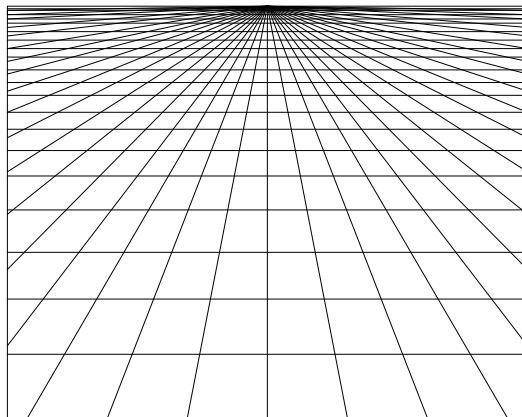




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TIK-MA-THESIS

Development of the Shtokman Field – Challenges and Opportunities

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Synopsis

The development of the Shtokman field and the discussions around it is, probably, the most burning and controversial topic in contemporary international energy policy and Russian energy policy. The Shtokman gas and condensate field, located 550 km north-east of Murmansk was discovered in 1988. Shtokman's explored reserves are valued at not less than 3.8 tcm of gas and around 37 mln tons of gas condensate.

In 2005 Gazprom began negotiations about Shtokman's development with eleven international oil and gas companies. That led in September 2005 to a short-list of five potential partners – the Norwegian Statoil and Norsk Hydro, the American Chevron and ConocoPhillips and the French Total – for a possible stake in the project. It was expected that Gazprom would choose the companies that would take part in consortium. But the final decision was postponed several times. As a result, in July 2007 Gazprom chose the first international partner for the development of the field - the French company Total got a 25% stake in the project. Some months later, in October 2007 the Norwegian StatoilHydro also was awarded a 24% stake in an operating company that will be responsible for planning, financing and building the first stage of the project.

The thesis explores the political aspect of the development of the Shtokman field and analyzes Gazprom's decisions on Shtokman. Then, this paper aims to present the economic perspective of the Shtokman development and to view Shtokman as opportunity for Russia to build up its national competence and innovation system.

The thesis demonstrates that the political perspective seems to be central in the Russian energy strategy and that Gazprom's decision on Shtokman was determined by economic as well as by political reasons. The “development” strategy” is not considered as central in Russian policy. The potential of the Shtokman project is enormous and the main question is whether it can become a “blessing” for Russian economy and industry. It may also happen that the country's economy will follow a path close to the “resource curse” development – and therefore in the longer run make Russia weaker. Whether Russia is able to use its natural resources (the Shtokman field) for building up its national innovation system is a question for further research.

Keywords: the Shtokman field, energy policy, innovation system, “resource curse”.

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Available: news.bbc.co.uk/.../hi/newsid_6035000/6035811.stm

Acronyms.

CGES – Center for Global Energy Studies

EEA - European Economic Area.

FDI – Foreign Direct Investment

GDP - The Gross Domestic Product per capita

LNG – Liquefied Natural Gas

MNEs – Multinational Enterprises

NEGP – Northern European Gas Pipeline

OECD – Organization for Economic Cooperation and Development

R&D – Research and Development

S&T - Science and Technology

WTO – World Trade Organization

1. Introduction

The energy needs of the world are growing fast, and competition for energy is on the rise. In addition, natural gas is becoming increasingly important for the world's energy needs. Russia's position in the production of natural gas is one of the leading in the world. As some experts observe, two decades from now the real potential for Russia may be in gas rather than oil¹. Thus, development of new gas fields, such as Shtokman, is of paramount importance for Russia.

The Shtokman gas and condensate field, located 550 km north-east of Murmansk was discovered in 1988. It has proven natural gas reserves of 3,200 bcm of the gas² about twice as much as the Troll field in the North Sea, Europe's biggest producing offshore gas field. In September 2005, the Russian energy company Gazprom selected five companies - Statoil and Norsk Hydro from Norway, Total from France and Chevron Corporation and ConocoPhillips from the US - as finalists in a search for partners to develop the field. In October 2006, Gazprom chief executive Alexei Miller announced that none of the five foreign companies shortlisted in September would be offered minority stakes in the project. Gazprom will now develop the field on its own but would consider foreign companies to work as subcontractors in helping to develop the field. Then, in July 2007 Gazprom chose the first international partner for the development of the field - the French company Total got a 25% stake in the project. Some months later, in October 2007 the Norwegian StatoilHydro also was awarded a 24% stake in an operating company that will be responsible for planning, financing and building the first stage of the project.

Gazprom's decisions on Shtokman can be associated with a wave – the company has changed the fate of Shtokman several times, thus giving hope to international partners and then destroying the plans of potential cooperation. As a result, negotiations on Shtokman provoked a lot of attention worldwide. A lot of experts pointed to the political character of the project, viewing Shtokman as a part of world energy game. It was claimed that Russia uses Shtokman in order to strengthen its great power status.

