of a combined Europe. “With a view of establishing a united Europe” Germany has committed itself to this goal by incorporating it within Article 23 of the constitution.²⁷⁷ Germany is considered economically and politically to be the main driving force behind the European idea. Therefore, Germany’s opinion and actions have a

²⁷⁴ Compare footnote 260.

²⁷⁵ The World Bank, *GDP (current US\$) / Data / Table*, http://data.worldbank.org/indicator/NY.GDP.CD?order=wbapi_data_value_2009+wbapi_data_value-last&sort=desc (accessed 2 February 2011).

²⁷⁶ Zeit online, *Wirtschaftswachstum: Deutschland und Polen eilen der EU voraus / Wirtschaft / Zeit online*, 13 September 2010, <http://www.zeit.de/wirtschaft/2010-09/wachstum-deutschland-europa> (accessed 3 February 2011).

²⁷⁷ Deutscher Bundestag, *Basic Law for the Federal Republic of Germany* (Deutscher Bundestag, 2010), 28.

considerable amount of weight on European decisions. These facts can contribute to creating greater stability concerning Nord Stream and greater interdependence between Europe and Russia. If Russia loses Germany's support, then Russia has lost its reliability towards the rest of Europe. From this perspective, Russia has no incentive to disappoint Europe. The stakes are too high for Russia.

Keeping Europe's growing demand for natural gas in mind, it is obvious that new pipelines need to be built. Large parts of the existing pipeline structure need to be renovated or replaced. The existing pipeline structure will not provide sufficient amounts of gas to Europe in the future, and up to this point, the LNG-infrastructure is not developed enough to become a real alternative.²⁷⁸ Therefore, it was just a matter of time as to when a decision about an additional pipeline connection would have been made. It would have been possible to build an additional pipeline alongside the Yamal line, which supplies Europe with Russian gas through Belarus, but that would have meant the involvement of a third actor, Belarus. "Supply arrangements with transit states in between are less stable than direct ones."²⁷⁹ Belarus has already shown, in the past, to be an unreliable transit state and has used its negotiation power as a transit state against Russia. The advantage of the transit state is that a supply disruption will always be the fault of the supplier and damage his image.²⁸⁰ Moscow wants to provide Europe with a guaranteed and stable supply of natural gas; therefore the circumvention of transit states eliminates this possibility of supply disruptions. The Nord Stream pipeline fulfills these demands and can ensure a sufficient supply of gas.

Nothing is more stable than a pipeline connection. Once established, the gas has to flow to cover the expenses. In light of this, Russia must export gas via the Nord Stream pipeline in order to compensate its expenses and not lose its credibility in Europe. Europe must import the gas to cover its investment expenses through selling the gas to the industrial sector and the final consumer. However, the higher investment burden lies

²⁷⁸ Liuhto, *The EU needs a common energy policy - not separate solutions by its member states*, 110.

²⁷⁹ Shaffer, *Energy Politics*, 40.

²⁸⁰ *Ibid.*, 44.

with the exporter and leaves Europe with an advantageous position over Russia when it comes to negotiating new prices or conditions.²⁸¹

It could be argued that the Nord Stream pipeline creates stability between Russia and the European Union because of the increased interdependence. Both are committed to the pipeline but the higher investment risk lies with Russia. A pipeline not being used is lost investment and Russia has no way to divert the gas flow to other interested customers without again taking the risk of large investments.

Are Russia and Europe equally interdependent? Is Europe through the Nord Stream pipeline more dependent on Russia? Or is Russia more dependent on Europe? This question remains difficult to answer but it has been shown that the Nord Stream pipeline has great potential and can contribute to Europe's energy security and increase Europe's energy opportunities. Europe is not so vulnerable after all, and Nord Stream actually increases Europe's leverage against Russia. Europe has just to learn how to use this leverage effectively to promote its demands.

B. NORD STREAM AND ASSOCIATED RISKS FOR THE EUROPEAN UNION

No pipeline has ever been debated as critically in public as Nord Stream. People are concerned about environmental issues, a greater military presence of Russia's Navy in the Baltic Sea, the lack of transparency of Russia's possible political influence, the choice of Switzerland for Nord Stream headquarters (outside the European jurisdiction) and the fact that Nord Stream is not a true European project because only a few European states will profit from it leaving the rest—especially the Eastern European countries like the Baltic States and Poland—behind. Nord Stream has been viewed to divide Europe in favor of Russian foreign policies. The main critics always led to one aspect: increased dependency of Europe on Russia and the fear of Russia using this advantage for its own purposes and to promote Russian policies. Nord Stream has often been identified as an energy weapon.

