



NORD STREAM 1

NORD STREAM 2

TWIN PROJECTS, YET SO DISTINCTIVE



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Master's Thesis

Nord Stream 1 and Nord Stream 2

A comparative study

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Abstract

In the time of increased concerns about energy security, all infrastructure projects are subjected to heightened awareness. Nord Stream 1 and Nord Stream 2 are prime examples of such projects, drawing a lot of attention from political figures and institutions, media and even ordinary citizens. These projects have raised a lot of questions, given the fact that they are at the forefront of the turbulent and complex energy relations between the EU and Russia. Despite these projects being almost “identical twins”, they are being referred to as completely different. The objective of this master's thesis is to find out what caused this change of attitude.

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List of Abbreviations

Bcm – billion cubic meters (the usual unit used for natural gas market)

CJEU – Court of Justice of the European Union

EC – European Commission

ECT - Energy Charter Treaty

EP – European Parliament

EU – European Union

IEA – International Energy Agency

IR – International Relations

LNG – Liquified Natural Gas

MS – member states (of the EU)

Mtoe – Million tonnes of oil equivalent (alternative unit for gas)

NS1 – Nord Stream 1

NS2 – Nord Stream 2

TEN-E - Trans-European Network for Energy Guidelines.

UN – United Nations

UNCLOS – United Nations Convention on the law of the Sea

1. Introduction

In today's world, we can observe that the use of energy grew immensely, affecting the everyday life of people and businesses, raising the level of living of ordinary people on one hand, up to the economic power of states on the other. Indeed, the usage of energy can be seen at every corner, and that is why especially in recent decades the concept of energy security has developed to be one of the most crucial sectors of importance for the majority of states. It is no more an important topic only in the economic sphere, but also in a political one, with implications to national security. To secure the energy security every state needs to undergo complex negotiations with other actors, as the ownership of energy resources is mostly a privilege and those who own them possess a unique opportunity to get beneficial trade agreements with others, mostly supporting the economy but also increasing geopolitical power and possibly shifting power leverage to the exporter's advantage.

One of such energy trade relations, arguably one of the most complex ones, is the one between the European Union and the Russian Federation. While the relations between them were quite stable during the Soviet era, they started to worsen back in the 1990s with the decision of the EU to press for liberal market competition in the former countries of the eastern bloc, alongside the ambition to create a single gas market. Russia's reputation in the eyes of the EU further declined with a Russian withdrawal from the ratification of the Energy Charter Treaty. Their turbulent relation continued in 2006 and 2009 with gas crises in Ukraine, when in the latter one Russia decided to cut out Ukraine from gas supplies, which affected many countries especially in Central Europe. One can say that the most severe blow to this relation has been the annexation of Crimea, which was followed by the imposition of sanctions against Russia. All these events led to an understanding within the EU that Russia is not the most reliable partner in the sector as crucial as energy supply and therefore EU started to adopt policies that are aiming to reduce the dependence of the EU on Russian energy export, especially the natural gas one.

Natural gas can be considered as one of the most important energy sources in the world. Alongside oil and coal, they cover the majority of energy consumption. Despite them being pointed out as harmful to the natural environment, it is predicted that due to increased demand and growing economies their consumption will be still growing, although their share in the market is predicted to decline in upcoming decades, substituted by nuclear and renewable energy sources (BP, 2018). However, natural gas is the only one of those three not losing its

potential even in the long run, due to its least damaging effects to the environment. It can be considered as the only one of fossil fuels that remain in accordance with the UN 2050 Agenda to decrease the consumption of fossil fuels since its burning does not produce as much greenhouse gases as oil or coal. That is why natural gas is by many considered the fossil fuel of the future, expected in the coming years to slowly begin to dominate the market of fossil fuels. The growth of its consumption and share of the energy market is considerable and easy to notice already. In 2017 its consumption grew by 195 bcm or 5,3% which is one of the highest growth since 1984 (BP, 2018).

Although the quantities of imported gas to the EU from Russia are not as significant as the imports of oil (EUROSTAT, 2019), the gas remains a commodity of great importance especially in member states of Central and Eastern Europe as these countries are highly dependent on gas imports from Russia. From first glance, it looks as the significance of both EU and Russia is on the same level with Russia being the biggest energy exporter to the EU and the EU being the biggest energy consumer with more than half a billion energy consumers in a unified internal market. However, the complexity of gas trade relations between the EU and Russia when thoroughly examined can reveal more than meets the eye.

The importance of natural gas in the concept of energy security of EU has been the reason why even little changes in gas imports or gas infrastructure within EU are watched closely by many states, while big projects are kept at the spotlight, catching a lot of attention of media and penetrating into the discourse of wide-range of actors. The project of Nord Stream 2 can be undoubtedly considered as one of them, as it has caused a lot of turmoil since its initial planning until now, to the stage of almost completion. It builds on the success of its predecessor Nord Stream 1 and when completed it is expected to double the possible export from Russia to Germany across the seabed of the Baltic Sea. Because of its scope, it caused a lot of heated debates, facing a fierce opposition of many member states of the EU, mostly by countries of Central and Eastern Europe which feel most threatened by possible consequences of its completion. It is maybe captured in the best fashion by Maroš Šefčovič, former Vice President of EU Commission, in charge of Energy Union:

“This project, as it was described and presented, is polarising EU member states... I’ve never seen a project that was heralded as a purely commercial one so intensely politically debated, not only by the ministers of energy, but also by the ministers of foreign affairs and by the heads of state and government, and we never received so many letters from the highest representatives of our member states” (Šefčovič M., 2016)

1.1 Problem Statement

Nord Stream 2 is causing havoc on European stage right from the moment it was announced, dividing member states of EU into two groups – one supporting it, already looking forward to cheap and reliable gas, while the other one strongly opposes it, fearing the tightening grip of Russia over EU gas trade. From the technical point of view, the project can be considered a “twin” to already existing Nord Stream 1 project, while both are described as purely economic driven. While NS1 was considered a “project of European interest” and provoked mild opposition from few member states of the EU, while NS2 sparked fierce opposition from many, pointing out the political rationale behind the project and possible geopolitical implications. The opposition is pointing out mostly on Russian big sphere of influence in Central and Eastern Europe, which has increased with NS1 and will increase dramatically more if the NS2 project will be finished. In such a scenario Russia could use its stronger political leverage to undermine ambitions of these states to diversify its gas imports. But not only these states are endangered as many are pointing out that this project may also have political implications on the EU as a whole, with Russia gaining political leverage. Apart from that, the EU has been aiming to diversify its gas suppliers from Russia for many years, making legislative moves to avoid its growing dependence. The Third Energy Package, Energy Charter Treaty, and ambition to create Energy Union all point out to the EU actively seeking to diversify.

1.2 Research Question

Following the explanation above, this master thesis aims to examine the Nord Stream 1 and Nord Stream 2 pipelines thoroughly, asking the question:

Why is Nord Stream 2 considered and approached as a completely different project compared to Nord Stream 1?

Moreover, this research question is supported by three sub-questions which aim to address more narrowly specific aspects of this project, possibly focusing on the most intriguing questions that have arisen with it:

- **What is the effect of these projects on the energy security of the EU?**
- **Are Nord Stream 1 and Nord Stream 2 in line with the energy regulations of the EU?**
- **What is the effect of these projects on the energy dependence of the EU on Russia?**

2. Methodology

The methodology chapter is used to essentially describe the philosophy of science and the research design of this master thesis. This thesis is perceived as a comparative study of Nord Stream 1 and Nord Stream 2 at the forefront of a much larger and complex energy relations between the EU, its member states, and Russia. As the NS2 project has started only a few years ago and is still under construction it provides an interesting area to examine, with a possibility of valid contribution. Despite bringing a lot of attention to itself due to many reasons that will be discussed later, it has not been yet processed by many scholars. In this chapter, the author explains the philosophy behind the research process and research design, all to secure the validity and reliability of this study.

2.1 Philosophy of science

We will start the methodology by explaining the philosophy of science of this thesis and at the end explain why have I decided to choose this one.

The question of philosophy of science in International Relations (IR) has been under debate by scholars, contemplating how to combine a variety of methodological and philosophical options in order to make the academic work as “scientific” as possible. Scholars of the IR are in dispute with the scholars of Philosophy about the nature of the scientific methods and the ongoing rivalry between scientific realism and empiricism, historicism, and social constructivism (Haugevik, 2011, p. 223).

This thesis is following the philosophy of science as set up by P. T. Jackson, who entered the dispute between the scholars and opened a whole new debate by his argumentation. He argues these disputes between different scholars had never brought any fruit and in the end lost its scholarly resonance. Therefore, he rejects the very fundamental premise of the IR scholars that there is such a thing as a single “perfect” scientific method or philosophy of science that is objectively valid all the time (Jackson P. T., 2016, p. 3). Concerning the goals of a particular IR study, research design and appropriate approach towards it Jackson argues that various methodological approaches that are competing with each other should be considered in a pluralistic philosophical context. Jackson builds upon the Max Weber definition of science, which he addresses as “very broad”. Weber defines it as: “the careful and rigorous application of a set of theories and concepts so as to produce a thoughtful ordering of empirical actuality” (Jackson P. T., 2016, p. 213). Jackson derives from this his idea that: *“The basic point here is*

that even someone who rejects our values should be able to acknowledge the validity of our empirical results within the context of our perspective... Instead, the decisive issue is internal validity: whether, given our assumptions, our conclusions follow rigorously from the evidence and logical argumentation that we provide” (Jackson P. T., 2016, p. 24)

For a study to be considered in a pluralistic philosophical context, Jackson proposes four main categories that are corresponding to various philosophical traditions, ontological commitments, and epistemological proposals: neopositivism, critical realism, analyticism, and reflexivity. Alongside these four categories, he also identifies two pairs of opposing positions that help the researcher to define which of these categories suits the best (Jackson P. T., 2016, p. 41). The first pair describes the relationship between the researcher and the social world he/she studies:

- a. Mind-world dualists see the researcher and the world of study as detached from themselves. This implies that the “outside” social world truly exists and can be approximated by the researcher, given the proper means of research.
- b. Mind-world monists see the researcher and the world of study as interconnected through the researcher’s subjective viewpoints and experiences. Therefore, there is no “outside” social world before our knowledge of it (Haugevik, 2011, p. 224).

The second pair describe the relationship between the knowledge and observation, in other words, what “objects” of studies can researchers acquire knowledge about. Transfactualism maintains the possibility of going beyond the observable facts into deeper processes and factors that generate them. In short, it believes that in-principle unobservable facts can be obtained. On the other hand, phenomenism argues the contrary that there is no need nor the possibility for a researcher to: “transcend experience by some organ of unique character that carries (them) into the super-empirical” (Jackson P. T., 2016, p. 40). After applying these two pairs of opposing positions a category can be chosen, which is the closest to the researcher’s belief (*see figure 1*).

	Phenomenalism	Transfactualism
Mind-world dualism	Neopositivism	Critical Realism
Mind-world monism	Analyticism	Reflexivity

Figure 1; source: (Jackson P. T., 2016, p. 41); figure created by: author

The most dominant of these four categories is neopositivism. This fact in combination with the author's beliefs in mind-world dualism and phenomenism have determined the methodology

of this master's thesis. It has its origins in the empirical philosophy of scholars such as Hume, Comte, or logical positivists of the 20th century (McArthur, 2011, p. 98). Neopositivism connected to the IR studies can be used to discover covering laws behind international relations. As there is no possibility of making experiments (as in other sciences), studies are based on a comparison of similar cases, that vary only in the key variables that are the objects of the study. The comparison serves to determine whether those cases obey presupposed laws. Neopositivism correlates with strong ontological commitments to objective reality, a strong empirical epistemology, and disbelief in theoretical hypotheses or entities that are unobservable (McArthur, 2011, p. 98).

As already mentioned, neopositivism stands on a pair of philosophical-ontological commitments, which are mind-world dualism and phenomenalism. Jackson argues that the direct consequences of these commitments are "hypothesis testing and covariation-causality" (Jackson P. T., 2016, p. 59). Mind-world dualism encourages hypothesis testing from its very definition, contrary to mind-world monism as testing a possible hypothesis on an object of the study would make little sense if these two worlds would not be mind-independent from each other. Phenomenalism, on the other hand, enables covariation-causality, as it limits the observable knowledge to the aspects that can be empirically grasped and directly experienced. This implies that "the only confidence that observers can have about a causal relationship-which must be inferred rather than abduced or counterfactually ideal-typified-must be founded on its systematicity" (Jackson P. T., 2016, p. 59)

The motivation for selecting neopositivism as the philosophy of science for this thesis is rooted first and foremost in my personal belief that only according use of relevant data and empirical evidence one can get to the most reliable conclusions. I believe that despite my personal negative attitude towards Russia and the NS2 project particularly, I can "detach" myself from this subjective beliefs and deliver an objective study. Moreover, this thesis is not oriented towards any speculative questions and answers, but towards questions that can be answered by empirical evidence. Therefore, the selection of the leading philosophy was clear. The implications of this choice on the reliability and validity of this thesis are explained in the last chapter of methodology.

2.2 Research Design

With the philosophical background of the thesis defined, the following chapter describes how did I progress with its research design. A simplified model of research as described by K. F. Punch was chosen (*figure 2*) since it is simple on one hand, yet it precisely captures the organisation of research of this project.

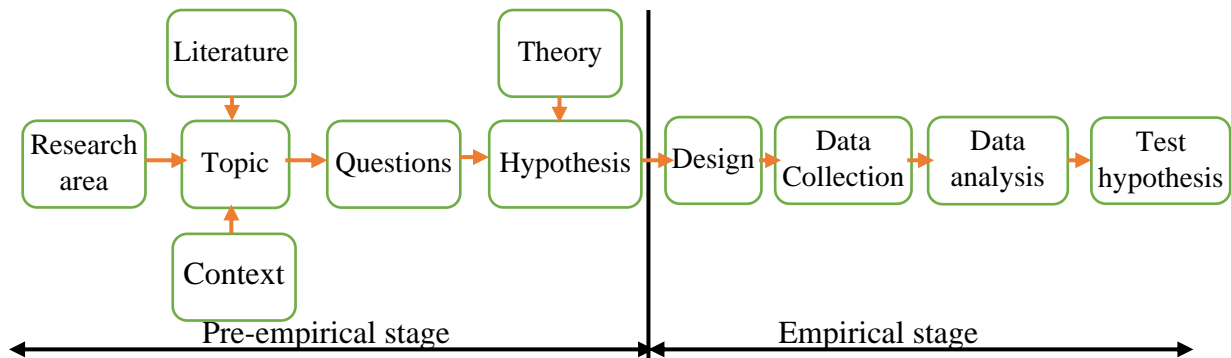


Figure 2; Source: (Punch, 2014), figure created by: author

The origin behind the idea to examine the Nord Stream 2 was rooted in the origin of the author. As a Slovak, I had first-hand experience with the cut of gas supplies in 2009 and remembers the notion of fear it caused. It is safe to say that not only the author but practically whole Central Europe felt the need for a change so that such a situation never happens again. Russia itself suffered a lot of damage to our perception, this feeling even strengthened after the invasion of Crimea. It was no longer seen as a safe and reliable partner, especially in a sector so crucial as energy. That is why the diversification plans of the EU were received with relief and hope for better energy security in the future. The relations between the EU and Russia, especially regarding energy trade and energy security could be described as the initial **research area**. However, the extreme complexity of those relations and the number of different projects between these two actors needed to narrow it down, so the project can thoroughly examine one project rather than to try superficially to mention everything.

One project, in particular, has been under the spotlight in recent years and that is Nord Stream 2, therefore it has been chosen as the **topic** of the thesis. It has evoked rather sceptical thoughts in my mind, connected to the previous bad experience with Russia and gas delivery, and provoked thought that this project is going to hurt “us” eventually. This initial hypothesis was transformed into a question in which I am asking whether this project is “bad” or “good”

for us. The empirical knowledge about the Nord Stream 1 project and its rather beneficial status for the countries of the EU gave me new insights and started to formulate the final form of the topic, where Nord Stream 2 would be accompanied by its predecessor Nord Stream 1. Despite these projects being almost the same in many aspects, they are being referred to as completely different projects. Therefore, for the purpose of the academic paper, the research question was formulated as follows: *Why is Nord Stream 2 considered and approached as a completely different project compared to Nord Stream 1?* This question is accompanied by my initial hypothesis, re-formulated into this statement: ***While Nord Stream 1 was classified as a project of common interest of the EU and mostly supported by its member states, Nord Stream 2 is mostly opposed due to its threatening character to the energy security of the EU.***

This hypothesis is formed on two pillars, one is my personal sceptical attitude towards the project's benefits, while the other is more academic. As Punch argues hypothesis can be formed based on some other research that has been done in that research area and it concluded this specific outcome (Punch, 2014, p. 66). Indeed, several pieces of research in this area have been done, some of them supporting the project of NS2 but the majority opposing the project. While these results can be considered as contradictive, they agree on one common thing that the story of NS2 is completely different from the one of its predecessor, despite their resemblance.

Sub-questions were developed while the empirical overview was developed. These questions are used to supplement the primary research question by asking about more concrete details and implications regarding the project. My overall attitude remained sceptical and therefore when asking myself these question I developed these hypotheses:

What is the effect of these projects on the energy security of the EU? – Nord Stream 1 can be considered an asset to the energy security of the EU, while Nord Stream 2 is decreasing energy security of the EU, and primarily countries that are affected by the gas by-passing, more concretely countries of Central Europe and Baltic states

Are Nord Stream 1 and Nord Stream 2 in line with the energy regulations of the EU? – While the current energy regulations cannot be applied on NS1, they are applicable on NS2, which is certainly not in line with them

What is the effect of these projects on the energy dependence of the EU on Russia? – Both of these projects are increasing dependence of the EU on Russia, changing the character of the interdependence into the favour of Russia

These hypotheses will however not be used as a base of the analysis so the whole project remains oriented towards hypothesis confirmation. Contrary to that, this thesis will be written from a completely unbiased standpoint and therefore confirmation or denial of these hypotheses will not influence in any way this project. This attitude corresponds to the neopositivists approach, more concretely mind-world dualism, as I believe that my subjective opinion on things and the object of study are detached. Therefore, while the hypotheses confirmation is not the goal of this study, the formation of a hypothesis is essential for the research (*see 2.1*).