²⁸¹ Shaffer, *Energy Politics*, 38.

Are these fears justified? Is Nord Stream nothing but an energy weapon for Russia? Does Nord Stream lead inevitably to increased dependency on Russia? What are the associated risks and is Europe capable of minimizing these risks?

Nord Stream has the potential for being used as an energy weapon against Europe. If it were used in that way, the consequences would be severe for the European economy. Importers are always more vulnerable to short-term supply disruptions than exporters, despite the image loss for the exporter.²⁸² The increasing demand for gas in Europe is foreseeable, even if Europe manages it to fulfill its goals of 20% reduction of CO₂ emissions, 20% increase of renewables and 20% energy efficiency by 2020.²⁸³ Gas will even contribute to these goals because it produces less carbon dioxide than coal or oil.²⁸⁴ An increased demand for gas is a logical step for Europe, but it will also increase Europe's vulnerability to supply disruptions.

The consequences of the Nord Stream pipeline being used as an energy weapon by Russia would be so severe that Europe could not allow Russia to even consider this option as a possibility. In the long run, the credibility of Russia would be destroyed and then where but from Russia would Europe receive its gas? The dependency on imported gas is too great. Any additional solution would further require a new pipeline or LNG terminals, which again would demand huge investments and years of planning and building. But Europe does not have the time. Germany has natural gas storage facilities with a capacity for 40 days, Austria for 60 days and even Slovakia for 180 days.²⁸⁵ All of these storage capacities combined would not be sufficient to satisfy Europe's hunger for gas and none of these storage facilities belong to the EU but to the individual nations. Seen from this perspective, Europe's dependency puts Russia in a more favorable position for negotiations. Europe has no other choice but to buy gas from Russia.

²⁸² Shaffer, *Energy Politics*, 39.

²⁸³ European Commission, *20 20 by 2020 - Europe's climate change opportunity*.

²⁸⁴ Christie, *European security of gas supply—A new way forward*, 5.

²⁸⁵ Liuhto, *The EU Needs A Common Energy Policy—Not Separate Solutions by Its Member States*, 119.

The fear that Russia uses energy as a political weapon was fueled by incidents of supply disruptions in the Ukraine and Belarus in 2006 and 2009. Also, Russia's behavior towards its post-soviet neighbors has also been reason for worry. It is feared that Nord Stream might be used the same way. In fact, the agreed route of the pipeline has been opposed especially by Poland and the Baltic States. Poland even went so far as to call Nord Stream "a new version of the Molotov-Ribbentrop Pact."²⁸⁶ Poland sees the planned route as a direct slap in the face, not only by Russia and Germany, but also by Europe. Nord Stream will transport gas from Russia to Central Europe but not to Poland. However, Poland is dependent upon imports of gas as well. If a pipeline had been erected along the proposed Amber Track, the Baltic States and Poland would have been able to profit from the pipeline as well as Central Europe and the costs would not have been as high as for the route through the Baltic Sea.

Nord Stream is considered a project of European interests. Poland and the Baltic States are members of the European Union. Therefore, from a European perspective, their proposal should be of interest to the EU. A European project should contribute to the wealth and profit for all European member states and not just a few. That is their claim. The proposed land route via Poland and the Baltic States would even have solved the issue of third actor transit states like Belarus and the Ukraine, which are not members of the EU. But the proposal was rejected from the beginning because of higher maintenance costs and Russia's belief that the Baltic States and Poland would step in as transit states and wanted to profit from the pipeline by charging transit fees.²⁸⁷

²⁸⁶ Liuhto, The EU Needs A Common Energy Policy—Not Separate Solutions by Its Member States, 110. The Molotov-Ribbentrop Pact was a pact between the Soviet Union and Germany at the dawn of WWII of how Poland should be divided between Nazi-Germany and the Soviet Union.