In the following sub-chapter, I would like to introduce a concept of energy security. This concept is used during the whole empirical stage of this thesis, present in every part of the analysis. Moreover, it closely relates to the research question and the whole research design.

2.2.1 Concept of energy security

This thesis is going to be using the concept of energy security and its definition in the analysis and will apply it concretely for natural gas, as this energy resource is the object of the thesis.

While thinking about energy, its trade, and the national interests of different states in connection to it, a concept of energy security needs to be defined first. This concept is going to be used as one of the basic elements around which the thesis is going to rotate. In the most simplified manner, we can say that the concept of energy security is connected to energy supply continuity and potential threats that may cause disruptions. However, energy security is a much more complex concept, affected by a wide range of variables such as geopolitical threats, reliability of supply, economic, and environmental concerns. Therefore, for the purpose of this thesis, it is necessary to provide a more in-depth definition of this concept. There were several attempts by energy analysts to provide a unified definition of the concept, however, they always differ in some of their characteristics. For this reason, in the following part, I will provide my own definition of energy security based on the already available ones.

We can characterize security, in general, within two lines. The first one is the absence of a potential threat or danger, while the second one is the ability and possibility of how to protect oneself from such a threat or danger if it were to happen, nonetheless. With this in mind, we can broaden the initial formulation of energy security and add the aspect of a systematic energy services security response to a potential threat. Energy security is related to energy trade and therefore the term must also include some economic aspects. As Bahgat argues, holding the prices of energy at a reasonable level i.e. not too high nor too low is increasing the

relationship between international companies, producers, and consumers and therefore has positive implications on the stability of energy. Therefore, energy security should be taken as a win-win scenario, rather than a zero-sum situation (Bahgat, 2011, p. 213). Another aspect of energy security is the ability to withstand short and long-term risks. In this regard, short term risk is referring to momentarily interruption caused by e.g. natural disasters; technical issues in the transmission system, etc. while long term risk is related to geopolitical and economic changes and has strategic security nature (Bahgat, 2011, p. 3). To achieve this, countries need to diversify their energy mix, to be able to substitute one energy resource with another if necessary.

One of the biggest issues is the security of supply, which is especially challenging as states are geographically and geopolitically set, and they have limited possibilities when it comes to diversification. Political stability and affinity of producing and transiting countries is the key factor to secure the supply as there are many possible disruptions along the way. Some countries tend to exploit their geographically superior position concerning energy and utilize their status into political pressure onto the more dependent countries. In order to diminish such a threat, countries should diversify their energy sources from more suppliers. Such a move can ensure that even in the event of a breach of agreement, the consumer country will not suffer from any long-term consequences. According to Kruijt et al. we can connect all these categories connected to energy security and highlight out of it four main elements that define energy security: availability, accessibility, affordability, and acceptability of energy (Kruijt, van Vuuren, de Vries, & Groenenberg, 2009). Availability of energy presumes a physical existence of energy source, accessibility works with possibilities of connection between the places of production and consumption, affordability deals with the economic aspects, while acceptability deals with more ethical dilemmas such as sustainability or morality. Since the acceptability part requires a different research approach it will not be examined in this thesis.

Building on all these definitions from different scholars, I have formulated my own definition of energy security as follows: “Energy security is a state in which the actor has ensured that its energy consumption is made of diversified energy resources. In case of non-availability to the actor (country), these resources are imported from a number of different actors (other countries), in order to ensure the low dependency on one of them, while following ordinary market and price formation mechanisms. Moreover, the actor should always seek possibilities of further diversification, if economically viable, to ensure immunity to both short

and long-term threats. The actor should always have prepared an emergency plan if such a scenario would develop, so the impact will not affect the ordinary operation of the actor.”

The definition of the energy security concept was necessary to understand the rationale behind the choice of the theories. Only after it, theories of this thesis can be introduced. Both of them are related and can collaborate easily with it.

2.2.2 The choice of theories

Two theoretical approaches were chosen for this master's thesis – neorealism and liberal interdependence. Despite them being contrary to each other, they have proven to be useful as certain aspects of both are notable while explaining the behaviour of actors involved. These theories are used in the analysis section to support or oppose the author's hypothesis and in general, help to answer the research questions. First of all, both of these theories are in line with the neopositivist's philosophy of science. Since the research in the IR field is not based on experiments, it is based on comparable studies. Thus, the main reason for choosing these theories is their abundant appearance in relevant studies of similar cases. The following lines will explain in details why has been these theories chosen for this particular research.

Realism, more concretely its neorealist version was an obvious choice as it is the theory most connected with the concept of energy security. First of all, energy has been and will be closely tied to the national interest of states. Control of potential energy sources is seen as a huge advantage in that regard. In general, any important role in the complex chain of energy supply is taken by the state is an advantage, whether it is the source country or transmission country, whether it owns the natural resource or owns the infrastructure used for its transport, etc. However, being on the other side of that chain – being a dependent importer is undermining the national interests, and therefore states naturally seek a possibility to change this status. The whole process of control over energy flows is approached from a realist perspective as a geopolitical struggle over power. Realism is helpful as it emphasizes the role of national states, which are using geopolitics to achieve their goals, in our case energy-related ones.

Our case is handling an incredibly complex relationship between the EU and Russia and at the same time bilateral relationship between member states of the EU and Russia. The first visible point is that both NS1 and NS2 projects show a strong influence of neorealism, as a bilateral agreement between Germany and Russia overshadows the power of the EU, which according to neorealist is not an actor that stands above the national interest of a sovereign state.

The decision to go for the project shows German strong determination to obtain economic advantages resulting from these projects, while consciously exposing some other MS to a potentially increased threat from Russia. Realism also argues that to enhance the energy security of a country, a country must seek ways to diversify its supply routes, in order not to expose itself to possible political pressure, if it gets too dependent on supply from one country. In our specific case, NS2 brings exactly this controversy as its construction goes against the ambitions of the EU to diversify. To sum it up, both NS1 and NS2 are perfect cases where neorealism can be used to explain much of the decision making that happened during the last decade, and ultimately will be a theory that can help us to reach the answers to the research questions.

However, we cannot forget that energy is first and foremost a commodity, which is traded daily on the international market. Natural gas is one of the energy sources that also falls under these characteristics, therefore it is subject to basic economic principles such as supply and demand, and the ultimate goal of trading is, in the end, a commercial profit. For this reason, a theory of liberal interdependence has been chosen as a competitive theory to realism, to provide a full picture when it comes to natural gas being used as a commodity for trade on one hand and political leverage on the other.

Firstly, liberal interdependence is a useful theory as it works with the concept of complex interdependence, which is sharing the realists' state-centric perspective, but also takes into account transnational actors and international organizations (Keohane & Nye, 1977, p. 18). This proves to be useful in our case, as there are national actors such as Russia and Germany, an international organization like the EU and transnational actors like major oil companies.

Secondly, concerning energy trade, the theory of interdependence argues that the security level is increasing hand in hand with the complexity of the process. It means that the importer and exporter are co-owners of different parts of the chain, e.g. importer has shares in the upstream companies, and exporter has shares in the downstream companies. In this scenario according to theory, the chain should be indestructible as it would be mutually destructive to break it while it is in the common interest of both actors to maintain the relationship. This also proves useful as the complexity of relations between Germany and Russia and the EU and Gazprom is unmeasurable. Moreover, Nord Stream 2 has been since the beginning questioned in that regard, as legal requirements of the EU demand from the upstream (Russia) to be opened to fair market, more concretely third-party access, which Russia so far has been denying to implement.

2.3 Methods

In order to conduct research while following the design introduced in the previous chapter with the neopositivists philosophy of science in the background, two methods have been selected as the leading tools when constructing the analysis. These methods are comparison and deduction, both of them explained in the following paragraphs.

A comparison is an essential tool while doing a comparative study, in our case of NS1 and NS2. It is applicable to both qualitative and quantitative research, which is usable as the thesis works with both of these aspects. Tesch (1990) described it as the central intellectual activity in the analysis (Punch, 2014, p. 179). In the thesis, a double comparison is offered. Firstly NS1 and NS2 are compared, with the aim to essentially answer the research question. On the other hand, there is a visible comparison between the proponents and opponents of these projects. Even though it is not the aim of the thesis, the latter serves as the designator of controversial aspects of NS1 and NS2.

The deduction, in simple words, is a process where the researcher goes from the general to the particular while trying to reach the most logical conclusion Johnson-Laird argues that: “deductive reasoning is the mental process of making inferences that are logical” (Johnson-Laird, 2010, p. 8). Apart from being my favourite method, it is finely applicable to this thesis. Since it works with a vast amount of resources available concerning the topic, up to the specific numbers about gas flows, all these things are combined, filtered and subsequently reduced to specific findings. Moreover, deduction is widely used in connection to hypotheses forming and their subsequent testing (Punch, 2014, p. 66), therefore it is an obvious choice.

2.4 Data Collection

To increase the validity and reliability of this project, careful considerations have been made while choosing the data sources. Firstly, in order to ensure the best level of objectivity of sources, the analysis of this thesis draws from different sources published in different countries. The possibility of e.g. German and Russian sources to be praising the project, while Polish trashing it was too big, therefore a careful process of consideration which part of the information from these sources is unbiased and usable for the project. Secondly, a focus has been placed on the date of release of them. Since the Nord Stream 2 project is still under construction and changes can be made practically any day it was important to work with the newest information possible, especially in the analysis part.

This project is built on two different types of sources, which are primary and secondary. The primary resources serve us to present direct empirical evidence of some particular issue. That is why this project is mainly focusing on them, as they should provide the most objective truth. Primary resources include official statements of high politicians involved, official documents released by the institutions such as the EU, EC, IEA, etc. also documents released by states, namely Russia and Germany. Furthermore, a lot of statistical data has been used from yearly releases of energy reports, energy outlooks.

Secondary data were mainly collected from the AUB database and included academic papers, reviews of the books, or other studies related to the topic. While the discussion of these projects has been very lively in recent years, mainly on the political stage, there is not yet as many academic studies were done in the field, as one would imagine. Therefore, the usage of academic researches already done in this field as a source was limited. Newspaper articles have been also used, mainly to capture the reaction of the public, however, they were not used as a decisive type of source, since they were written mostly in strong pro/against fashion.

2.5 Limitations

While analysing the topic of the thesis, several limitations have emerged, which will be mentioned in this part. Firstly, due to several reasons, namely the abundance of resources and the attention of researchers, the analysis of this thesis will put slightly more emphasis on NS2 project. However, this does not decrease the validity, as NS1 analysis will be sufficient to answer the research questions. Secondly, throughout the analysis part, many figures are offered, mostly statistics from energy outlook, or different reports. These statistics, however, not always included precisely the data needed, therefore some figures must have been calculated by the author (eg. demand figures in parts 5.1.1 and 5.1.2). This has been done after long consideration, realising that some imperfections in the data calculated may slightly decrease the reliability of this thesis, however, its aim is not to provide 100% precise numbers but answer the research question. To achieve this, those numbers serve as illustrative tools, supporting the analysis. Lastly, due to the maximum allowed scope of this thesis, some parts of the analysis must have been left out, alongside the required modifications of research questions. A more in-depth analysis would add to the reliability and validity of this study.

2.6 Validity and reliability

With all methodological aspects defined, the only thing that remains is to address the quality of findings. All academic researches are expected to deliver findings, in our case answers to the research questions and confirmation/denial of the hypotheses. However, in order to inspect the quality of these findings, a more thorough evaluation must be applied, one that examines how much confidence we can put into them. For that purpose, this section is going to describe the expected internal/external validity and reliability of this thesis.

Internal validity deals with the internal logic of the thesis and consistency of its research (Punch, 2014, p. 323). However, it can be easily contaminated by the available variables and their correct interpretations. This thesis is trying to avoid it mainly by the choice of the sources – mainly relying on unbiased sources or combining polarised ones into what is according to the author the most objective compromise. Moreover, statistical data are collected from world-renowned experts like IEA or BP, to ensure maximum quality and objectivity. When it comes to external validity, we are talking about the generalisability of the findings. This study refers to NS1 and NS2 at the forefront of energy relations between the EU-Russia. Therefore, a certain generalisation from the findings of this thesis could be applied, mostly to other energy infrastructure project between these two actors. However, generalisation beyond the pair of the EU and Russia is not recommendable, as the geopolitical background is complex and specific for these two.

Reliability refers to the extent to which the study can be reproduced with approximately the same results. In our case, as with many IR researches the high levels of reliability are hard to achieve. Firstly while examining different sources, the author creates its own truth, when trying to get as close to “the absolute truth”. My personal bias has been demeaned to a minimum on the grounds neopositivist philosophy of science. However, different authors might come with different results, especially as the core of the thesis depends on point of view. On the other hand, when working with quantitative data in the analysis, more concretely statistics from IEA and BP, and calculations the reliability should be well profound, despite possible small deviations, as mentioned in the limitations chapter.

3. Theory

3.1 Neorealism

Neorealism or structural realism is a theory of international relations that is developed on basic elements of the classical realism theory, however, it explains differently the behavioural rationale of individual states. It is considered to be one of the most influential approaches to the international relations of the last decades. It was first defined in 1979 by Kenneth Waltz in his book “Theory of International Politics” (Jackson & Sørensen, 1999, p. 59). To understand Neorealism, first, there is a need for an explanation of realism as a concept that covers all different sub-types and whose principles form the core of the theory.

Long before realism was coded as a theory many influential theorists of their ages such as Thucydides, Niccolò Machiavelli, Thomas Hobbes, Jean-Jacques Rousseau were working with the idea of it (Baylis, Smith, & Owens, 2014, p. 100). The core of realism can be explained through the definition of the state combined with the environment in which it is located. The state is identified as a principal actor, seeking to obtain power or reach a particular goal, which is called national interest. This interest can be of various types, whether it is most obvious like gain territory or natural resources, but also more subtle ones like obtaining political leverage towards another state. However, the most important of the national interests of all states are the same – survival. Such a state is afterwards set into an environment with no morals or ethics, as realists argue a condition of anarchy. In it, there are no rules and no entity that is higher than the state itself, therefore no one to serve as an ultimate ruler or arbitrator of potential conflicts. Therefore, it is every state for itself with no central authority. There are three core principles that we can connect to realism – statism, survival, and self-help (Baylis, Smith, & Owens, 2014, pp. 100-110).

Statism defines the state as the main actor in international politics with sovereign power. Sovereignty means that the state is the ultimate actor in a limited geographical area that has the supreme authority to enforce laws. Realism does not heavily address inner-state problems, but rather presumes that these are solved, and focuses on the external relations. Since the external relations are based on the environment of anarchy, states must compete with other states to obtain power and security. This competition is often viewed as a zero-sum game, which means that where one state gains some power, the other loses. **Survival** explains that the ultimate objective of every state is survival. Only with this condition safely secured the state can start focusing on other goals, whatever they are. As described by many realists the survival

of the state is so important that sometimes it even requires sacrificing its citizens. It also plays with the idea of wrongdoings for the “greater good”, in this case meaning the survival of the state. However, the discussion of the amount of power needed for a state to ensure its survival has been a reason for a split into Defensive and Offensive Neo-realism (*described below*). **Self-help** deals with the fact that in the anarchical international system there is no higher authority than the state itself. There is always a possibility of a state waging war against another, as there is no higher authority to stop it from the use of force. Therefore, the states must rely on themselves to secure their position. However, if one state seeks to achieve security, it may seem in the eyes of others as a potential threat, in other words creating a notion of insecurity in the latter. This is called a security dilemma (Baylis, Smith, & Owens, 2014, pp. 100-110).

Neorealism compared to classical realism changes the rationale behind the state's behaviour. Classical realism describes states behaving ultimately like human beings, with a desire to dominate others in their struggle to gain power. Neorealism argues that it is the structure of the international system that defines the behaviour of the states. That is why neorealism is often regarded as structural realism. For neorealists, the regime types or goals are irrelevant, contrary to e.g. realist theory of Morgenthau (Lebow, 2011). According to Waltz, the concept of the international system is in many ways comparable to one of the classical realists. It is anarchical in structure, which means there is no higher authority to dominate the system other than the individual state. This system is more than likely to persist, as the states value their sovereignty more than anything else. Moreover, the international system can be subsequently divided into smaller units – states. Every one of these states performs similar tasks on a daily basis, that is to govern, collect taxes, adopt laws, etc (Jackson & Sørensen, 1999, p. 51). There is however one aspect that differentiates them, and that is their power, more specifically their relative power, which is the power that one state can exercise respectively to the other state's power.

Neorealism also works with the concept of the security dilemma. Due to the anarchical structure of the system are individual states exposed to insecurity and uncertainty. In other words, any state can potentially start acting aggressively towards another state, as in this international system no higher authority could prevent it from doing so or arbitrate such conflict. That is why the only way how a state can enhance its security is by gaining more power. If the state manages to get enough power, it can enhance its position to become a hegemon in its neighbourhood, eventually in its region. Such a position will subsequently ensure the security of the state, as there will be no other state capable nor willing to challenge

the hegemon. However, the other states of the region will feel threatened by this rise in power and will try to counteract in a form of increasing their own power or undermining the ambition of its rival. Neorealism argues that even in the international system where every state would only have the best intention, there would always be a conflict due to the security dilemma (Lebow, 2011). The best example of this behaviour can be seen in military build-ups of states. As one state is building up its military, strengthening its army numbers, advancing in warfare technology, or deploying its troops, it manifests its power, therefore also strengthens its security. However, for other states, this means endangerment of their security as they suddenly fall behind and feel more vulnerable to potential aggression. This behaviour of states usually leads to an arms race, mutual threats, eventually an armed conflict, e.g. the armed race between the US and Soviet Union, nuclear proliferation of India and Pakistan, etc.