²⁸⁷ Whist, *Nord Stream: Not just a Pipeline*, 20.

What would be Poland's and the Baltic States' incentives to charge transit fees to the European Union? Actually, a land route via the Baltic States and Poland would have increased European energy security because it would have connected European nations with each other. They all would then have shared interests about energy policies and Russia would not have any leverage against the European Union. But now, even if Nord Stream is valued as a project of European interests, it has divided Europe. Central Europe will receive its gas through the Nord Stream pipeline and Moscow can now deal with the Baltic States and Poland any way it pleases Russia. When Poland gets cut off from Russian gas due to differences with Russia, why should the EU or the Central European nations step in? After all, they got their gas. And, as has been pointed out before, the main drivers for Europe are Germany and France. This being said, without their support it is unlikely that the EU will agree on a consensus to call out sanctions against Russia. The worst that could happen to Russia is that high-ranking officials of the European Union will declare in public that relations between Russia and the EU have been damaged severely. The rest of the problems would probably then be solved internally. This does not put the European Union in a good bargaining position.

Without one single cubic meter of gas being transported through Nord Stream, Russia has already increased its influence over Europe. It has managed to divide the European Union over energy issues and, therefore, enlarged its negotiation power by dealing with the member states separately, and this favors Russia. Russia knows that Europe's economic influence is immense and once a decision is made by the Union, this decision will reflect the will of all member states and all member states will then pursue the enforcement of such policies. This would be dangerous for Russia, so Russia needs to divide the Union over energy issues, Russia's biggest export product. Having achieved this and being able to deal with the member states separately, Russia can easily discriminate prices and charge each country "its full paying potential."²⁸⁸ Up to this point, there is little that the Union can do. The EU is dependent on the will of their member states. If they are not able to achieve a consensus, than no decision will be made. So far, Europe has not been able to implement a common energy policy.

²⁸⁸ Cohen, Russia: The flawed Energy Superpower, 93.

Russia's price politics and the legal setup of Nord Stream have also contributed to the discussion. In contrast to oil, there is no global gas market and no global gas price, even if gas prices are linked to the oil price to some extent because of competition between gas and oil as primary energy sources.²⁸⁹ Gas prices vary largely around the world. This is owed to the fact that gas cannot get transported as easily as oil. Gas is being transported via pipelines creating a direct, stable connection. In light of this, gas prices are dependent upon the negotiations between producers and consumers. If gas was easier and less costly to transport, then a global market would make sense because it would create stability through increased competition. This, in turn, would also result in a more transparent and reduced price for gas. A stable market increases energy security, but increased competition and, therefore, a stable market is not advantageous for Russia. It can be assumed that gas will continue to be a product with great elastic prices, in the Nord Stream case, in favor of Russia.

Nord Stream's headquarters location in Switzerland also decreases Europe's influence and energy security. The EU, the involved member states and companies have no legal authority over Nord Stream. This is only true to some extent. Because Nord Stream is operating on European ground, the company has to obey European or national law. If laws are broken, then the EU has the legal authority to force Nord Stream to enforce European law and comply with it. But, if there are financial issues, then the power of the EU is very limited. Why did Russia do that? Wasn't it one of Russia's goals to increase transparency? By choosing Switzerland, Gazprom decided not to increase transparency. It does not have to happen and there are no obvious signs that it will happen, but the pure existence of the possibility of Nord Stream being misused as a company for dubious money transfers worries people in Europe and proves critics of Russia's energy policies right.

Last but not least, if Sweden and other Baltic States are right about an increased military presence of Russia's fleet in the Baltic Sea, what would be the consequences for Europe? It is natural that Gazprom and the Russian state have a vital interest in observing

²⁸⁹ International Energy Agency, *World Energy Outlook 2008*, 72.

the functionality of the pipeline. Any gas accident in the Baltic Sea would be severe for the eco-system and disastrous for Europe and Russia. To prevent this, the pipeline has to be maintained and observed at all times, but, the pipeline might also become an attractive target for terrorist attacks, even if it assumed “that undersea pipelines are less easy to be sabotaged than those built on the ground.”²⁹⁰ The sole possibility of a potential threat against Nord Stream—it would hurt Russia as well as Europe—would be reason enough for Russia to provide special military assets for protection. The protection of the pipeline is important and necessary but how can Europe and the adjacent Baltic States be ensured that an increased military presence in the Baltic Sea might not be used for surveillance or reconnaissance missions? This is Sweden’s main fear, as was pointed out in Larsson’s report on Nord Stream and Baltic Sea Security.²⁹¹ For Poland, an increased presence of Russian military might have a more serious outcome.

In 2009 Russia carried out a military exercise in conjunction with Belarus that simulated a nuclear attack on Poland. The exercise coincided with the 70th anniversary of the Soviet invasion of Poland and was regarded as a threat by Poland. As a direct answer to the exercise, “Central and Eastern Europeans have warned of Russia adopting a neo-imperialistic attitude to an area of the world it still regards as its sphere of influence.”²⁹² Storming a “Polish” beach and an attack on a pipeline were also part of the exercise. Can this exercise be linked to Nord Stream? Such a linkage could only be based on very vague assumptions, but it shows Russia’s attitude of being perceived as a world power. Since the end of the Cold War, Polish-Russian relations have not been the best and Poland’s decision to join NATO in 1999 and the European Union in 2004 have not contributed to an improvement in their relationship. Poland joined both organizations to open up even more towards western democracy, but also to take cover under the protective shield against Russia. Poland does not trust Russia and the fact that through Nord Stream it is even more dependent on Russia, increased Poland’s mistrust in Russia

²⁹⁰ Liuhto, The EU needs a common energy policy—not separate solutions by its member states, 110.

²⁹¹ Larsson, *Nord Stream, Sweden and Baltic Sea Security*, 8.

²⁹² Matthew Day: The Telegraph, *Russia 'simulates' nuclear attack on Poland - Telegraph*, 1 November 2009, <http://www.teelgraph.co.uk/news/worldnews/europe/poland/6480227/Russia-simulates-nuclear-attack-on-Poland.html> (accessed 4 February 2011).

even further. Would a Russian attack on Poland or the Baltic States be likely? No, but the pure demonstration of Russia's military power, capabilities and effectiveness speak for themselves. Poland would welcome a stronger European military presence in the Baltic Sea, but Europe's military options are very limited.

The Common Security and Defense Policy (CSDP) was introduced in 1999 and since then, the EU has conducted eight military operations outside of Europe.²⁹³ But Europe does not have its own troops. All decisions concerning CSDP missions are based on unanimity within the Foreign Affairs Council and the European Council. It is up to the member states if and to what extent military forces will be provided for EU-led missions. A EU-led mission in the Baltic Sea to maintain the balance between Russian and European forces, and to send a signal to Poland and the Baltic States that they have support from the EU, is very unlikely due to German-Russian and French-Russian relations. As has been pointed out before, a decision within the EU without approval of France and Germany is very unlikely.

Does this mean that no presence of EU forces in the Baltic Sea weakens Europe? Not necessarily, but the complicated decision-making process for CSDP missions hampers Europe's abilities to put more pressure on Russia and to clearly draw the line that is not to be crossed by Russia. The main problem with CSDP missions is similar to Europe's inability to establish a common energy security policy: Europe needs to speak with a common voice! "The necessity to speak with a common voice on the international scene on energy-related matters may have wider policy implications which need to be coordinated with Europe's existing foreign policies [including CSDP]." ²⁹⁴

C. OPPORTUNITIES VS. RISKS: IMPACTS ON EUROPE

As has been previously shown, Nord Stream is a blessing and a curse for Europe at the same time. Strong arguments have been presented that are in favor of Nord Stream

²⁹³ European Union, *CONSILIUM - EU Operations*, January 2011, <http://www.consilium.europa.eu/showPage.aspx?id=268&lang=EN> (accessed 4 February 2011).

²⁹⁴ Andoura, Hancher and van der Woude, *Towards a European Energy Community: A Policy Proposal*, 96.

and Europe's possibilities to reduce Russia's influence. On the other hand, there are also strong arguments that clearly show that through Nord Stream, Russia has an advantageous position over Europe concerning energy security. Do the positive aspects of Nord Stream outweigh the associated risks? That depends on the perspective. Both, negative and positive aspects contribute to energy security either way and reflect its key principles.