Another concept that Neorealists are working with is the polarity of the system, the key aspects that define it, the number of relevant actors, and the distribution of power across the global community (Lebow, 2011). There are three types of polarity – unipolarity, bipolarity, and multipolarity. According to Neorealist the polarity of the system is constantly changing, with one leading to the other. Unipolarity presents the most secure and stable system. The one global hegemon is powerful enough to enforce order and stability across the system, with no one strong enough to challenge it, e.g. Roman Empire during antiquity, the US after the end of the Cold War. Bipolarity can be also seen as a system with relative stability and security because two rivals that are competing for the status of hegemon usually possess about the same military potential. Therefore, an open conflict between them might end up with both of them losing their power and status compared to the rest of the international system. The best example of this system is the Cold War era and a rivalry between the US and the Soviet Union. The last of the systems – a multipolar one can be considered as the least stable of them all. In this system, there are three or more global powers, all in pursuit of getting more power and eventually becoming the hegemon. According to the theory, there is a presumption that all these competing global powers are about the same power when it comes to economy or military, and therefore alliances between them are crucial to maintaining the balance of power. The uncertainties of these alliances and potential betrayals or new actors joining an alliance present a threat to this balance, as it is constantly shifting and none of the actors feels truly secured. Moreover, the calculations of the potential power of such alliances are really hard to make, a fact that only makes such international scene tenser and therefore increases the possibility of military conflict (Lebow, 2011).

Although the Neorealism is considered to be a rival theory with the neoliberalism, they do share some common points. The most important one of them is that neorealists admit that the cooperation between states can be of use while seeking power. However, they argue that this kind of cooperation is not in place because of some “common good” but only because of selfish intentions of the state and it is feasible only while it corresponds with its national interest. So as they say just because there is some cooperation between a group of states, that does not immediately mean that the neoliberal theory is right and neorealism wrong (Jackson & Sørensen, 1999, p. 52). Apart from that, they argue that while cooperating with other states a dilemma emerges, whether this kind of cooperation is not more beneficial for the others, as Waltz described it: “When faced with the possibility of cooperating for mutual gain, states that feel insecure must ask how the gain will be divided. They are compelled to ask not ‘Will both of us gain?’ but ‘Who will gain more?’” (Waltz, 1979, p. 105). However, a small and relatively weak state cannot afford the luxury of asking these questions, for them, cooperation presents a way how to preserve their autonomy (Jackson & Sørensen, 1999, p. 51).

As mentioned earlier, neorealism can be divided between two of its branches – Defensive and Offensive realism. They differ in the amount of power that the state is trying to get in order to achieve its survival and security. Defensive realism, most famously represented by Kenneth Waltz himself, is arguing that states are focusing on achieving low levels of security, just the right amount to secure its survival. According to him, the states are not power maximizers but security maximizers: “because power is a possibly useful means, sensible statesmen try to have an appropriate amount of it... in crucial situations, however, the ultimate concern of states is not for power but for security” (Baylis, Smith, & Owens, 2014, p. 105). On the international level, states are trying to strengthen alliances or international institutions to maintain the balance of power. Offensive realism, on the other hand, argues that the structure of the international system forces states to maximize their relative power. By doing so they get enough influence to dominate others, after which they continue to seek more power, step by step climbing the ladder to eventually become the regional and later global hegemon (Mearsheimer, 2001, p. 3). Mearsheimer however also argues that reaching a position of the global hegemon is virtually impossible, nevertheless the states will continue to compete for this status perpetually (Baylis, Smith, & Owens, 2014, p. 106).

3.2 Liberal Interdependence

In contrast to neorealism and its power-oriented politics approach to explain international relations, liberal interdependence takes completely another angle, trying to explain it through

mutually beneficial relations, cooperation, and agreements in state-to-state relations. The “fathers” of neoliberal theory and the first ones to establish a concept of complex interdependence and set forth a general theory based on it were Robert Keohane and Joseph Nye, Jr. in their book *Power and Interdependence* (1977) (Jackson & Sørensen, 2013, p. 107).

“The appropriate response to the changes occurring in world politics today is not to discredit the traditional wisdom of realism and its concern for the military balance of power, but to realize its limitations and to supplement it with insights from the liberal approach” (Nye, 1990, p. 177)

Before them, the concept of economic interdependence has been already examined and theorized by scholars like Adam Smith or Immanuel Kant. According to them, states that have been in economic relationships with other states tend to look more appeased and less likely to go to war with their “partners”. This belief is contrary to Marxists’ view, as they believed that precisely economic interdependence is the source of conflict, especially in a relationship between developing and developed states, as this relation is based on the exploitation of the developing state by the developed state.

The argument Keohane and Nye make is that after World War 2 a new form of interdependence formed between the states – a complex interdependence. Pre-WW2 states dealings with other states were controlled by their leaders, with the possibility of usage of military force was always there. Therefore, the “high politics” of ensuring security and survival was of much more importance compared to “low politics” of economics and social affairs (Keohane & Nye, 1977, p. 23). However, under the complex interdependence, this is no longer true. Firstly, relations between states are no longer concentrated around the relation of their leaders, as there are many more actors involved. Secondly, there is plenty of actors that are outside of the state who possess political power in international relations. Thirdly the usage of military force is not as effective tool as it was before WW2, mainly due to the complexity of interdependence of the majority of states (Jackson & Sørensen, 2013, p. 107).

Economic interdependence, in other words, a trade relationship, is often described as the most basic type of interdependence, in most cases the first one to be achieved between states, serving as the base for building more complex interdependence. Mutual dependence between two states means that the former is affected by the actions of the latter and vice versa. Liberal interdependence theory indicates that the international system should endorse such cooperation between states that share some interests, provided that the states are willing to

cooperate together. The logic behind these policies is that mutual trade is needed and it serves as a motivation for the states to strengthen the bonds also in other areas, which in result, as Krickovic describes it builds the “web of interstate linkages that tie states together and decrease the possibility of conflict between them” (Krickovic, 2015, p. 4).

Keohane and Nye introduced the concept of complex interdependence, that describes a relationship between two or more states that got interdependent on each other in many aspects, not just economical, and therefore their interconnectedness has risen to a very complex level. It can be used when analysing international politics, especially between nation-states and intergovernmental institutions, transnational institutions, and many other actors on the international scene. These actors become mutually dependent, which means that they are vulnerable to each other’s actions on one hand, and yet thriving when the dependency is beneficial for them all. The ambition of individual states behind this cooperation is not reflecting some desire for the common good but stays within the boundaries of national interests. As these national interests are common for the states cooperating, the prosperity and stability in the international system is subsequently a direct result of such cooperation (Genest, 1996). Also as Baldwin argues, in a mutually beneficial interdependence, the states realise a potential cost by cutting this relation, therefore they prefer not to break it, as well as higher costs connected to being autonomous in comparison to being economically interdependent (Baldwin, 1980, pp. 489-492).

However, as they argue the interdependence is not always a zero-sum game for all actors, a situation of evenly balanced mutual dependence. They argue that: *“it is asymmetries in dependence that are most likely to provide sources of influence for actors in their dealings with one another. Less dependent actors can often use the interdependence relationship as a source of power in bargaining over an issue and perhaps to affect other issues”* (Keohane & Nye, 1977, pp. 10-11). Therefore, they distinguish between symmetrical dependence, where two actors are more or less equally dependent on each other and asymmetrical dependence where one actor is significantly more dependent on the other. Theoretically, a case of symmetrical dependence should decrease the probability of breaking the relationship between the actors, as both of them would receive a similar economic blow in case of the cut of relationship. The asymmetrical interdependence can cause a feeling of insecurity in the more dependent actor while giving to the less dependent actor some degree of leverage with the more dependent actor, which can be used even in completely not related issues to the favour of the

dominant partner. This is causing a rise in tensions between the actors and can lead to conflict (Krickovic, 2015, p. 6).

Based on this logic they introduced two terms – sensitivity and vulnerability. These terms are used to describe the extent of costs involved when an asymmetrical relationship would break or substantially changes, and how would these costs influence the concerned states. These costs are usually higher for the more dependent state in the asymmetrical interdependent relationship. If such a scenario happens, two possible outcomes may occur:

- a. States will suffer from temporary losses but after a short period of time they are able to recover. These states can make additional agreements with other states to substitute the missing one or change policies in order to not repeat the scenario in the future. We say that these states are sensitive as they have these possibilities, so the only costs from changes in the asymmetrical relationship are short-termed.
- b. States will suffer from long term loses, and is unable to recover from them easily, as the instruments such as making agreements with some other states are not a possibility. It was and still is highly dependent on that asymmetrical relationship, and its potential change may have a devastating effect on that state. In this scenario, we say that the state is vulnerable.

Sensitivity is important mainly for politicians and leaders as it touches mostly the economic sphere. However, vulnerability is taken more seriously as it can affect the daily life of all people living in the concerned state. The distinction between those two terms is very important, as the vulnerability interdependence adds up a strategic dimension (Keohane & Nye, 1977).

To sum things up, liberal interdependence can be assigned to modernization which increases the level of interdependence between individual states. Under the condition that the complex interdependence is achieved the military forces become less useful and security is losing its status as the main objective and concern of states, while on the other hand the importance of transnational actors is increasing and the welfare instead of security is becoming the leading objective of the states (Jackson & Sørensen, 2013, p. 110). According to the theory, this level of interdependence consequently creates incentives for peace and reduces the probability of violent conflicts. On the other hand, especially a critique from the advocates of realism points out that the level of interdependence between states is not always proportioned, and this fact can be the source of a potential military conflict.

4. Empirical Overview

The following sub-chapters of the thesis are going to be devoted to a description of background information regarding the topic of the thesis. This step is needed to ensure that at the start of the analysis, all the necessary background facts have been stated.

4.1 Development of the Natural Gas and its European market

Natural gas, at first considered an unwanted product of the oil extraction started to get momentum after WW2, covering one-third of US domestic consumption, proving itself worthy to fuel industries. This development spread into Europe and especially the Soviet Union (Barnes & Hayes, 2006). The second wave of increased gas consumption is connected with 1973 and the famous oil embargo of OPEC countries which caused prices of oil to skyrocket. This caused many countries to rethink their energy strategies and look for other energy sources than oil. Since then oil has been losing its dominant position on the energy market, from 46% in 1973 to 32% in 2017 (IEA, 2019). Many European nations decided to look for a near source of natural gas in the near neighbourhood. Apart from some gas production and export from European countries like the Netherlands, Norway, and import from the African coast of Algeria, the most important exporter of natural gas for Europe became the Soviet Union. The US and many others have feared the dependency of Europe on Soviet gas but the vision of reliable vast quantities of gas coming at a cheap price was far too attractive for European states, especially Germany.

The possibility of delivering gas only through pipelines was significantly limiting its growth and emergence into one big world market. The technology of converting natural gas into its liquid form, while decreasing its volume about 600 times, was invented in the US at the beginning of the 20th century, however, its first commercial use can be dated to 1964 where its shipment from Algeria arrived to Great Britain (CLNG, 2020). Although the possibility of transporting gas in form of Liquified Natural Gas (LNG) was without a doubt a breakthrough, however, it has proven to be less economically viable compared to pipeline transport, especially at that time when new actors entered the market, namely the Soviet Union with its large quantities and low price. Only countries like Japan which did not have many opportunities to get connected via pipeline pushed for LNG trade. Together with Taiwan and South Korea, they presented two-thirds of world demand for LNG until 2002. From then the new technological advances which decreased expenses connected with LNG such as the building of tankers and terminals, in combination with increased demand truly built a considerably increasing LNG

market. Many countries that would not be able to sell their gas resources in an “ordinary” way due to the vast distances such as Australia or Indonesia started to export LNG, alongside African countries of Nigeria, Algeria, Libya. The status of the biggest exporter is currently held by Qatar, however, more countries are getting involved, especially the US which has increased its export of LNG by 60% in 2019 (DiSavino, 2019).

4.2 Energy Security of the EU

The importance for European nations to cooperate had become obvious after WW2 when a devastated continent needed cooperation to overcome the consequences. Already at that time energy was one of the pillars of such cooperation mainly represented by coal which formed more than 80% of energy mix at that time. This, alongside other essential resources, gave the way for the first union of such kind - European Steel and Coal Community. In the 60s and 70s oil overtook the coal as the leader of fossil fuels and it looked solid until the oil embargo in 1973. That can be considered as the first time when European countries started to think more carefully about their energy security and the need for cooperation to achieve it.

However, not that much has been done in following years, so we can start talking about serious measures to achieve energy security only from the 1990s, connected to the gradual rise of the price of fossil fuels, changing geopolitical situation and last but not the least the increased concerns about the environment. Moreover, a new term emerged with the connection to this - energy pressure, which was pressure from the energy supplier to its importer in the form of cutting the supplies or increasing the price. This pressure started to be used regularly as a standard political tool (Waisová, 2008). Apart from that, Putin’s Russia emerged what appeared to be ashes of the Soviet Union with new power ambitions, using its energy dominance to create political pressure in its close neighbourhood. Because of conflicts of interests between Russia and Ukraine, the gas export to the EU was interrupted in 2006 and 2009, which intensified the need for dealing with energy security questions. This finally became a matter withing the competences of the EU with the signing of the Lisbon Treaty in 2009.

According to the Article 2C of the Treaty of Lisbon, the sector of energy has been moved to the category of shared competences, which means it is influenced by both decision-making actors, the EU, and member states. Moreover, Article 176 A is devoted to the energy, where the EU appeals to MS that in “spirit of solidarity” they will:

- a) *Ensure the functioning of the energy market*

- b) Ensure security of energy supply in the Union*
- c) Promote energy efficiency and energy saving and the development of new and renewable forms of energy*
- d) Promote the interconnection of energy networks*

(TREATY OF LISBON, 2007)

However, this appeal to solidarity within MS is a vague statement, and the crucial issues in the field of energy remain under the competences of individual MS. Therefore, stronger legislative action is needed for the EU to create a more coherent energy policy, as this is not enough and with different energy mixes of individual MS, almost impossible to create a consensus. Despite this, the EU continues with its efforts, policies, and strategies to unite MS with the goal to unify them and secure the energy market.

In order to achieve energy security within its territory, the EU is trying to implement the strategy revolving around the exponentiation of the common energy market. To make the flows fluent, markets need to function liberally with smoother cross border trade, resulting in the interconnection of the national markets and giving each customer more alternatives to choose from suppliers within the competitive environment also because of the liberalization of the operation of transmission networks. In the last decade, the EU has been trying to build its energy security based on two basic dimensions – internal and external, supported by one more – environmental. Internal and environmental is dealing mainly with the increased energy effectiveness, decarbonization, integration of the inner market, and overall strengthening of the EU negotiation power when it comes to dealing with third countries. For the purpose of this thesis, the important is the external dimension. In this regard, the EU has started with different measures and instruments to enhance the security of its energy supplies. Most of these activities are directly or indirectly connected to Russia since it is the biggest supplier of the EU.

Looking particularly at the natural gas, we can observe that energy security is far from being achieved. Although natural gas is the preferred energy source for most of MS, its supply is much less diversified compared to oil. Many of the EU countries are heavily dependent on gas imports from Russia, while in some of these the Russian import is the only source of natural gas available. That is why the long-term ambition of the EU is to diversify its natural gas sources, mainly to lessen the dependence of the MS to Russian imports. Former EC Commissioner M.A. Cañete supported this claim by saying that the gas infrastructure plays a key role for the EU, highlighting the fact that the resources for diversification are available, what remains is only to manage it properly:

“Europe is geographically close to the majority of the world's gas resources. Beyond this ring of immediate suppliers there are liquefied natural gas exporters who we can reach out to and bring into our market. This means that while sufficient gas resources are physically available for Europe, managing political risk is a key challenge for Europe.” (Cañete M. , 2015)

Because of this, the EU initiated many projects that could serve to strengthen its energy security, projects like Nabucco or Southern Gas Corridor. Despite Nabucco not being considered an active project now, it shows a determination of the EU to look for the diversification of suppliers, trying to connect the Caspian Basin, Central Asia, the Middle East, and Eastern Mediterranean bases with the EU gas market. Apart from that, the EU is trying to promote usage of the LNG as new suppliers are appearing at the market, with a goal for all MS to be able to benefit from the LNG market, especially countries of Baltics and South-Eastern Europe. This is done by placing LNG projects like regasification stations under the file “Projects of Common Interest” (European Commission, 2020).

Last, but not the least, the EU is trying to achieve its energy security through a series of legislative processes within its legal framework. Several initiatives and directives have been adopted, with more or less success. For this thesis, the most important from the legal framework is the Third Energy Package.

4.2.1 Third Energy Package

Negotiations within the EU to unify and strengthen the inner energy market led mainly to the adoption of three energy packages. These packages complement each other, with every one of them introducing new changes. Although First and Second Energy Packages, adopted in 1988 and 2003, has been dealing with most of what is involved in the third one, they did deliver expected results, as the definitions in them were not precise enough. That is why in 2009 EC adopted the Third Energy Package intending to improve the way internal energy market functions and to resolve particular structural problems (EC, 2020). Third Gas Directive which is one part of the Package is the most relevant for this thesis, specifically articles regarding third-party access and unbundling.

“Member States shall ensure the implementation of a system of third party access to the transmission and distribution system, and LNG facilities based on published tariffs...”
(Directive 2009/73/EC, 2009)

According to Article 32 (see above) non-discriminatory access to the pipeline must be given to all interested parties. This can be considered as a foundation element for the liberalization of the energy market. The risk of discrimination, however, remains until an effective separation of networks from activities of production and supply takes place (Directive 2009/73/EC, 2009). That is why the Third Gas Directive deals with this “effective unbundling” and presents three different ways how to proceed, with freedom for every MS to choose:

1. Ownership unbundling (OU) – stipulates that gas production must be separated from the transmission system through different ownership rights. Companies that possess such shares must sell them in order to create an independent transmission and distribution systems. Moreover, these companies are not allowed in any way to interfere with the independent transmission system operator
2. Independent system operator (ISO) – Energy supply companies are allowed to maintain their ownership of the transmission systems but only on a formal level. They must hand over the entire operation of the system, its maintenance, and investments to an independent company.
3. Independent transmission system operator (ITSO) – Allows for companies to maintain their ownership (same as in ISO), but require for them to create a subsidiary that would effectively take care of transmission, and with that separate production and distribution. This newly created subsidiary would have completely independent human, technical, and financial resources, and all decisions must be taken without any intervention of the parent company.

(Directive 2009/73/EC, 2009)

Overall, the Third Energy Package is preventing non-European countries to gain control over a transmission system, while in their own countries the legislature does not allow the entrance of European energy companies to their market following principles of the liberal market. If we apply it to our situation, the package is aimed to counter offensive strategies of producer countries like Russia, which are trying to gain control over European pipeline transmission infrastructure, through the medium of their state-controlled energy companies like Gazprom (Obadi & Korček, 2014).

4.3 Energy relations of the EU and Russia

As it was already mentioned the relations in the field of energy between EU and Russia go way back to the times of the Soviet Union. While during those times trade relations remained

relatively stable and without much of problems related to it, after the fall of the Soviet Union, it slowly started to change. A series of events has been undermining this “perfect” cooperation and ultimately led to what we have now –two diametrically opposing attitudes towards cooperation with Russia. On one hand, we have traditional supporters like Greece and Cyprus, on the other countries like Poland or Lithuania that distrust Russia the most and strongly oppose most of the trade agreements. This attitudes can be also supported by the discourse used by EU political leaders, for instance as former EU Commissioner for Energy Günther Oettinger stated repeatedly: “Russia is our most important external supplier of energy resources” a “key (strategic) energy partner ...” and “the EU stands ready to further develop and deepen its energy relations with the Russian Federation” (Tichý L. , 2016, pp. 73-74). On the other hand, former EC president J.M Barroso concluded that Russian behaviour is unacceptable, and “the RF has to choose whether it wants to be a strategic partner or a rival.” If it “opts for the second alternative, then we all collectively have to take political, economic, and security measures” (Tichý, 2019, p. 12). In the following section of the thesis series of events are going to be described that influenced this complex relation between Russia and the EU in the energy field and how they influenced their energy relations, covering the period from 1990 to the present.

First of the breaking points of relations between EU and Russia was undoubtedly a conclusion of the European Energy Charter in 1991, which afterwards led to the signing of the Energy Charter Treaty (ECT) in 1994. Its primary aim was to introduce concepts of the liberal European market in the field of energy to the former communist countries of Central and Eastern Europe and former states of the Soviet Union. In short, it would open the internal energy markets of those countries to foreign investments. Another one of the goals was to open exceptionally vast Russian resources to European energy companies, that could profit from extracting Russian gas or transiting Russian gas on the way to Europe. Even though Russia signed the ECT and applied it to some extent, it never fully ratified it. The main reason was non-agreement between the EU and Russia when it comes to free access to transit sites (Duffield & Birchfield, 2011). Access of third parties into Russian pipelines would severely weaken the power of the state in this sector. Moreover, this would allow Middle Asian producers of energy such as Kazakhstan to enter the European market directly, through using Russian pipelines as a transit. This kind of scenario would be prosperous for every actor, except Russia, who would lose its status of re-exporter of Middle Asian resources and would become an ordinary transit country.

Another incident that only increased distrust between the EU and Russia was the case of the oil company Yukos. It was one of the biggest and most successful Russian companies on the oil market, covering around 20% of Russia's oil output. However, due to complex political reasons, the CEO of Yukos Mikhail Khodorkovsky got arrested, charged with fraud and tax evasion, assets of the company got frozen until it was forced to sell its shares to governments controlled oil companies. This transfer to state ownership was not only connected to many controversies in the first place but also was a direct violation of ECT, which did not permit this kind of state's intervention. As ECT has proven to be a failure in this regard, the focus got reoriented to another project – EU-Russia Energy Dialogue. However, even this initiative did not elevate the EU-Russian energy talks to the expected level, and therefore, up to this day both EU member states and Russia prefer bilateral negotiation (Duffield & Birchfield, 2011).

However, the biggest incidents that have helped the EU to realise the importance of energy security and a need to diversify its natural gas import from Russia are two Ukrainian gas crisis. Both of these crises emerged as a result of a disagreement between Russia and Ukraine about the gas prices, which resulted in the cutting of supplies for Ukraine. Ukraine in response diverted natural gas addressed to Central Europe for its own supply. Although this was not by far the first disagreement between Russia and Ukraine, it was the first that had an actual impact on the EU countries. The first natural gas crisis happened on 1. January 2006 when negotiations about the price of the gas failed and therefore, Gazprom began to lower the pressure in the pipeline, however, the preliminary agreement rather quickly resolved the crisis, and full volumes were restored on 4. January. The second gas crisis in 2009 was much direr, as Russia decided to completely cut-off the supply of natural gas at the peak of the season on 1. January, until a new agreement between them, will not be negotiated. The new agreement was adopted eventually, after a lot of pressure from many actors apart from Russia and Ukraine and ended the crisis on 22. January. However, many countries of Central and South-Eastern Europe remained completely cut-off for almost a month. Not only political leaders but suddenly also ordinary people started to feel a need for energy security.

The last incident that worsened the relationship between the EU and Russia was the invasion and subsequent annexation of Crimea. Even though this incident is not related to the energy, it once again reminded the leaders of the EU that Russia cannot be taken as a reliable partner. With its continuous support of pro-Russian rebels and unwillingness to give up and return Crimea, it faces sanctions from many countries, with the EU amongst them. However, this situation proves the complexity of the EU and MS relation to Russia. Despite imposing the

sanctions and condemnation of its actions, they continue to realise the strategic importance of Russia, as it remains the major supplier of the energy, especially natural gas and therefore they continue doing business in this area.

It is safe to argue that especially Ukrainian gas crisis and the invasion of Crimea combined raised awareness of Russian power over many European states and prompted the EU to act more actively to lower this power. We can argue that project of Energy Union was developed, among other reasons, because of this shadow cast upon Europe, as former EC president J.C Juncker opened it with these words:

“For too long, energy has been exempt from the fundamental freedoms of our Union. Current events show the stakes – as many Europeans fear they may not have the energy needed to heat their homes. This is about Europe acting together, for the long term. I want the energy that underpins our economy to be resilient, reliable, secure and growingly renewable and sustainable.” (Juncker, 2015)

4.3.1 Gas trade between the EU and Russia

To support the previous chapter and highlight the importance of the EU-Russia relations in the field of energy, a set of statistical data will be presented regarding the natural gas trade. As have been already mentioned several times, Russia is the biggest exporter of natural gas to the EU (figure 4).

Share of the EU imports of the natural gas from country of origin

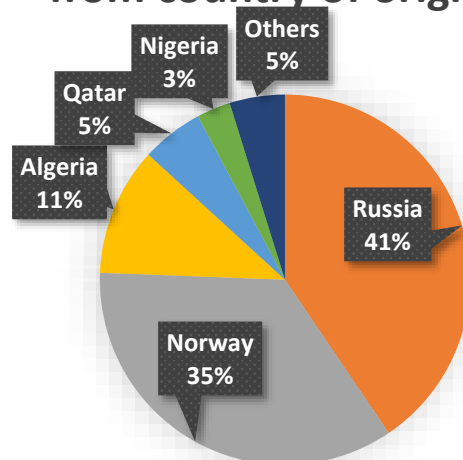
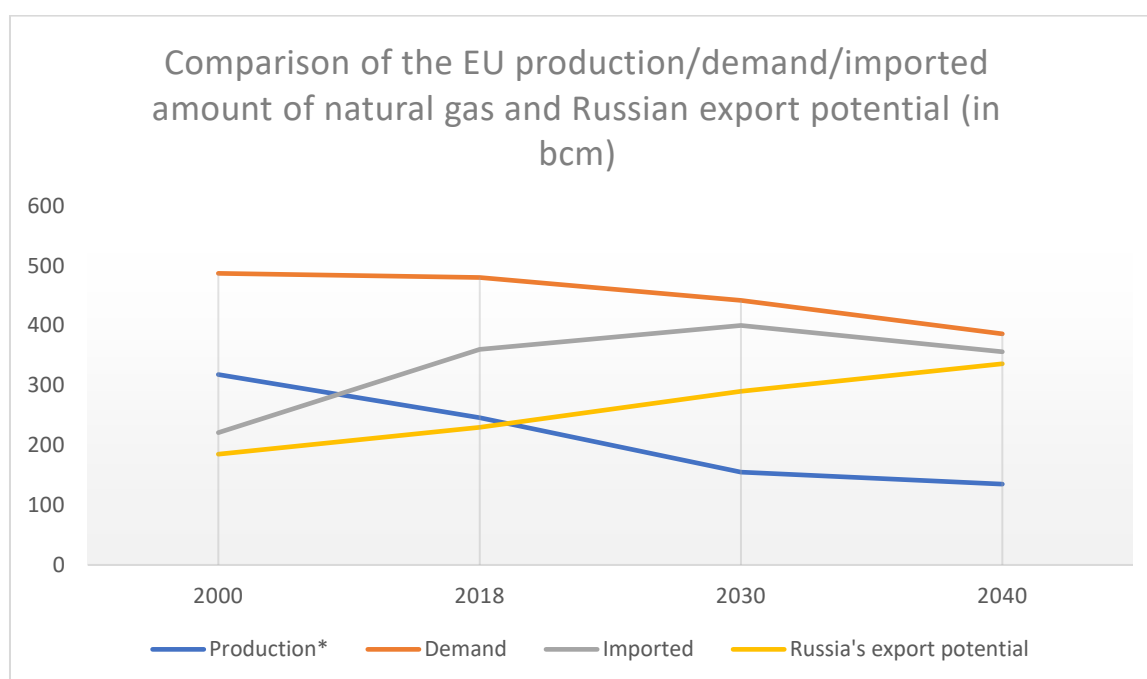


Figure 4; Source: (EUROSTAT, 2019); figure created by: author

Overall, domestic production in countries of the EU has been decreasing for the last years and is predicted to decrease even more in the years to come. Production of natural gas at the Groningen field in the Netherlands has been ceased, due to its earthquake-prone side effects, while production of Norway, currently in second place, has been decreasing mainly due to depleting sources on the bottom of the North Sea. Despite some new off-shore projects in planning, the production is expected to decrease from 318 bcm in 2000 to 135bcm in 2040 (IEA, 2019, p. 185). *Figure 5* shows, as predicted by the IEA, that the overall demand for natural gas in the EU will be decreasing, due to many factors, mostly green ambitions, reduction in the usage of fossil fuels and overall goals to reduce CO2 emissions. Nevertheless, the decline in the demand will not be as high as the decline of production which implies a need for more imports. Furthermore, Russia is predicted to be increasing its production capabilities by starting new gas extraction projects in Siberia, therefore increasing its possible export amounts and defending its position as the world's largest exporter of natural gas. As seen in *figure 5*, Russian gas can be theoretically a perfect solution for the increasing gap between the EU demand and production, speaking from a purely mathematical perspective.



* Norway's production is included in this figure despite not being the EU member state
Figure 5; source: (IEA, 2019); figure created by: author

4.4 Nord Stream and Nord Stream 2

Nord Stream is a system of two offshore gas pipelines running from the Russian city of Vyborg, passing through the Baltic Sea and finishing in Greifswald, Germany (*figure 6*). With the length of 1224 kilometres, it presents the testimony of enormous advancement in technology, as no other gas pipeline in the world is operational on such length without compressor stations (Gazprom, 2020). Thanks to modern materials and technologies used in the project, the pipeline should operate without flow for a minimum of 50 years. The annual capacity of the twin pipelines, operational since 2011 and 2012 respectively, is 55bcm per year. This amount of energy is enough to cover more than 26 million households (Nord Stream AG, 2020).

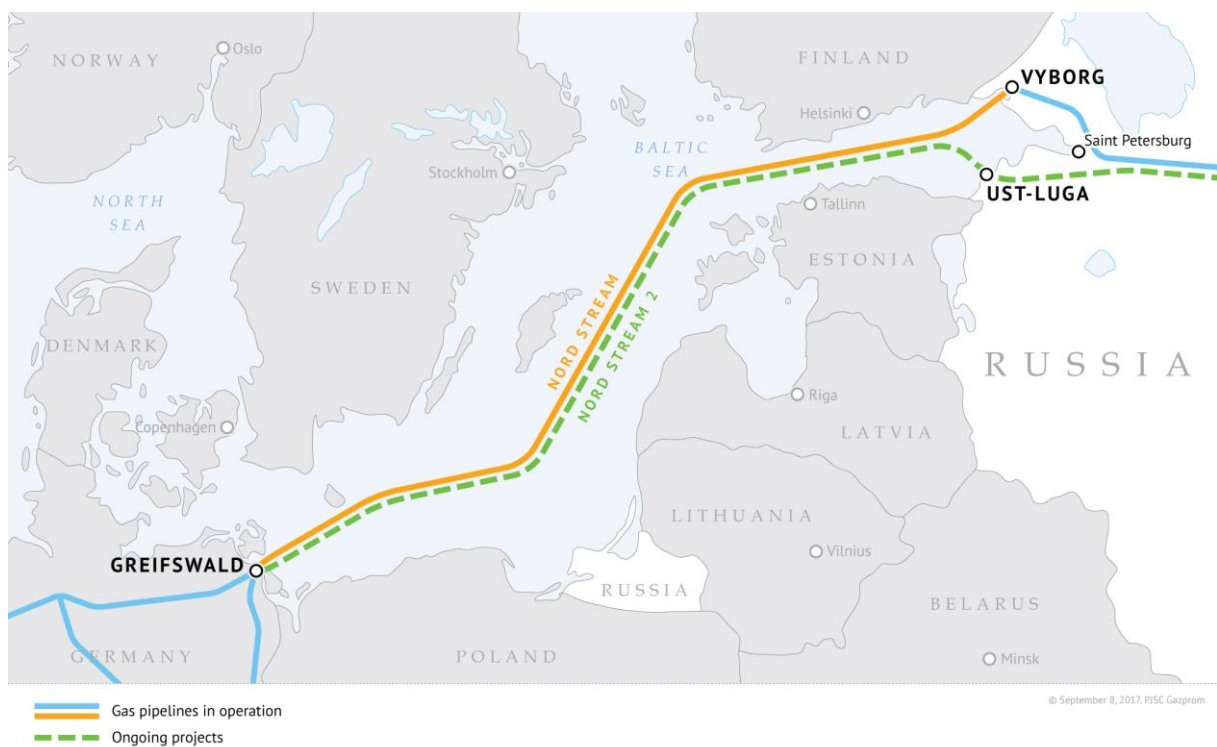


figure 6 - Nord Stream 1 and 2; source: (Gazprom, 2020)

Long before the project of the Nord Stream was created there were already discussions and studies concluded about a need for a pipeline that would go through the Baltic Sea. The potential project received a green light by the European Union in December 2000, as the EU officially recognised a need for such pipeline and incorporated it into the Trans-European Network for Energy (TEN-E) Guidelines (Nord Stream, 2014, p. 11). In 2005 Gazprom a letter of intent with its German counterparts and started to work on the project. Initially called North European Gas Pipeline Company changed its name in 2006 according to the international consortium in charge of this project - Nord Stream AG. In the same year, the EU reaffirmed its ambition to build the pipeline by upgrading Nord Stream plans into “Project of European Interest” within

the TEN-E (Nord Stream, 2014, p. 11). The construction of the project started in 2010, with both lines fully operational from 2012.

Already in 2012, at the request of the shareholders, Nord Stream AG started studying a possibility of laying two additional pipelines from a technical, environmental, legal and investment angles. The study had proven to be supportive of such a project, which has started even more studies and also planning. A partner company Nord Stream 2 AG was established in 2015 to be in charge of planning, construction, and subsequent operation of the NS2 pipeline. One year later the first official documents were submitted. In 2017, Nord Stream AG signed a financial agreement with European companies, which will provide financing of 50% of the total costs. These companies are ENGIE, OMV, Royal Dutch Shell, Uniper, and Wintershall (Gazprom, 2020).

The Nord Stream 2 is a supplementary project to its predecessor Nord Stream 1 designed in a very alike fashion. It will be copying the route on the bottom of the Baltic Sea, using mostly the same technical design, with a small change that it will start at Russian city Ust-Luga (see *figure 1*) and will be a bit shorter – approximately 1230 kilometres. Its capacity will be the same as NS1 that is two lines with 27,5bcm that is 55bcm, altogether with NS1 it can deliver 110bcm per year of natural gas to Europe (Nord Stream 2, 2019).

5. Analysis

In the following section, both projects concerned - NS1 and NS2 will be examined from different angles. In line with the research question, the thesis will present different aspects of these projects and subsequently, a comparison will be offered. Theory of neorealism will be predominantly used throughout individual chapters, while the theory of liberal interdependence will have its own section at the end of the analysis.

But firstly, it is necessary to set an image of Russia-EU relations contributing to energy security, not only concerning NS projects. As mentioned in chapter 4.3, there have been many occasions where Russia has proven to be not an ideal business partner for the EU when it comes to field as important as energy. One of the main goals of the EU is to decrease its dependence on Russia by decreasing their share of gas imports. From the first glance, through increased possible gas imports from the Caspian Basin and more available LNG, the EU could easily increase its energy security. That is why the construction of NS1 and NS2 raises questions and casts a shadow on these goals. In general, supporters of these projects argue that they are economically beneficial, and they ensure safe and cheap gas transit while denying any political dimension. The opposition is concerned about the possible political impact of increased Russian leverage on the European countries, while also doubting the very economical justification of these projects.

Despite the efforts of the EU to ensure the liberalised common market internally by implementing different energy policies, the external dimension shows clear signs of rivalry between states. The right of choosing its energy partners, as stated in the Lisbon Treaty creates an environment of fierce competition, where the ultimate goal of every state is to ensure maximal energy security. Rivalry, being one of the basic principles of realism, is strongly demonstrated on both NS projects. The sole fact that Germany chosen to pursue its national interest by agreeing with Russia on these projects shows nothing else than a desire to increase its own energy security, instead of choosing to follow the vague principles of solidarity and cooperation, as presented by the EU.

5.1 Contribution to energy security

Both NS1 and NS2, when announced, were considered quite controversial projects, sparking support from one side and opposition from the other. Despite the undeniable opportunity of cheap gas transit, some claimed them to be a threat to the energy security of the EU. The

following lines will be mostly considering the technical aspect of energy security, while further in the analysis an emphasis will be put on possible political implications.

5.1.1 Nord Stream 1

Moving on to the particular project, immediately after the announcement of NS1 a voice of opposition emerged, and while Sweden and Finland initially objected only due to specific choice of route in regard to environmental issues, Poland and Lithuania strongly objected due to the nature of the project. On the other hand, Germany and Russia strongly supported the project, highlighting its economic potential. This nature of the project will be examined in the upcoming part.