On the one hand, Nord Stream contributes to greater diversification because Europe will gain access to large amounts of reserves of natural gas and Nord Stream allows Russia to supply gas to Europe without the negative impact of transit states as third actors. It also allows Europe to diversify its gas imports from areas threatened by insecurity, as is currently the case in the Arabic states of the Mediterranean. On the other hand, Europe's dependency on Russia grows through Nord Stream, and diversification also envisages a decrease of dependency and an increase in the number of resources providers. But, natural gas is a limited resource and it is only located in a few nations worldwide. So, concerning the diversification of suppliers, Europe does not have many options. A greater diversification of the fuel mix, as is aspired to by the Union, is difficult, and will not be achieved overnight. In the long run, this will become more and more important for the EU, but it will not solve the short-term requirements of the growing energy demand in Europe.

Resilience is difficult to achieve concerning gas. Natural gas can only be transported via pipelines and through LNG terminals, and it is difficult and costly to store. The current storage facilities in Europe are scarce and their existence is due to national backup planning. Nord Stream's contribution to resilience is the amount of gas that is within the pipeline. An expansion of the number of storage facilities in Europe would be desirable, but cannot be attached to the purpose of Nord Stream.

Information is a very sensitive issue linked to the pipeline. In today's interconnected electronic world, information can be obtained in real time by everyone who has access. This includes the fast spread of information before it can get evaluated and confirmed. This puts pressure on Nord Stream because in order to contradict negative arguments against the pipeline, the company has to go public and respond to accusations

with an official statement. In light of this, Nord Stream is also a bad example of information transparency because the non-transparent Russian energy market aligned with dubious money transfers and the headquarters' location in Switzerland does not fulfill the demand for more information. It actually underlines information as a key principle.

Russia and Europe are well aware of the impact of the reality of integration. Nothing can create more dependency between importers and exporters than a pipeline. Both partners know that through Nord Stream, their mutual dependency has grown but the nature of gas pipelines and the great price differences worldwide have also shown that the creation of a stable gas market is still to be achieved. And Russia, as the exporter, profits from this situation since it gives it the ability to discriminate its prices.

Nord Stream puts Europe in a more favorable position for competing for energy resources than China. China is the largest growing economy and its increasing demand for energy is equivalent. Through Nord Stream, it is assured that gas will flow from Russia to Europe. Pipeline connections to China have still to be built. Europe can use this advantage to promote its vision of the future of energy security and energy markets and the important conclusion that energy security has already become a global issue. Intermediate solutions, consisting of a limited number of states, are not an option and would threaten to destabilize a global energy security system, if it was achieved. But Nord Stream is also a valid example of a non-global intermediate solution. Nord Stream is not a European project, per se, even if it does have the support of the EU. Nord Stream has been made possible through negotiations between Russia and respective European states, especially Germany. How can Europe promote the importance of global energy security when the Union can so easily be divided into two camps representing different opinions about European energy security by just one pipeline? Europe has to realize that if the EU wants to be perceived as a major player concerning energy security, it has to act accordingly and speak with one voice. This is the globalization of energy security on a small scale.

Protection of the supply chain is becoming more and more important for Western democracies since terrorists have realized that energy is the most vulnerable side of

democracies.²⁹⁵ If supply is interrupted, the consequences are severe. Nord Stream itself has a great advantage due to the fact that it lies on the bottom of the Baltic Sea down to a depth of 210 meters.²⁹⁶ This is difficult to sabotage. The upstream connection lies within Russia and falls, therefore, under its supervision, whereas downstream it falls under the supervision of Germany. The fear is that just the possibility of a terrorist attack might result in an increase of Russian military presence in the Baltic Sea. Russia perceives it as its responsibility to care for the protection of the pipeline because it is mainly a Russian company and represents Russian interests. Nord Stream passes through the EEZ of Finland and Sweden, but not through their territorial waters. According to maritime law, Nord Stream lies in open waters, therefore, no one can forbid Russia to place military assets along the route if needed. On the other hand, any other nation could do the same. This poses a problem. A stronger stand by Europe concerning CSDP might be helpful because it would support Poland and Sweden's points of view and could contribute to more stability in the Baltic Sea. Currently, an increase of Russia's military forces in the Baltic Sea would be perceived as a threat by adjacent Baltic States. Even if Russia sends out forces solely for the purpose of protecting Nord Stream, there is the possibility that Russia would misuse its protection mandate. This does not contribute to the protection of the supply chain.