The first and foremost reason to build the pipeline, as argued by Nord Stream AG was increased demand on imported natural gas in combination with declined in the EU's production capacity and reserves. In 2008 Gazprom predicted that the EU's demand for imported gas will reach 536bcm in 2015, while in reality, it turned out to be approximately 300bcm (Lilkov & Freudenstein, 2018). Despite these figures to be vastly overestimated, the increased demand for the imported gas in the EU was a reality (*see 4.3.1*) and therefore a project of such scale was essentially needed for the EU to ensure its energy security. To further examine this claim a following set of data is provided. First, a list of import pipelines to the EU that were operational in 2006, alongside their maximum capacity is shown in *figure 6*. 2006 was selected particularly because that is when the EU officially recognized NS1 as a project of European interest.

Maximum pipeline import potential to the EU in 2006			
Pipeline	Country of origin	Destination	Maximum Capacity (bcm)
Greenstream	Libya	Italy	8
Enrico Mattei/Transmed	Algeria	Italy	24
Pedro Duran Farell/Maghreb-Europe	Algeria	Spain	8.5
Europipe I	Norway	Germany	13-16
Europipe II	Norway	Germany	22
Norpipe Gas	Norway	Germany	13-16
Zeepipe	Norway	Belgium	13-15
Franpipe	Norway	France	16

Langeled	Norway	England	20
Vasterled	Norway	Scotland	12-13
Frigg	Norway	Scotland	13
Tampen Link	Norway	UK(offshore)	9
Pipeline maximum import without Russia			158.5 – 167.5
Yamal Europe I	Russia	Germany	33
Finland Connector	Russia	Finland	20
Brotherhood/Union	Russia	Central Europe	130
Trans-Balkan	Russia	Turkey (passing through and supplying Balkan countries)	20
Pipeline maximum import from Russia			203

Figure 6: sources (Nies, 2011), (Gazprom, 2020); figure created by: author

From the figure we can read that the maximum import capacity in 2006 was larger from Russian pipelines, however, it is important to note that Brotherhood and Trans-Balkan pipeline were both built in 1967 as a part of former Soviet Union pipeline grid (Nies, 2011, p. 157). Therefore, the figure of 203bcm could not be applicable in reality due to poor technical conditions of some parts of this pipeline that do not allow it anymore to be used to its full potential. Another important point to mention is that the first Ukrainian gas crisis happened in January 2006 and therefore the relations between Russia and Ukraine deteriorated. Ukraine has been marked as a less reliable transit country and therefore Russia was seeking for an alternative. Combination of these two factors has caused that already in 2006, the volume of the gas passing through these pipelines has been far less than the full potential. This figure continued growing, while in 2018 only 50% of the maximum capacity has been used (Lilkov & Freudenstein, 2018, p. 8).

To determine whether was NS1 indeed necessary from the economical point of view, we must compare this maximum potential of the pipelines with the demand and actual import numbers that transpired in 2006 (figure7).

Comparison of EU demand and import numbers in 2006 (in bcm)		
Demand*	277.4	
Import	From outside Russia	From Russia
Pipeline Import (share of max potential)	135.04 (84%)	131.81 (65%)
LNG Import	51.7	-

Total Import	318.55 (114% oversupply)
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**Demand figure was calculated as subtraction of consumption (467.4) and domestic production (190)*

Figure 7; source: (BP, 2007); figure created by: author

We can see that contemporary gas infrastructure and import agreements were satisfying for the needs of the EU in 2006. This fact, however, did not mean that there was no need for further increase in import, as the forecast has shown increased demand and decreased production in the EU. It is also important to mention that a reasonable oversupply is the desired effect due to two factors. Firstly, natural gas can be stored and used during the peak seasons and secondly, the demand figure calculated by the author does not represent real import demand in that year, only an estimation based on simple subtraction of consumption and domestic production. Nevertheless, from these numbers, we can more interestingly derive that especially pipelines coming from Russia were not fully utilized but only to 65%. The number with gas pipelines coming from other countries than Russia is considerably higher, approximately 84%. Therefore, while there were significant reserves in the usage of Russian pipelines, it does not apply to the other pipelines.

The resulting implementation for the case of NS1 is therefore following. Provided that the demand was forecasted to be increasing while production decreasing, if we are talking about high volumes, such as 55bcm provided by NS1, the EU had no other supplier that would meet such demands except Russia. Also, the already existing infrastructure pointed to the fact that only the Russian one can support this volume. The fact that Russia has chosen to build a new pipeline instead of maximizing the utility of the already existing ones, that would be able to cover such volumes points to the unwillingness of Russians to invest into the reconstruction of old pipelines, but mainly ambition to eliminate potential threats on the Ukrainian transit route. If Russia would decide to add those 55bcm to the already existing pipeline it would push the share of the maximum potential of Russian pipelines to 92%. Such a high number, apart from the fact that it would not be achievable due to the technical status, would not provide enough flexibility when modifying agreements with the import states.

This behaviour is in line with the realists perspective from both main actors involved, Germany and Russia. With a new pipeline connecting them directly, they both increased their energy security by leaving out the unreliable transit country (Ukraine). The pipeline itself is much more reliable from a technical perspective, with much less maintenance and possible technical disruptions compared to the Brotherhood pipeline. Russia also secured a more stable

position when negotiating future gas agreements or modifying the existing ones. Moreover, by leaving out the transit countries, the gas coming to Germany is free of all cost burden connected to transit fees and therefore cheaper. Following the provided definition of energy security, the economical perspective is one of the aspects as “*these resources are imported... while following ordinary market and price forming mechanisms*”. Competition can be considered as a basic market mechanism, and therefore if the cheaper and more reliable gas resource is available, the decision-making ought to be easy.

The arguments of the opposition that NS1 will undermine the energy security of the EU and some of its member states cannot be confirmed by any empirical evidence. Its construction got completed on time and within budget in 2011-2012, with several acknowledgements given to it for its high environmental standards and green logistics. Since then, there were no disruptions on gas supply through the Ukrainian route, nor any cut-offs due to political tensions between Moscow and Kiev. The volume of gas transported through Ukraine slightly decreased, however, this can be hardly credited to some hidden political agenda, but normal market mechanisms. Poland concerns about decrease of transit through Yamal pipeline were exaggerated, with Yamal actually transporting more natural gas to Germany (+5,4bcm) since the commission of NS1 (Tsafos, 2019). Also, no significant changes in the price of gas occurred, as predicted by the opposition. The only clear change outside of Germany caused by NS1 is how the Czech Republic receives its gas, while it used to import it through Ukraine and Slovakia in the past, now it imports it through Germany and NS1.

Despite the fierce opposition from countries like Poland that the project undermines EU solidarity values and decreases its energy security, even from the perspective of the EU ambitions and EU's energy security the project makes sense. Firstly, the ambition of the EU to build a pipeline through the Baltic Sea has existed since the early 2000s. Secondly, even though NS1 does not diversify the supplier of the natural gas, it diversifies the supply route. The new route is much more potent from the technical perspective and leaves out threats of potential interruptions due to the abstention of transit states.

To sum it up, NS1 is undoubtedly increasing energy security of Germany and, despite the opposition claiming otherwise, it is also beneficial for the energy security of the whole EU, despite its ambition to diversify and lower the dependence on Russia not fulfilled. The fact that Russia could hardly supply additional 55bcm provided by NS1 through already existing supply route and wanted to change unreliable transit partner Ukraine and therefore chose to build a new pipeline points to the economic rationale behind. Possible political implications are going to be examined in the next chapter of the analysis.

5.1.2 Nord Stream 2

The idea behind the construction of NS2 developed already in 2011, even before both lines of NS1 were fully constructed and operational. According to Gazprom: *“The decision to build Nord Stream 2 was based on the successful experience in building and operating the Nord Stream gas pipeline”* (Gazprom, 2020). It was met with immediate opposition, and while the fiercest opponents remained the same as with NS1, more countries had joined the opposition or started to question the commercial nature of this project, while also marking it a considerable threat to the energy security of the EU. In the following section, NS2 will be analysed in terms of energy security, and later comparison with its predecessor will be offered.

The main driving rationale behind the project, according to Russia and Germany, is the economic profitability, the same as with NS1. According to Gazprom, NS2 fills the gap of “rapid decline in the EU’s domestic gas production” by “transporting natural gas into the European Union to enhance the security of supply, support climate goals, and strengthen the internal energy market” (GAZPROM, 2020). Its possible contribution to energy security can be determined with the same approach as with NS1. Later, a forecast from the IEA can be used to determine the viability of the project in the long term.

Figure 8 demonstrates new pipelines used by the EU to import gas, provided they were operational in 2016. The year has been chosen based on the fact that the first official documents of the project has been submitted in 2016. It is important to keep in mind that the already before existing pipelines (see Figure 6) were still operational during that time, and only new pipelines are shown.

Maximum new pipeline import potential to the EU in 2016			
Pipeline	Country of origin	Destination	n
Medgaz	Algeria	Spain	8
Turkey-Greece Interconnector	Turkey	Greece	11
Pipeline maximum import without Russia in total			177.5 – 186.5
Nord Stream 1	Russia	Germany	55
Pipeline maximum import from Russia in total			258

Figure 8; source: (MEDGAZ, n.d.) (Nies, 2011), (Rzayeva, 2019); figure created by: author

From the figure, we can see that new pipeline projects that were constructed in the period between 2006-2016 were considerably smaller than NS1. This confirms the statement in the previous chapter that NS1 increased energy security by providing a reliable source of bigger volume during the period in which the demand for imported gas increased. When it comes to the already existing pipelines infrastructure passing through Ukraine, their technical conditions did not improve enough through reconstruction efforts to meet the overall decline due to their accrescent age, despite loans given by European Investment Bank and European Bank for Reconstruction and Development (KPMG, 2017). Moreover, the second Ukrainian Gas crisis happened in 2009, which further damaged Ukraine reliability as a transit state and Russian reliability as the energy supplier. In 2014 Russian invasion of Crimea demolished any leftovers of a friendly relationship between these two countries.

The validity of the argument that NS2 is a purely commercial project can be determined by comparing those numbers with the import that transpired that year, as shown in *figure 9*.

Comparison of EU demand and import numbers in 2016 (in bcm)		
Demand*	310.6	
Import	From outside Russia	From Russia
Pipeline Import (share of max potential)	171.2 (94%)	142.9 (55%)
LNG Import	56.4	Less than 0.05
Total Import	370.5 (119% oversupply)	

**Demand figure was calculated as subtraction of consumption (428.8) and domestic production (118.2)*

Figure 9; Source: (BP, 2017); figure created by: author

The figure shows that pipelines coming from other sources than Russia has been used to 94% of their maximum potential. On one hand, it confirms the ambition of the EU to diversify from Russia by importing more gas from other countries and using the constructed infrastructure to its almost maximum. On the other hand, it does not leave much space for a potential increase of import through these pipelines, and therefore it manifests a necessity for new pipeline projects from a country other than Russia or an increased LNG imports. There have been several planned projects, all aiming to diversify the resources, but most of them are inactive due to

unsure profitability, problems with financing, or others e.g. Mid-Nordic Gas Pipeline, Nabucco, White Stream.

The most important observation we can derive from the figure is that Russian pipelines were only operating on 55% of their maximum potential. Considering that approximately 115bcm of natural gas could flow through already existing pipeline gives doubts about the necessity of NS2. One needs to take into account the limitations when it comes to the technical conditions of the Ukrainian transit system, as already mentioned. Nevertheless, another 55bcm could fit into already existing infrastructure without a need for overall reconstruction of the majority of existing pipelines, while still leaving a considerable reserve to work with while making agreements. According to the World Bank, the costs required for reconstructing Ukrainian transit infrastructure to the level it would be able to transport 55bcm of natural gas would be much lower than 9,5 billion dollars, as is the estimated cost of NS2 (Lilkov & Freudenstein, 2018, p. 12). Russian authorities deny this claim, saying that it would cost much more, while also arguing that given the fact that the NS2 is shorter and much more efficient given its inner pipeline coating that lowers friction and by that decreases necessary compression for transmission, making NS2 much cheaper alternative (Barnes A. , 2017). It is difficult to determine which side is telling the truth in this regard, but given the numbers discussed, the possibilities of using already existing infrastructure seem feasible enough for doubts connected to NS2 to be considered as purely commercially motivated.

When it comes to forecasts on import demand, as already mentioned, Gazprom predicted a rapid increase of demand for imported natural gas while proposing NS1 with a figure that has proven to be vastly exaggerated. As demonstrated in *figure 10* according to the newest forecast of the IEA, the demand for the imported amount of gas in the EU is going to be increasing in the short term, peaking around 2025 and then slowly decreasing, mainly due to policies reducing fossil fuels usage.

EU predicted production and demand 2018-2040*(in bcm)					
	2018	2025	2030	2035	2040
Production	120	66	47	44	40
Demand	480	477	442	416	386
Import Demand**	360	411	395	372	346

* Stated Policy Scenario

** Import Demand calculated as subtraction of Demand and Production

Figure 10; Source: (IEA, 2019); figure created by: author

While the argument of Gazprom that amount of imported gas will be increasing is technically correct, the timing of peak being 2025 raises the question of whether NS2 is as necessary as its proponents argue. NS2 was supposed to be operational by the end of 2019, now due to complications is scheduled for the end of 2020. From this point of view, it seems too big and expensive project, given only a few years in which it will serve the fundamental reason behind its construction. Number comparison from *figure 8,9,10* can be used to support these doubts. The maximum potential capacity of import pipelines in 2016 was approximately 440bcm, adding to this equation LNG import that covered 56,4bcm (in 2016) and is predicted to rise in the coming years, the result is that current European pipeline infrastructure is enough to cover import needs, according to the prediction of IEA. This argument remains true even in the speculative scenario, in which we would calculate the usage of the Ukrainian transit system to be used to 50% (75bcm), a reasonable growth of LNG to 60bcm, then in the year 2025 combined max capacity of the existing pipeline and LNG import would be 425bcm, which is 14 more than the demand figure from IEA data. These findings are supported also by claims of former energy commissioner Maroš Šefčovič, who argued that provided all the projects for pipelines and LNG planned for the next 10 years are carried out, the EU will have the capacity to cover imports of twice the size of its needs (Lilkov & Freudenstein, 2018, p. 9).

Nevertheless, the same argument could be used as with NS1 that for Russia and Germany, following the realist perspective is most desirable to choose a direct gas pipeline, without a need for unreliable transit country. All the advantages with the NS1 will be applied of NS2 as well, more concretely reliable gas import directly from Russia, what decreases the risk of interruption because of bad technical condition or political issues between Russia and transit countries. Taking into account the cassation of gas extraction activity in the Netherlands, which is the third-largest exporter to Germany, the share of Russian gas on the German market will rise considerably, which is the only concern regarding energy security of Germany. However, based on a good relationship with Russia and flawless operation of NS1 from both German and Russian side it seems that it is not that much of a concern. Moreover, according to OECD ranking called risk classification of countries of origin and transit countries regarding the European gas supply from 2016, Russia scored 4, which means medium risk, while both Ukraine and Belarus that serve as transit countries to Germany scored 7, which means high risk (OECD, 2016). Furthermore, taking into account that natural gas consumption in Germany in 2018 reached 88,3bcm (BP, 2019), therefore a total capacity of NS1 and NS2 of 110bcm, in combination with still considerable import from Norway will effectively make Germany a gas

hub. This position will allow Germany to control the further redistribution of gas to other parts of the EU, which can be beneficial for the economy.

When it comes to the role of the EU in the project, contrary to its predecessor, NS2 did not receive any endorsement or support from the EU, but rather strong opposition emerged within the ranks of EU institutions. On October 2016 EP adopted a resolution on the EU strategy for LNG, in which is NS2 specifically described as a project of concern with “counterproductive effects... on energy security and diversification of supply sources”. Furthermore, its construction would “give one company a dominant position on the European gas market, which should be avoided” (European Parliament, 2016).

Potential endorsement from the EU may ease up the execution of the project, its condemnation and opposition may slow it down. While in the case of NS2 the opposition of the EU is clear, it seems that there has not been enough strength to stop the project altogether. Even in that same EP paper, they admitted “Considers that if, contrary to European interests, Nord Stream 2 were to be built it would necessarily require a sound assessment of LNG terminals’ accessibility” (European Parliament, 2016). On one hand, this is in line of energy security “always seek possibilities of further diversification” and “prepared an emergency plan if such a scenario (threat to energy security) would develop”. On the other hand, it points to the inability of the EU to truly defend its stance and stop the project, even when it comes to areas as important as energy security. This weakness of international organization is in line with the theory of realism, that elevates the national interest of sovereign states above international organizations.

To sum it up, NS2 presents a hard case to determine its contribution to energy security. From the perspective of the EU, taking into account the statistical numbers presented in this analysis, we can conclude that the fundamental rationale behind the NS2 to cover increased demand is untrue. EU does not need it, as there is sufficient gas infrastructure already existing, which can cover even the demand during the forecasted peak of natural gas demand. However, the fact that NS2 seems like an unnecessary project does not mean that it decreases the energy security of the EU. Given new projects in planning and increase of LNG usage in the short term, these present competition on the market for NS2. This combined with further ambition of the EU to decrease the usage of natural gas within the next 20 years, depict NS2 as rather stranded asset project. Since the fundamental rationale behind the project was undermined in this part of the analysis, a possibility of the political rationale behind the project increased and will be further analysed in the next chapter.

From the perspective of Germany, the project is arguably in line with its national interest. Germany decided to firmly stand and defend the project against its opposition, mostly due to economic benefits it will bring, namely more cheap and reliable gas and a possibility of becoming a gas trade hub in the EU. However, after the completion of NS2 and complete cessation of import from the Netherlands, Germany will get more dependent on Russian gas. Even though Russia is according to OECD and seemingly in the eyes of Germans more reliable than Ukraine or Belarus, this project can potentially cause problems in the future. Therefore, according to our definition of energy security, NS2 presents itself with both advantages and threats to the energy security of Germany.

When comparing NS1 and NS2 from the perspective on energy security, there are clear resemblances but also distinctions. To put it shortly, NS1 is according to this analysis an asset to both German and EU's energy security. Even though that the ambition of the EU to diversify its suppliers of natural gas was not fulfilled, NS1 presents a diversification of supply routes, to a more reliable one, which can be described as beneficial for the energy security. NS2 in that regard cannot be considered within the scope of diversification of supplier nor supply routes. Moreover, the rationale behind the construction of both projects was officially to meet increased import demand. While in this analysis it was confirmed that NS1 was a reasonable project at its time and indeed contributed to coping with such increased import demand over the years, the NS2 seems in comparison as not needed project that can easily become a stranded asset. Most importantly, given the fact that NS1 was justified rightly and, as up to date course of events show, its operation has not brought "existential threats" to the energy and national security of any member states, as was argued by its opposition. NS2, on the other hand, has not been justified rightly according to this analysis, and therefore further examination concerning its possible political rationale is needed.

5.2 Political dimension of Nord Stream projects

In this section of the analysis, a possible political dimension of projects of Nord Stream 1 and 2 will be examined. Both of these projects have been accused of following political rationale, rather than the economic one. Many members states have argued that these projects will increase Russian leverage over countries of Central Europe, Baltic states but mostly over Ukraine. According to the opposition, after the construction of the projects, Russia will be able to use that leverage to influence strategic decision-making in those countries, and not only the ones related to the natural gas. From a historical perspective, Russia has been well-known for

using natural gas as a political tool. According to a Swedish Defence Research Agency report from 2006, more than half of 55 occasions when Russia cut off the gas supply between 1995 and 2006 were politically motivated (Larsson, 2006). In the following section, both projects will be examined, however as concluded in the previous chapter, the analysis has proven that NS1 economic rationale has been confirmed, and therefore more attention will be given to NS2 in this chapter.

Before diving into individual projects, one thing has to be clear. 100% of the gas flowing through the NS1 and NS2 is coming from Gazprom. While technically Gazprom is a private company, its majority shares belong to Russia. Therefore, there is no doubt that the company will be following national interest, rather than the economic one, if the situation requires it. That is why an argument that Gazprom and natural gas trade can be used for political leverage is possible only from looking at the ownership of the company. When asked about Gazprom and possible liberalization of Russian gas market, Vladimir Putin responded “*We intend to retain state control over the gas transport system and over Gazprom. We will not split Gazprom up. And the European Commission should not have any illusions. In the gas sector they will have to deal with the state*” (Lilkov & Freudenstein, 2018, p. 3).

5.2.1 Nord Stream 1

After the start of NS1, several countries had shown objections due to different reasons, but mainly Poland and Baltic states were pointing to the increase of Russian influence in the region and possible abuse of this influence in political matters. The disunity of member states of the EU on this matter was visible from the beginning. Radek Sikorski, Polish Minister of Defence compared the nature of the project to the infamously known Molotov-Ribbentrop pact from WW2. Poland was right from the beginning the fiercest opponent of the project, with Polish press stating that NS1 is “*dangerous for energy security*” implying that the country will “*remain at Kremlin’s mercy*” (BBC, 2005).

The arguments of the opposition that NS1 will be used for political leverage cannot be confirmed by any empirical evidence, as the previous part of the analysis stated. Andris Piebalgs, a co-temporary EU’s energy commissioner denoted them as exaggerated already in the planning phase, stating that “*You can blackmail somebody who wants to be blackmailed. I don't see the situation this way. What I clearly see is that Gazprom decided that most of their exports would go to European consumers. They don't like to supply gas through countries. They like to go immediately to the consumer. Well, it's up to them to decide*” (Hotten, 2008).

This argument and overall attitude of the EU is further supported by the fact that a need for a pipeline passing through the Baltic Sea was recognized by the EU already in 2000 and incorporated into the TEN-E guidelines. In 2006 the EU reconfirmed its position by recognizing NS1 as a “Project of European Interest”, therefore effectively making NS1 an element of its energy security. Such an endorsement helped NS1 to minimize the impact of its opponents and had led to a smooth construction process.

From a theoretical standpoint, as already mentioned, the behaviour of Russia and Germany to agree on the construction of the pipeline, without the consent of other member states points to realism. The selfishness of states to pursue national interests is stronger than vague concepts of morality and solidarity as proposed by the EU. Even though the project was officially endorsed by the EU, the way it was agreed was against its principles and ambitions to create an inner energy market based on unselfish cooperation. Aaron Belkin, a well-known political scientist supports this claim, arguing that there when it comes to necessities of energy security, there is a difference not only between the MS and EC but also between the MS themselves. Therefore, as he claims, the existence of NS1 demonstrates that states tend to pursue their own national interest connected to energy security, not taking into account proclaimed unity and solidarity within the EU (Černoch, 2008, p. 79).

5.2.2 A shift in geopolitical setting

Before we continue to NS2 project, there is an important part connected to the political leverage to gain by Russia from these projects, and a threat of its potential usage. To put in other words, there is a significantly different picture of Russia in the eyes of the EU in 2006 when the NS1 official documents were submitted and 2016 when the same happened for NS2. As already mentioned in chapter 4.3, the status of Russia as a reliable partner when it comes to the energy received several blows.

2009 marks a year with two serious events taking place that have increased the reason for concerns. Firstly, second Ukrainian gas crisis showed to the public that Russia, through its company Gazprom, is not afraid to completely cut off country out of gas during the peak of the season, and by doing that indirectly cutting the gas supply for states of Central Europe. The timing of both Ukrainian gas crises can be considered suspicious as both of them happened during the time of Viktor Yushchenko presidency and Yulia Tymoshenko being the prime minister, with both of these politicians known to be pro-European, trying to disentangle Ukraine from the Russian sphere of influence. Therefore, the possibility of usage of natural gas has as a

tool for demonstrating the disaffection with the co-temporary direction of Ukraine from the side of Russia has been demonstrated. Secondly, in that year Russia terminated the provisional application of the Energy Charter Treaty (Mironova, 2014), demonstrating its unwillingness to follow the rules of the EU in the energy trade in general and natural gas trade in particular.

The final blow to the reputation of Russia has been the annexation of Crimea, and continuing support for the pro-Russian militia in the Donbas region of Ukraine. EU, subsequently imposed sanctions on Russia, which should theoretically prevent any project of scale as NS2 from happening. Former Italian prime minister Matteo Renzi commented it: *“We are strong on sanctions, but on the other hand a number of countries , or companies, are able to double Nord Stream”* (RT, 2015).

All these events have contributed to the decreased reputation of Russia as an energy partner to the EU. Cañete summed it up saying: *“We have also learnt our lessons from the gas crisis of 2009 and 2014 when disputes between Russia and Ukraine flared up. The Commission, in response, took a proactive role not only to mediate between our two neighbours but also to come forward with a European energy security strategy”* (Cañete M. A., 2015)

5.2.3 Nord Stream 2

Political opposition towards NS2 was based on the same principles as NS1. As NS2 doubles the capacity of NS1, it also doubles the concerns of many states about the possibilities of political usage of the pipeline. EU officials have concluded that the biggest political implication could fall on Ukraine. As described in the previous chapter geopolitical environment of Europe has changed and the shift has caused closer cooperation of Ukraine, and the security concerns of its well-being increased on importance within the EU discourse. Maroš Šefčovič in regard to NS 2 expressed concerns about this deepening dependence on Russia and a threat that it possesses to Ukraine, stating that: *“Ukraine are our friends, Russia is not”* (Beckman, 2017). The whole concept of *“Russia is not our friend”* seems to be the shared basic point in the arguments of the opposition.

The main argument of the opposition is that NS2 will increase the dominant position of Gazprom in Central and Eastern Europe, which can result in the increased political influence of Russia in the MS that are dependent on import from there. Gazprom will have the power to manipulate the prices and use this as a threat in political bargaining with states in return for some commitments. Also, it will provide it with an opportunity to forfeit existing agreements

and stop using some of these countries as transit states. These concerns are illustrated in *figure 11*.

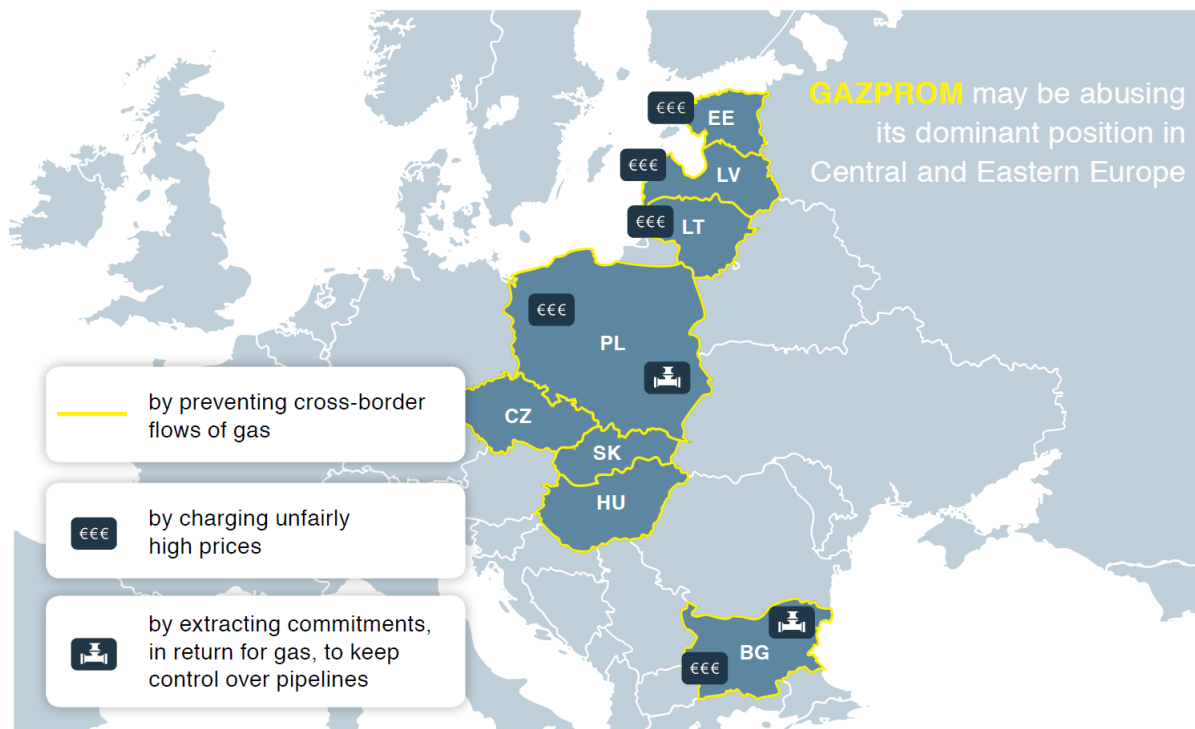


Figure 11; Potential threats of Gazprom dominance after NS2; source: (Lilkov & Freudenstein, 2018, p. 11)

Apart from the increased power of Gazprom, another fundamental argument of the opposition is that if NS1 and NS2 will be used to full capacity, shifting 110bcm to one supply route would cause substantial losses in current transit countries, like Slovakia, Poland and Ukraine. If Russia would decide to stop using the Ukrainian transit system altogether, Ukraine would lose \$2 billion in transit fees (RT, 2015). Although this looks like only an economic implication, as Zachman argues, this would also give Russia opportunity to apply different prices between Western and Eastern part of the EU, but most importantly, in a case of political struggle, an ability to cut the flow of gas altogether, without the Western part feeling it (Zachmann, 2016). This can be easily applied in a possible further escalation of conflict with Ukraine. If Russia would decide to stop supplying gas through it, it would not only cause an economic blow, Ukraine would have problems to receive gas from other routes and therefore it would be left at Kremlin's mercy. The role of NS1 and NS2 in it is that the Western part of the EU would not be so concerned about it, as their supply of gas would be unchanged if such a scenario would occur.

When it comes to theory, the same principle that applied to NS1 is valid for NS2. Both main actors, continued to behave selfishly, looking only at the gains that the project can bring. This selfishness is augmented by the fact that the opposition expressed their concerns during NS1 and when planning NS2, both actors knew very well that it is going to initiate the same if not worse response. So, in this time, we can argue that Germany knowingly undermined the values of the EU, knew the consequences, and yet decided to go for the project. As Lilkov and Freudenstein argue “NS2 could be seen, in essence, as a defiant move by Germany to pursue its own self-interest, showing disregard for the concerns of its European partners and, in effect, going against EU energy priorities” (Lilkov & Freudenstein, 2018, p. 14).

5.2.4 Scale of the opposition

One of the most visible differences between NS1 and NS2 is the scale of its opposition. Protests against NS1 were most clearly seen in Poland and Baltic states. Given the experience with NS1, opposition towards its successor was expected. Poland and Baltic states did not change their position and once again started with the objections right away. However, this time they were joined by more member states and also encouraged by the EU itself, more concretely European Council and its president Donald Tusk (EURACTIV, 2015). In 2016 eight member states of EU – Poland, Slovakia, Czech Republic, Hungary, Romania, Estonia, Latvia and Lithuania submitted a jointly written letter to the EC president Jean-Claude Juncker, in which they express concerns about NS2 and its “destabilising geopolitical consequences” (Sziklai, Kóczy, & Cserecsik, 2018). In the same year, EP adopted a resolution in which it describes NS2 as harmful to energy security, EU energy ambitions and solidarity (European Parliament, 2016).

The changing behaviour of the states between NS1 and NS2 in terms of increased opposition align with neorealism, more concretely about Kenneth Waltz’s argument that external pressure creates internal unity. Every one of the states in such a group may have completely different selfish national interests, but increased concern about their own national interests, connected to NS2, have forced them to unify, to increase their relative power. The group of states that signed the letter have few things in common, and go beyond regional groups of cooperation, like V4 countries.

Last, but not the least, NS2 drew an increased amount of attention from the side of the US. This time the US decided to actively oppose the project by imposing sanctions on the project, which in result forced European companies participating in the construction to suspend their activities (CRS, 2020).

5.2.5 A threat to transit states and Ukraine

In the part 5.1.1, it was concluded that the arguments opposing NS1 were proved to be exaggerated as no “horrific” of predicted scenarios happened in reality. Therefore, this part will focus solely on NS2 and its potential on transit states of Central Europe and also Ukraine.

As already mentioned, one of the biggest concerns of the opposition towards NS2 was a threat that with full capacity usage, Russia will completely abandon the usage of Ukrainian transmit system, economically harming mostly Ukraine but also other transit states of the EU like Slovakia, by ceasing its transit revenues. Loss of \$2 billion presents for Ukraine loss of more than 2% of its GDP (Lilkov & Freudenstein, 2018). Moreover, additional losses would follow as Ukraine would be forced to pay much more for its natural gas demand, importing it from the west. Regarding NS2, Yuriy Vitrenko a senior partner in Naftogaz¹ argued: “We consider Nord Stream 2 a politically motivated project, intending to bring higher prices of natural gas and lower transit prices...which would result into fatal consequences for Ukraine” (Ružinská, 2016).

Solidarity with Ukraine has been on agenda of the EU for the last years, and especially after the events of 2014. Leaders of the EU states on several occasions confirmed the support of Ukraine, its sovereignty and the continuation of sanctions towards Russia. Concerning NS2 Merkel herself confirmed that there is a willingness to maintain Ukraine status as a transit country (RT, 2015). The behaviour of EU states to Ukraine can be explained through the lenses of neorealism. Ukraine has served and still is serving as a “buffer zone” between member states of the EU and Russia. Russia being the raising hegemon combined with weakened Ukraine evoke fears within the EU. Therefore, the determined EU supportive stance towards Ukraine can be seen as an ambition to maintain the balance of power. Unstable Ukraine would have implications on the stability of the EU and therefore it is highly unwanted from the perspective of the EU.

Contrary to claims of the opposition Gazprom has been cooperative with the EU institutions, trying to address the biggest concerns that accompany NS2. EC in its dealings with Gazprom concluded that Gazprom’s objective is not to “hurt” anybody by constructing NS2, by contrary Gazprom proposed set of measures to remedy those concerns, as illustrated in *figure 12*. EC Commissioner in charge of competition policy, Margrethe Vestager, stated: *"We believe that Gazprom's commitments will enable the free flow of gas in Central and Eastern Europe at*

¹ National oil and gas company of Ukraine

competitive prices. They address our competition concerns and provide a forward looking solution in line with EU rules. In fact, they help to better integrate gas markets in the region” (EC, 2017).

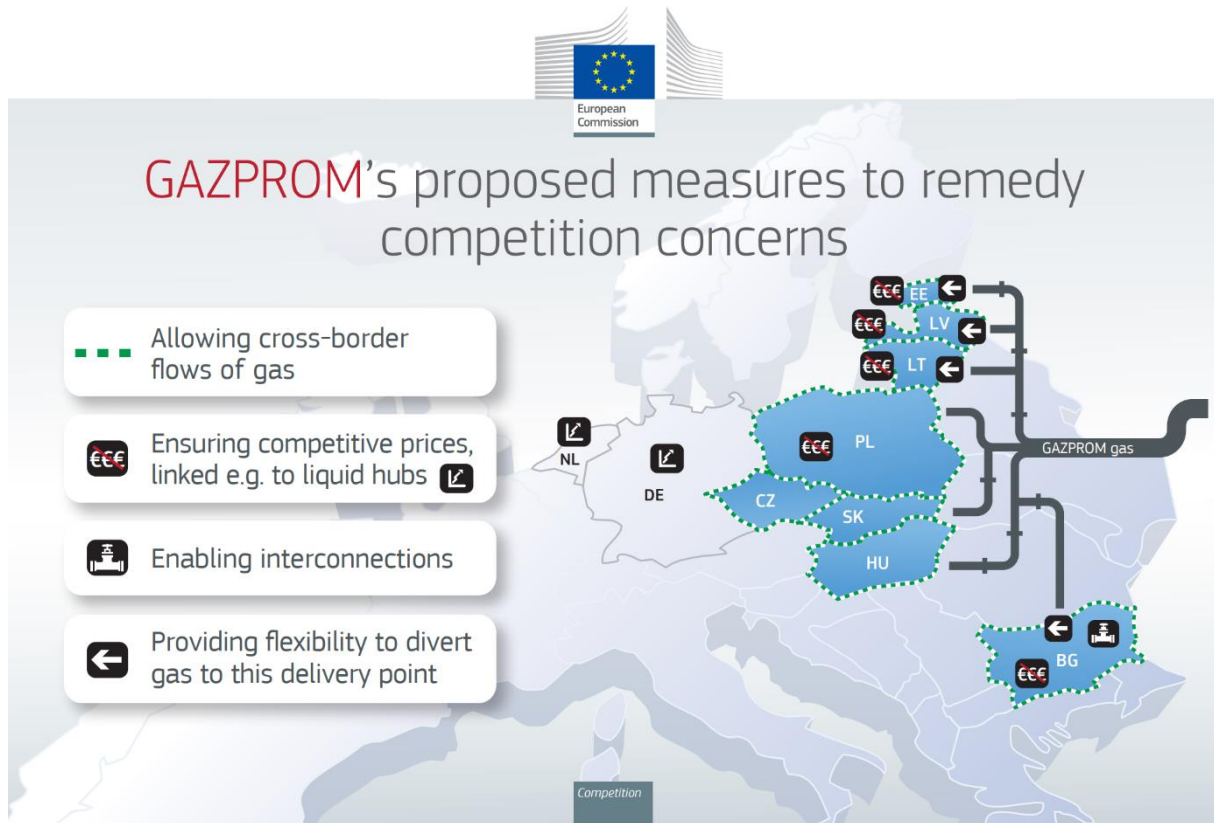


Figure 12; source: (EC, 2017)

Concerns about Ukraine were also addressed, this time on a political level. On December 9, 2019 “Normandy Four”² meeting happened, which the main agenda was the ongoing conflict in Eastern Ukraine, however, progress regarding NS2 was achieved as well. The final form of gas agreement was signed on 30 December 2019 in which Gazprom committed itself to continue using Ukrainian transit system until 2024, with at least 65bcm transmitted in 2020 and 40bcm in 2021-2024 (Oxford Energy, 2020). This agreement happened contrary to the expectations of the opposition to NS2 and can be considered a significant achievement, first one of its kind since the start of the conflict in 2014. A lot of credits can be assigned to diplomatic dialogue and Germany/French moderation of the talks.