Is Europe helpless against Russia and its imperialistic behavior concerning energy? No, it is not! Maybe the EU is a bit naive toward Russia and its intentions concerning the negative influence potential Nord Stream might possess. Both Russia and Europe are mutually dependent and Nord Stream underlines this fact. Europe needs gas from reliable suppliers and Russia needs reliable customers. So far, Russia has never disappointed the EU concerning energy supply. This trend may continue, but Europe also needs to be aware of the fact that through Nord Stream, Russia's potential to directly influence Europe's industry and politics has increased. Europe must find ways to outweigh the potential risks that are associated with Nord Stream, reduce Russia's influence, and increase Europe's negotiation abilities.

²⁹⁵ Koknar, *The Epidemic of Energy Terrorism*.

²⁹⁶ Nord Stream, *Facts & Figures*.

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VI. CONCLUSION

It is expected that the first gas will travel through Nord Stream from Russia to Europe in late 2011. Its full capacity of 55 bcm/year is to be reached in 2012. The most controversial pipeline being discussed in public has become reality. Now the gas must flow.

The discussion about a possible construction of the pipeline has come to an end. This is the reality that the European Union now has to face. In order to reduce associated risks to a minimum and to maximize its possibilities, the EU needs to bring energy security to a new level, a level that will endow the EU with the necessary capabilities.

In accordance with the policy proposal of the European Commission to the European Council and the European Parliament in 2007, a common energy policy for Europe is essential. The key elements of the proposal focus on sustainability, security of supply, competitiveness, an internal energy market with the necessary infrastructure, solidarity between member states, increased energy efficiency, greenhouse gas reduction, increased amount of renewables, and an increase of the external dimension of European energy security.²⁹⁷ So far, a common energy policy has not been realized, even if some achievements have been made, like Europe's goal of 20 20 by 2020. A common energy policy would decrease the member states' individual influence over their respective energy sectors. Energy is mainly driven by national motives, but this is what Europe has to overcome, its divergence of national interests.

If Europe is able to implement a common energy policy with an external dimension and learns to speak with one voice, it will increase its negotiation abilities with suppliers. Energy security is closely interlinked with foreign affairs. Combined actions concerning the energy security of the European Commissioner of Energy and the High Representative for Foreign Affairs and the Security Policy of the European Union linked with the power to speak for the Union as a whole, would underline this fact. Through the implementation of the Lisbon Treaty in 2009, the EU has endowed itself with a "foreign

²⁹⁷ European Commission, *An Energy Policy for Europe*.

affairs minister.” Now the EU should make adequate use of this office and provide the High Representative with the necessary instruments. An implementation of energy security as a major topic within CFSP seems logical and is inevitable.

According to Andoura et al. from Notre Europe, “Europe’s current energy rules and policy suffer from structural deficiencies.”²⁹⁸ Within their study, the authors have identified several essential requirements a common European energy policy should possess: an internal energy market, an integrated and smart network that supports sustainability and security of supply, price stabilization, a diversified fuel mix, crisis management and strategic reserves and an external dimension that “allows Europe to protect and secure its goals on the international scene.”²⁹⁹

Kari Liuheto from the Pan-European Institute comes to a similar conclusion. A common energy policy is essential for Europe, not separate solutions by the member states. In addition to the demand for a common energy policy, Liuheto stresses the importance of energy efficiency, diversification, individual energy production, storage capabilities and a reliable partnership with Russia.³⁰⁰ All of them would assist in decreasing Russia’s influence over Europe.

The EU itself as a supranational organization possesses only the power that has been granted by the member states, where the real power is located. European politics are only made, to some extent, in Brussels. But to a larger degree, European politics depend on the opinions in the national capitals with Paris, London and Berlin being the most influential ones. The European decision-making process is based, to a large degree, on a consensus between the member states, and no nation is willing to give up parts of its sovereignty freely. However, in the case of energy security, this might be a difficult but necessary step to take.

A further advance in the development of an internal energy market in the EU would make the EU less vulnerable. Fossil resources and electricity can be traded

²⁹⁸ Andoura, Hancher and van der Woude, *Towards a European Energy Community: A Policy Proposal*, IV.