² Russia, Ukraine, Germany, France

To sum it up claims of the opposition about a threat to transit countries of the EU and Ukraine have proven to be untrue in the case of NS1 and even bigger claims in the case of NS2 are slowly being disconfirmed by the actions of actors involved.

5.2.6 Summary

In conclusion, this chapter examined the political dimension of the projects. As mentioned at the beginning the NS1 project has been economically justified in the previous chapter and therefore political rationale behind it seemed improbable. On top of that, the arguments against the NS1 have proven to be exaggerated by time. NS2 is currently reliving the opposition its predecessor faced but vastly increased in scope. Despite all the intentions of Gazprom and Russia to reduce the reasons for the opposition the project is still labelled by many as dangerous and threatening to the interests of the EU and its member states. In this section, it has been proven that measures to remedy these concerns exist and Russia is showing intention to appease with the opposition. The biggest argument against NS2 regarding cutting off Ukraine was disconfirmed by the new gas deal. The long-term effects and some hidden agenda of Russia cannot be predicted or revealed due to the nature of this thesis, which bases the arguments on empirical evidence. Time will reveal if these concerns regarding NS2 were legitimate, but the experience from NS1 shows that more rational conversation about NS2 might be more appropriate.

Therefore, the biggest difference we can draw between NS1 and NS2 is not within the projects themselves but the reputation of Russia in the eyes of the EU and its member states. Series of events that transpired between the announcements of these projects which severely damaged the standing of Russia. Distrust towards it has provoked that arguably anything would be considered as carrying some hidden agenda. The analysis has shown that “Russia is not our friend” attitude is the main reason behind the opposition of NS2 and the scope of this opposition.

5.3 Legal aspects of Nord Stream 1 and 2

In 2017 Robert Cyglicki, director of Greenpeace Poland labelled Nord Stream 2 “useless and illegal” (ClientEarth, 2017). The amount of such-alike comments is increasing, especially from the countries opposing the project. Taking a break from the geopolitical questions and considerations, this chapter is going to look at what kind of law applies to NS1 and NS2 and whether are these projects in line with it.

Nord Stream 1 presented, at the time of its creation a unique transboundary submarine pipeline project. It was not governed by any agreement between the states concerned, including sending and receiving states (Russia and Germany), thus there was no specific regulation that would serve for the operation of the pipeline or settlement of disputes. Therefore, it relied on relevant multilateral agreements and general international law (Langlet, 2014, p. 90). Despite many controversies around the project, it has been included in the EU list of TEN-E and labelled a “Project of European interest” (*see 4.4*). Step by step, the project received consents from all states involved (Russia, Finland, Sweden, Denmark, Germany), while initial applications were mostly objected only in environmental aspects that were modified. Even though the role of the EU was a minor one, the endorsement of the project and no international legal action taken by any state gave way to smooth procedure while receiving permits (Langlet, 2014, pp. 88-95).

The only legal pullback in connection to NS1 was the case of OPAL³ connector. At first, a capacity reduction was imposed on it, limiting the volume of Russian gas flowing through it. However, in 2016 OPAL received an exemption from the EC allowing Gazprom to use its whole capacity. Poland and Lithuania later submitted an appeal to European General Court regarding this exemption, demanding apart from other, that OPAL must be regulated by the Third Energy Package (Schmidt-Felzmann, 2020, p. 130). On September 10, 2019, the court decided to annul the previous exemption given by the EC to the OPAL pipeline. This decision was appealed later by Germany and the whole case currently falls under the CJEU (Holmes, 2020).

In conclusion, Nord Stream 1 has been adopted relatively easy, with only minor obstacles, mostly related to environmental issues. The endorsement of the EU and subsequent minor played during most of the time of the implementation of the project has proven the biggest factor behind it.

Moving on to Nord Stream 2, the clearest difference is the date on which the project commenced. Its plans have been submitted after the Lisbon Treaty and Third Energy Package, the applicability of the EU law and particularly Third Gas Directive presents itself as the most logical option for it. As mentioned in chapters 4.2 and 4.3 the basic principles of this directive are third-party access and the unbundling requirement. President of the European Council Donald Tusk highlighted them in relation to NS 2, expressing the belief that all new energy

³ OPAL connector serves as one of two projected pipelines connecting Nord Stream 1 to existing pipeline network in the Germany and Europe

projects incorporated into the EU should be in line with the Third Gas Directive and comply with the aims of the Energy Union (EURACTIV, 2015).

In the case of the NS2, both of these principles are being ignored. Firstly, the third-party access would require an up-stream producing country, which is Russia to allow other companies to enter its gas market. However, this is directly contradicting Russian legislature that provides Gazprom with an exclusive monopoly on the export of the natural gas (Gragl, 2019, p. 123). Russia could, of course, lift such a law to comply with the EU law, but that seems highly unlikely. Secondly, the unbundling process also proves to be a problem, as Gazprom is in NS2 the sole owner and both the producer and operator of the transmission, which is a directly contrary to the Third Gas Directive. The incompliance with the unbundling and consequent pressure from the EC has previously led to the cancellation of the South Stream project, which was also purely owned by Gazprom.

One possibility of how to circumvent this would be for NS2 to apply for an exemption under Article 36 of the Directive, which in simple terms allows an exception for a limited period to encourage new investments. Nonetheless, this option seems also unlikely for three reasons, firstly Gazprom had in previous cases not filled any exemption request for NS1 nor South Stream, secondly, NS2 would be hard to fill in the scope of enhancing competition and security supply and thirdly by filling such an exemption Gazprom would accept the applicability of the EU law on NS2 (Gragl, 2019, p. 126).

Nevertheless, there remains a legal uncertainty about the application of the EU law on NS2. The issues arise especially around its offshore part and from its definition, which is labelled as import pipeline with a function to solo transport gas to the border of the internal energy market (Goldthau, 2016, p. 22). Given such definition, NS2 would not fall under the rules addressing transmission infrastructure or interconnectors of the Directive, and therefore its rules would not apply for NS2. The biggest support for this case was given by the EC and Council of the EU which both, in 2017, concluded that the offshore parts of the NS2 will not be subject to the Third Gas Directive (Gragl, 2019, p. 126).

Since this decision, there has been a discussion on what specific international legal regime could be applied. According to Gragl, the only legally applicable would be UNCLOS (Gragl, 2019) however, it did not need to take place, as on 8 November 2017 EC published a proposal for an amendment of the Gas Directive (Zafoschnig, 2019). The main aspect of the amendment is to address the vague definitions of the Third Gas Directive, namely definition on interconnector, which is going to extend to pipelines connecting the EU and third countries.

Following this definition, NS2 can be labelled as an interconnector and therefore Gas Directive applies to it on the border of the EU jurisdiction. Timing and the way the amendment is drafted raises the question whether it is not aimed concretely to prevent NS2 or at least make it more difficult to complete. Despite EC denying it, saying that this amendment will apply for all the projects not only NS2, it has been already dubbed by many as “Lex Nord Stream 2” (Zafoschnig, 2019, p. 155). Protests from the side of NS2 did not manage to change it and the amendment got adopted by the EP on 4 April 2019 (Council of the EU, 2019).

Applicability of the amendment, however, remains a question. Although with the amendment part of the NS2 located within the border of the EU jurisdiction will be subject to the Third Gas Directive, the part located on Russian territory will be subject to Russian law. Since the EU law cannot have an extraterritorial effect on Russia, two different regulatory frameworks can be applied to the pipeline, which is highly impractical, therefore EC proposes to resolve this conflict of laws with an intergovernmental agreement with Russia, based on primary EU law (Zafoschnig, 2019, p. 160). As a reaction to that NS2 submitted a demand to the CJEU to annul this directive. Furthermore, it submitted a complaint under the ECT, despite opposing it as a dispute settlement mechanism in the past. EC in response to that clarified that there is a possibility to grant a derogation for the project, and it is within the competence of German regulatory office – Federal Network Agency (Bundesnetzagentur). German lawmakers already in November 2019 increased the hope for the NS2, encouraging Bundesnetzagentur to take into consideration ‘the special circumstances of the individual case’ (Schmidt-Felzmann, 2020, p. 138). Final decision about the project must be made until the end of the May, while the scale is shifting in favour of NS2, with many experts saying that from their point of view “there is nothing in favour of regulation” (PTJ, 2020).

Speaking from a theoretical point of view, this whole process of legal uncertainty regarding the NS2 project points in favour of neorealism. The national interest of Russia and Germany are prevailing over the EU and its ambition to create internal market rules based on “solidarity”. Latest development points out that from numerous articles of the Third Gas Directive and other regulatory frameworks, there is one from the Lisbon Treaty that exceeds all the other: “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...” (Article 194, 2008). The legal case of NS2 is now resting with a Bundesnetzagentur, an agency of a state that is the direct benefactor of the project, and most probably will be granted a derogation from the EU laws. Looking back at a statement from a

German-Russian meeting in 2015, it seems as everything goes according to the plan. Vice-Chancellor and Minister of Economic Affairs and Energy of Germany Sigmar Gabriel stated back then *“What’s most important as far as legal issues are concerned is that we strive to ensure that all this remains under the competence of the German authorities, if possible. So if we can do this, then opportunities for external meddling will be limited”* and then at the end of the meeting repeating his statement *“What’s most important is for German agencies to maintain authority over settling these issues. And then, we will limit the possibility of political interference in this project”* (President of Russia, 2015).

To sum it up, when it comes to comparison of NS2 to NS1, it can be easily said that NS1 profited from the timing and circumstances that accompanied it. First of all, NS1 was approved before the Third Gas Directive started to be in effect, which allowed it to avoid regulations by the EU law. Secondly, NS1 benefited from the endorsement from the EU, by inclusion in the TEN-E list, in combination with lesser EU interest to interfere in the project, which safeguarded its rather smooth acceptance. NS2 has faced much more legal obstacles. Being implemented after the Third Gas Directive, it started a series of law discussions whether it is applicable, or how to possibly avoid it. This has brought a lot of attention to the project, which in combination with greater EU meddling led to the adoption of the amendment to the Third Gas Directive, aiming directly at forcing NS2 to be a subject to the EU law. Interestingly, both projects are still waiting for some final legal closures. On one side, NS1 indirectly influenced by its OPAL connector, waiting for a decision by the CJEU regarding German appeal. On the other, NS2 currently hoping for a possible derogation from the Third Gas Directive, in the hands of German Bundesnetzagentur.

5.4 Energy interdependence

In this chapter so far neglected theory of interdependence will be used to examine the level of interdependence between member states of the EU and Russia in the field of energy. This is going to contribute to the analysis by providing numbers of how interdependence changed since the NS1 started and how valid is the argument of the opposition of NS projects about increased dependence on Russia. This chapter will also provide a glance at interdependence from Russia’s perspective; therefore, it will help to create a complex picture.

First of all, two concepts need to be defined when it comes to the interdependence between the EU and Russia – proximity and complementarity. Proximity points to the fact

geographically Russia is and will stay the most powerful neighbour of the EU. It will continue to play a major role in the region and therefore, one can argue that the EU has no other choice but to cooperate. Complementarity between EU and Russia is obvious as Russia is the main energy supplier to the EU, while EU is the biggest importer of Russian goods and the biggest investor in the Russian economy (Simionov, 2015). With this in mind, one can say that Russia and the EU are mutually co-dependent in many areas. The only question that remains is to determine what role NS1 and NS2 play in this and whether the EU is shifting the asymmetrical interdependence into Russia's favour.

To determine that, this thesis is going to use a method of calculation of energy interdependence, as proposed by Simionov (Simionov, 2015), modified for the topic of the thesis:

Gas import dependence on Russia

$$= \frac{\text{Import Russian gas}}{\text{Total gas import}} * \frac{\text{Gas consumption}}{\text{Total energy consumption}} * 100$$

Gas export dependence of Russia on country (x)

$$= \frac{\text{Gas export to the (x)}}{\text{Total Russian gas export}} * \frac{\text{Total Russian gas export}}{\text{Total Russian energy export}} * 100$$

The part $\frac{\text{Gas consumption}}{\text{Total energy consumption}}$ was added due to the needed fact of how important is natural gas in the energy mix of a specific country. Similarly $\frac{\text{Total gas export}}{\text{Total energy export}}$ the figure was added to define the importance of the natural gas in overall energy exports of Russia. This method will be used to calculate energy dependence on Russia from the perspective of a group of selected member states of the EU. The same will be applied in reverse, from the point of Russia to those countries. Two years have been selected – 2006 and 2016, that will serve as a comparison before NS1; and after NS1 combined with the date of submitting the letter. For complete dataset see *Appendix*.

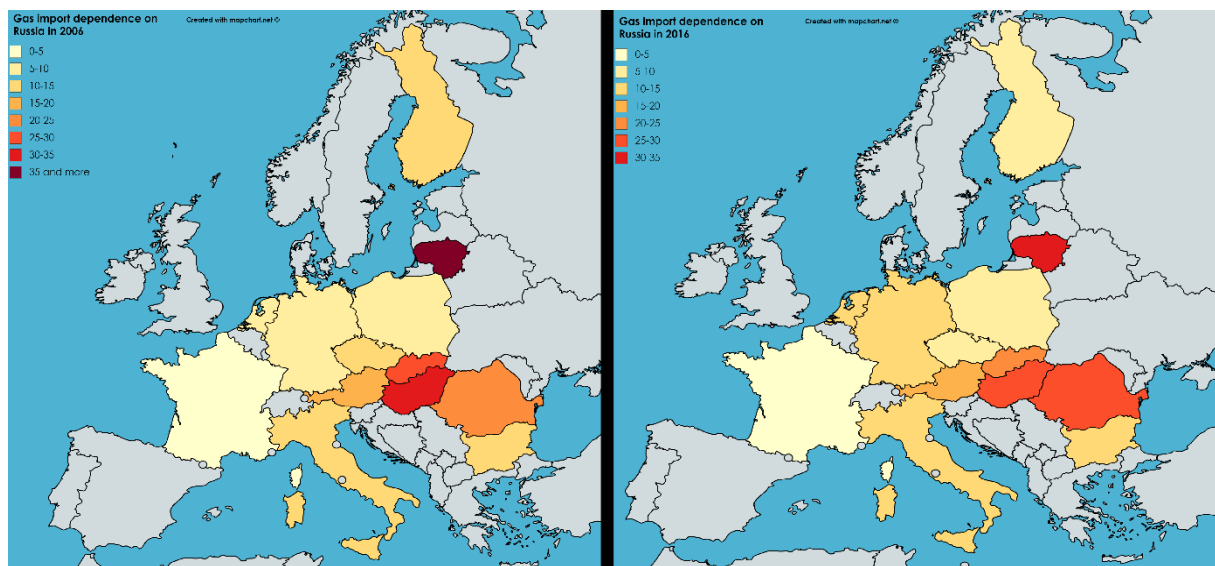


Figure 13; calculations by: author; created with: (mapchart.net, 2020)

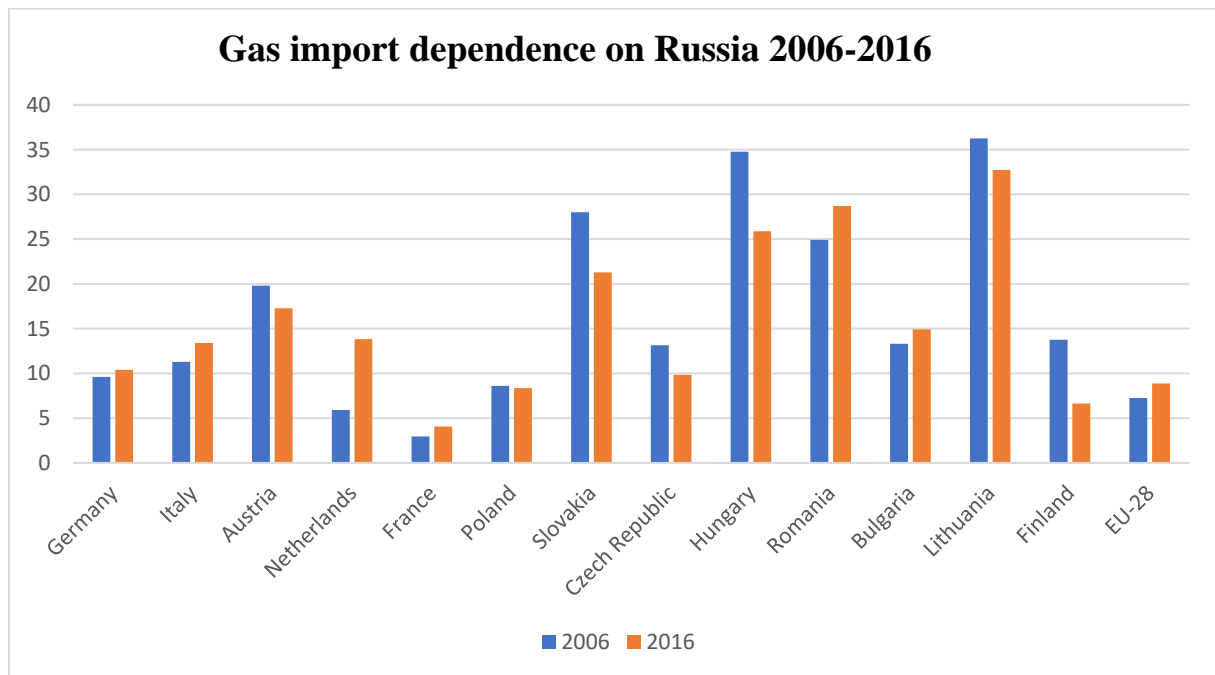


Figure 14; calculations by: author

From Figure 14 and 15 we can see that the dependence of members states on Russia between 2006 and 2016 did raise in some cases, especially in Western Europe. Most import-dependent states on Russia remained the same, namely Slovakia, Hungary, Lithuania. However, the dependence of states of Central and Eastern Europe decreased in 5 out of 7 examined cases. This fact denies the claims of the opposition of raising dependence of the region on Russia. Germany understandably increased its dependence as most of the NS1 capacity goes there, accompanied by Netherlands and France who are also influenced by NS1 and reduced

production in the Netherlands. We can see a slight shift of increased dependence, from 2006 where dependence was increasing with geographical proximity to Russia, to 2016, where the image slightly changed in that regard. One can imagine that with the full operation of NS2 and continuing use of the Ukrainian transit system, the centre of dependency will move even more to west, more concretely into Germany. Calculations also showed an expected result that the overall dependence of the EU increased by 18%, due to decreased domestic production.

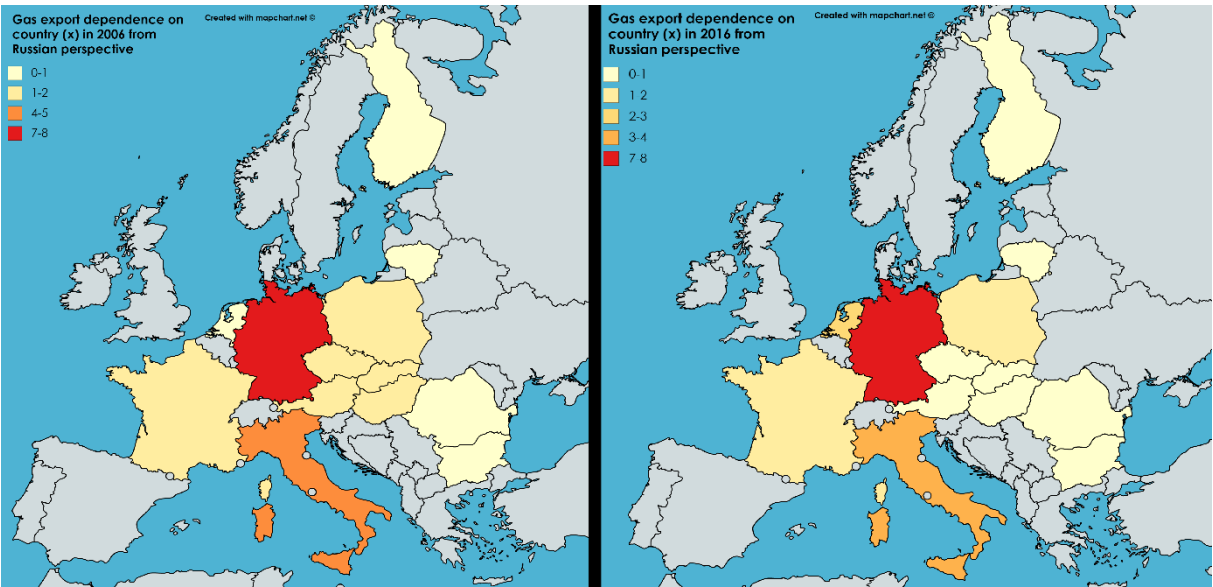


Figure 15; calculations by: author; created with: (mapchart.net, 2020)

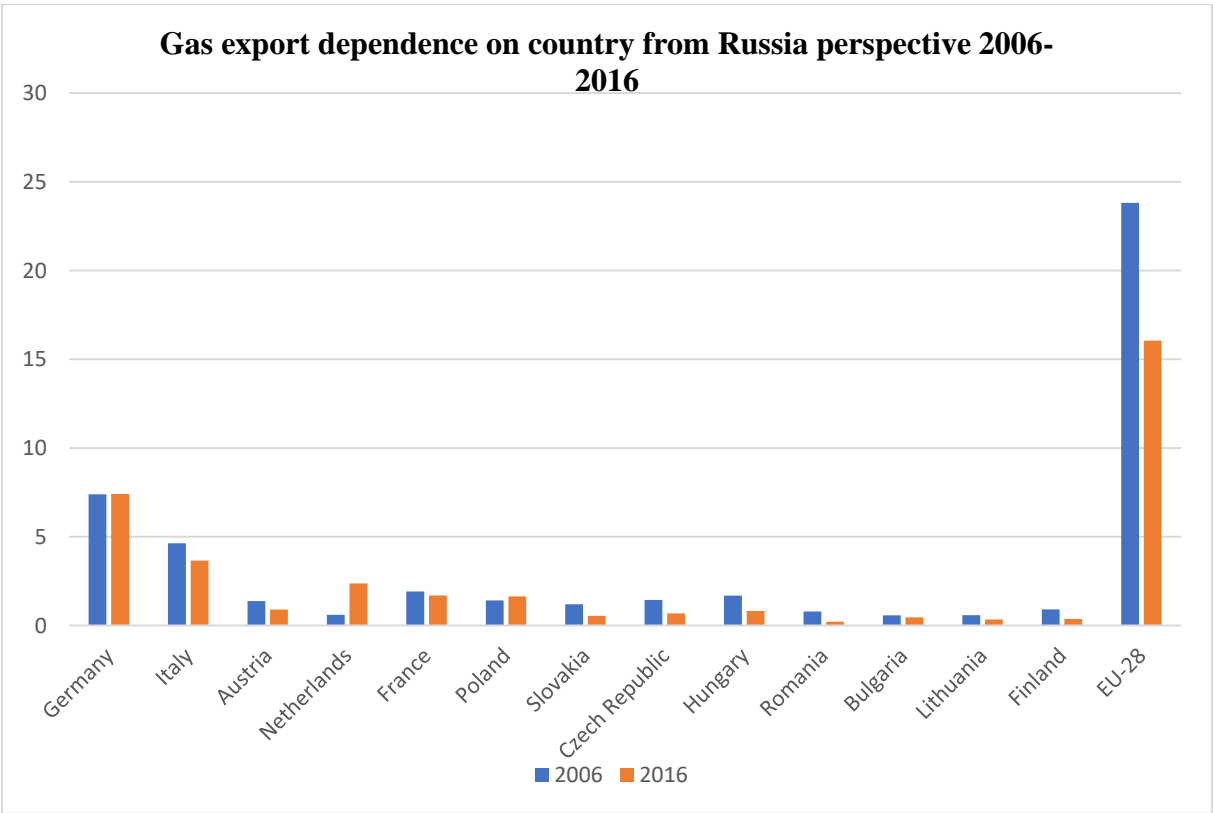


Figure 16; calculations by: author

Looking at *Figure 15* and *16* we can see that the Russian dependence on energy export to countries of EU decreased in most cases between 2006-2016, also the overall dependence on the EU decreased by 33%. This can be mostly assigned to increased export to Asian countries, mainly China, that developed through these years. The dependence increased substantially only in the case of the Netherlands, while in the case of Germany, and Poland a very minor increase can be noted. The rest of the examined countries decreased in their gas export importance to Russia.

According to the theory of interdependence, if the interdependence is of symmetrical character, the threat of conflict is on the minimum as both sides lose a lot in such a scenario. Therefore, an increase of dependence of the EU on import of Russian gas in combination with decreased importance of the EU as an export destination from Russia is shifting this relation into more asymmetrical status. According to the theory, this is a valid reason for raising concerns from the EU. The launching of NS2 will deepen this dependence, increase the vulnerability of the EU, and increase potential political leverage of Russia in the EU-decision making.

However, a comparison of individual member states of Central and Eastern Europe brings less one-sided results. What we can describe as an asymmetrical relationship from the beginning, starting in the era of the Soviet Union, these states have been slowly decreasing their dependence on Russia, and even though Russia's dependence on export to these countries have decreased as well, it can be concluded that NS1 did not increase it as was the argument of its opposition.

To sum it up, the asymmetrical character of the gas relationship between the EU, its member states and Russia have changed. The centre of dependence started to move towards Western Europe, the overall character shifted more into Russia's favourable position in the time frame between 2006-2016, while the construction of NS1 helped with this development. It can be expected that after NS2 starts its full operation this effect will further enlarge. However, this can be proven only by time.

6. Conclusion

In conclusion, the topic of this thesis – NS2 and its predecessor NS1 has been thoroughly examined. Throughout the analysis, an extreme complexity of these projects was revealed, far larger compared to expectations at the beginning. Step by step different aspects of these projects have been analysed to answer the research questions. My overall sceptical attitude towards NS2 have changed during the research. I have discovered some rather surprising facts that improved the image of NS2 in my mind, no longer being the “bad” project for us. That is why the results of this thesis are slightly different from the initial hypotheses. Since the whole thesis was based on neopositivist methodology, the formation of research questions with hypotheses and their testing through analysis was essential. Theory of neorealism has been most helpful through most of the thesis, while the theory of interdependence helped with the answer to the last of the research questions. With this said, I can conclude the following.

When it comes to the research question and its hypothesis, this analysis has essentially shown that NS1 and NS2 are very similar yet different in two aspects – validity of their rationale and timing. While examining the contribution to the energy security, the analysis has proven that the “purely economic” rationale behind NS1 has been confirmed, while the same rationale behind NS2 proved to be debatable, therefore supporting the concerns about the possible political rationale. Partial confirmation of the initial hypothesis is that NS1 really benefited from its status of “project of European interest” which has contributed to its far smoother execution. The latter part of the hypothesis about the threatening character of NS2 to the energy security of the EU has been revoked. However, the biggest differences lie beyond these projects, and that is timing and difference in reputation of Russia throughout the time. Through analysis of political dimensions and legal aspects of these projects, this thesis point to the fact that a changed geopolitical environment from 2006 have caused that NS2 is facing much larger opposition, not only from the member states but also the EU and legislation of the EU. The damaged reputation of Russia as the energy partner has caused increased distrust and unwillingness to get involved in common energy projects. The actions of the EU are in line with the neorealist’s perspective – the continuous support for Ukraine and usage of its transmission system, the increased legal obstacles for the NS2 or any other project coming from Russia all support the idea of increasing security against a rising hegemon. Through the scopes of realism, one can also justify the actions of Germany and Russia, who despite all challenges pursued the project, as it is in line with their selfish national interests.

In regard to implications of NS1 and NS2 to the energy security of the EU, based on the analysis, I can conclude that NS1 is beneficial to the energy security of the EU, while NS2 contribution is dubious. Therefore, the initial hypothesis cannot be confirmed fully. On one side NS1 proved to be an asset, despite not diversifying the supplier of the energy, according to the EU energy ambitions, yet diversifying the supply route for a more reliable one. However, contrary to the hypothesis, analysis has proven that NS2 does not decrease the energy security of the EU. Taking into account rising LNG trade and decreased gas consumption forecasted for the long term, NS2 presents a rather unnecessary project that can end up as a stranded asset, therefore with negligible implications on the energy security of the EU.

While answering the third question the full potential of the realist notion of international politics has been demonstrated. The hypothesis has been proven, NS1 had started before the full range of gas regulations in the EU have been implemented, and therefore cannot be examined through this aspect. Since NS2 had started after it should be fully subjected to these regulations. As the analysis has proven, NS2 is ignoring the basic principles of the EU law like Third-Party Access and Unbundling, and therefore cannot be considered in line with the law. However, mainly due to the strong interest of beneficiaries of the projects, a pursuit of loopholes has started, intending to somehow circumvent the EU laws and free NS2 from any EU regulations. Power and pursuit of national interest of mainly Germany may prove to be strong enough to achieve that, similarly to the case of OPAL interconnector to NS1 which was also subjugated to regulations, but then received an exemption. By doing that the overall “selfish” intentions of Germany and Russia are proving to be much stronger than vague principles of the EU internal energy market.

In order to answer the final question, the theory of interdependence has been used. As a result of a series of calculations designed specifically for this thesis, the initial hypothesis for this question has been confirmed. The dependence of the EU on Russia has increased since the announcement of NS1 and will most probably increase after the completion of the NS2. This shift into asymmetrical interdependence with Russia is another reason for concerns connected to implications of NS, as with increased dependence on Russia, its political leverage on the EU raises as well. However, the analysis also has shown that the dependence has mostly increased in the direct benefactors of NS1 and NS2, therefore they are pursuing these projects while knowing the risk. On the other hand, the dependence on Russia of the Central and Eastern European states, the ones who are in asymmetrical interdependence with Russia for decades now, has decreased.

To add some final words, this research has proven the complexity of these projects. There are no easy answers and as they are defendants and opposition to these projects the same can be said about arguments in favour and against. It is hard to determine what is the “ultimate truth” here, and therefore further research in this matter would be convenient.

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8. Appendix

Gas import dependence on Russia in 2006					
	Import of Russian Gas (bcm)	Total gas import (bcm)	Gas consumption (mtoe)	Total energy consumption (mtoe)	Result of the equation
Germany	36.54	90.84	78.5	328.5	9.6
Italy	22.92	77.37	69.4	182.2	11.28
Austria	6.85	8.73	8.5	33.7	19.79
Netherlands	2.97	18.53	34.5	92.3	5.9
France	9.5	49.58	40.6	262.6	2.96
Poland	7	10.57	12.3	94.5	8.6
Slovakia	6.3	6.3	5	17.8	28
Czech Republic	7.13	9.48	7.6	43.5	13.14
Hungary	8.32	10.95	11.3	24.7	34.76
Romania	3.95	6.25	15.3	38.8	24.92
Bulgaria	2.85	2.85	2.7	20.3	13.3
Lithuania	2.9	2.9	2.9	8	36.25
Finland	4.52	4.52	3.8	27.6	13.76
EU-27	117.69	369.6	420.6	1722.8	7.24

source: (Eurostat, 2008) (BP, 2007)

Gas import dependence on Russia in 2016					
	Import of Russian Gas (bcm)	Total gas import (bcm)	Gas consumption (mtoe)	Total energy consumption (mtoe)	Result of the equation
Germany	46	99.3	72.4	322.5	10.39
Italy	22.7	65.1	58.1	151.3	13.39

Austria	5.6	7.3	7.9	35.1	17.27
Netherlands	14.7	38	30.2	84.5	13.83
France	10.5	42	38.3	235.9	4.06
Poland	10.2	12.6	15.6	151.3	8.35
Slovakia	3.4	4.02	4.0	15.9	21.28
Czech Republic	4.2	7.5	7.0	39.9	9.83
Hungary	5.1	7.2	8.0	21.9	25.88
Romania	1.3	1.3	9.5	33.1	28.7
Bulgaria	2.88	2.88	2.7	18.1	14.92
Lithuania	2.1	2.1	1.8	5.5	32.73
Finland	2.3	2.3	1.8	27.1	6.64
EU-28	99.56	263,78	385.9	1642	8.87

Source: (EUROSTAT, 2019), (BP, 2017) (IEA, 2018)

Gas export dependence on country (x) in 2006 from Russian perspective					
	Gas export to the country (bcm)	Total Russian gas export (bcm)	Total Russian gas export (mtoe)	Total Russian energy export* (mtoe)	Result of the equation
Germany	36.54	151.46	136.314	444.607	7.39
Italy	22.92	151.46	136.314	444.607	4.63
Austria	6.85	151.46	136.314	444.607	1.38
Netherlands	2.97	151.46	136.314	444.607	0.6
France	9.5	151.46	136.314	444.607	1.92
Poland	7	151.46	136.314	444.607	1.41
Slovakia	6.3	151.46	136.314	444.607	1.2
Czech Republic	7.13	151.46	136.314	444.607	1.44
Hungary	8.32	151.46	136.314	444.607	1.68
Romania	3.95	151.46	136.314	444.607	0.79
Bulgaria	2.85	151.46	136.314	444.607	0.57

Lithuania	2.9	151.46	136.314	444.607	0.58
Finland	4.52	151.46	136.314	444.607	0.91
EU-27	117.69	151.46	136.314	444.607	23.82

**Total Russian energy export calculated as sum of natural gas, oil and coal export 136.314+248.445 +59.848*

Source: (BP, 2007), (Eurostat, 2008), (IEA, 2020)

Gas export dependence on country (x) in 2016 from Russian perspective					
	Gas export to the country (bcm)	Total Russian gas export (bcm)	Total Russian gas export (mtoe)	Total Russian energy export (mtoe)*	Result of the equation
Germany	46	204.8	184.32	558.447	7.41
Italy	22.7	204.8	184.32	558.447	3.66
Austria	5.6	204.8	184.32	558.447	0.9
Netherlands	14.7	204.8	184.32	558.447	2.37
France	10.5	204.8	184.32	558.447	1.69
Poland	10.2	204.8	184.32	558.447	1.64
Slovakia	3.4	204.8	184.32	558.447	0.55
Czech Republic	4.2	204.8	184.32	558.447	0.68
Hungary	5.1	204.8	184.32	558.447	0.82
Romania	1.3	204.8	184.32	558.447	0.21
Bulgaria	2.88	204.8	184.32	558.447	0.46
Lithuania	2.1	204.8	184.32	558.447	0.34
Finland	2.3	204.8	184.32	558.447	0.37
EU-28	99.56	204.8	184.32	558.447	16.05

**Total Russian energy export calculated as sum of natural gas, oil and coal export 194.577+254.87+109*

Source: (BP, 2017), (EUROSTAT, 2019) , (IEA, 2018), (IEA, 2020)