²⁹⁹ Ibid., VIII.

³⁰⁰ Liuheto, The EU needs a common energy policy—not separate solutions by its member states.

between the member states if an adequate infrastructure is available. This will require large investments to update the current energy infrastructure, but in the long run, it will contribute to sustainability, security of supply and price stabilization.

Europe must continue to develop its fuel mix. A reduction of fossil resources like gas could be achieved through an increase of the EU's own energy production. Since Europe's fossil resources are declining, this calls for an increase of renewables. They will provide additional support for the European fuel mix, but are not capable of providing the essential energy base load at the moment. Therefore, it is important to further promote R&D (Research and Development) for renewables in order to increase their efficiency and reliability. A European-led approach would increase transparency between the member states and decrease development costs. In addition, even if nuclear energy is not very popular in large parts of Europe, nuclear energy power generation should also be reconsidered by the EU. With nuclear power, the EU would be able to generate sufficient amounts of energy for its citizens and industry and decrease the dependency of energy imports from Russia in particular.

Concerning gas, it is essential for the EU to decrease its dependency on imports. Natural gas is the most popular fossil resource for power generation in the EU. It produces less carbon dioxide than oil or coal power plants and, therefore, contributes to Europe's goal of reducing its greenhouse gas emissions by 20% by the year 2020. Natural gas is also more favorable for power generation than nuclear power plants are because of the risks associated with nuclear energy. But, all of these arguments lead to an increase in the importation of natural gas. Besides pipelines, Europe should invest in LNG terminals to be able to diversify its gas imports on relatively short notice. This increases Europe's negotiation capabilities, reduces the possibility of price discrimination and contributes to more transparency in the gas market. Eventually this might also lead to a valid gas price, worldwide.

Europe should also increase its natural gas storage capabilities, and they should be perceived as European strategic reserves rather than national reserves. This would limit the severity of the impact of a sudden disruption of supply. It would also support Europe's external dimension of energy security because the option of divide-and-rule

would be limited. Natural gas, especially, is known to create long-term dependencies between consumers and producers due to limited transport possibilities. A disruption of the supply of gas to Poland would have severe consequences for Poland but not for Germany or other European nations. If Europe could have natural gas reserves available and the necessary infrastructure to distribute energy between the EU's member states in times of need, the leverage of the supplier on its consumer is largely reduced.

Europe's plans to increase energy efficiency by 20% by 2020, in accordance with the EU's 2020 goals, also help to decrease import dependency. In fact, if Europe is able to implement these goals by 2020, then energy consumption is expected to decline in some circumstances.³⁰¹ This would be harmful for Russia as Europe's largest gas supplier, because Russia depends on the amount of gas sold to the EU. According to the basic principles of supply and demand, a demand decrease will lead to a lower agreed price.

None of the above-mentioned mechanisms are new. They all reflect the key principles of energy security. The problem with the EU is that it does not have the political will to implement these mechanisms that would help decrease Europe's dependency on imported fossil fuels, especially gas from Russia. This has also been pointed out by Günther Oettinger, the EU Commissioner for Energy, during a speech at Kings College on the 10th of February 2011. "At the moment we [the EU] lack the permanent mechanisms to ensure effective coordination at the EU and Member States level. This makes us far less effective in dealing with our partners."³⁰²

According to that speech, the European Commission has been working on a new policy proposal for a new energy strategy. It has already been endorsed by the European

³⁰¹ European Commission: Directorate-General for Energy and Transport, *Europe's Energy Position: Present & Future*, 12.

³⁰² Günther Oettinger, *EUROPA - Press Releases - Energy Security for Europe: The EU Agenda until 2050*, 10 February 2011, <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/98&format=HTML&aged=0&language=EN&guiLanguage=en> (accessed 20 February 2011).

Council but has not yet entered the European Union decision-making process. This is expected to occur during the summer of 2011.³⁰³

Maybe the new policy proposal will contribute to a Common European Energy Policy. And maybe it will further strengthen Europe's most powerful tool: to speak with one voice!

³⁰³ Günther Oettinger, *EUROPA - Press Releases - Energy Security for Europe: The EU Agenda until 2050*.

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