Norway, in particular, has always had high expectations about Shtokman. As Godzimirski observes, by 2006 Norway seemed to be gripped by “Shtokman fever”². What is important here is that Norway possesses state-of-the-art technology and offshore experience that could be useful in developing Shtokman. Russia, in its turn, is interested in getting access

¹ Hill, 2004, p.32.

² Godzimirski, 2007, p.15.

to Norwegian technology and competence. Thus, here arises another, less discussed question – will Russia be able to use Shtokman for building up its national competence. While the political aspect of the Shtokman field is broadly discussed, not so much attention is paid to the economic perspective. On the one hand we have Russia and its abundant natural resources and on the other hand we have international actors that possess necessary technology, knowledge and competence for developing Russian resources. Russia can use its natural resources for building up national competence and technology and developing innovation system.

As some experts observe, rich natural resources do not guarantee rapid economic growth and, on the contrary, economists have come to see rich natural resource endowments as a “curse” or “precious bane” that inevitably undermines development and slows economic growth³. The main problem here is how to use natural resources in such a way so that they would generate economic growth. The notions of competence building, knowledge production and innovation systems are central to the process of developing a dynamic economy.

This master thesis explores the political aspect of the development of the Shtokman field and then analyzes its economic perspective. The paper is divided into four parts. The first part aims to present the world energy context and the role of Russia in energy security. The second one focuses on the history of the Shtokman field and on the “wave” of negotiations on the project. It underlines the political character of Gazprom’s decisions on Shtokman. The third part discusses the Russian Energy Strategy to 2020 and points to priorities and objectives of country’s energy development and its collaboration with international actors. Finally, the last part aims to explore the economic perspective of the Shtokman development and to view Shtokman as opportunity for Russia to build up its national competence and innovation system.

³ Ahrend, 2006, p.2.

2. Method

This master thesis is based on qualitative analysis of a single case – the development of the Shtokman field and the discussion of how abundant natural resources can contribute to dynamic economic growth. In order to answer the paper's first aim – to present world energy context and the role Russia plays in it – I used several sources. The problem of world energy supply is widely discussed and there exists a lot of literature on this topic. I used, in particular, the master thesis in national security affairs written by Glenn D. Roettger to present three main ideas of resolving situation of energy security in the world. In addition, various newspaper articles and publications provided me with necessary information. Works by Paillard and Fredholm were also very helpful. In the first chapter I present some central points of Vladimir Putin's academic writing on Russian natural resource policy. This document helped me to present to the priorities of Russian energy policy. Since the original thesis is not publicly available neither in Russian nor in English, I used the paper by Harley Balzer "Vladimir Putin's Academic Writings and Russian Natural Resource Policy". Here it is necessary to mention that it was much easier to get access to international sources of information on the development of the Shtokman field than to Russian documents. Unfortunately, I didn't find any relevant literature in the Russian National Library in St.Petersburg. Besides, search systems there are quite outdated and it made it difficult to get access to the needed literature.

The second aim of this thesis was to present the political perspective on the development of Shtokman. First I used works written by Arild Moe, Deputy Director and Senior Research Fellow at Fridtjof Nansen Institute in Oslo, to present the history of the Shtokman development. His article "Shtokman-beslutningen: Forklaringer og implikasjoner" focuses on the political aspect of question and underlines the Norwegian interest in the development of the field. Jakub Godzimirski, Senior Research Fellow at Norwegian Institute of International Affairs (NUPI) has published several articles on the development of Shtokman, for example, "Energy and Identity – Readings of Shtokman and NEGP". By focusing on works by Moe and Godzimirski I was able to discern how experts commented the debate around Shtokman. Then, Russian newspapers, such as "Ekspert", "Vedomosti" and "Rossijskaya gazeta" provided me with information of how Russian media commented Gazprom's decisions on Shtokman. In addition, I found an interesting article by A.M.Samsam Bakhtiari (October 2006), who was a senior expert employed by the National Iranian Oil Company and advisor to the Oil Depletion Analysis Centre. I used it to present an "external" point of view on the topic.

The whole fifth chapter is dedicated to the Russian Energy Strategy to 2020. I discuss some parts of this document in order to point to priorities and objectives of Russia's energy development and collaboration with international actors. This paper, unlike Putin's academic paper, is publicly available.

After discussing the political perspective of the Shtokman field, I addressed the question of economic development. First, I examined how abundant natural resources may become a "curse" for economic development. Works by Sachs and Warner, Olav Wicken and Keith Smiths provided me with theoretical approaches to this issue. The article by Ferranti, Perry, Lederman and Maloney helped me to get a better overview of how different countries managed/did not manage to use their natural resource base for successful development of their economies.

The discussion about innovation and systems of innovation theories was based for the most part on the articles of various researches published in "The Oxford Handbook of Innovation". In addition, I used the paper by Kline and Rosenberg for examining this question.

Of great importance for the discussion about the history of building up the oil industry in Norway was the book by Olsen and Sejersted. There they presented the main stages in the developing the oil activity in Norway. This book also served as a basis for the following examination of common features in Norwegian and Russian energy policies.

Websites of the organizations mentioned in the thesis were useful when particular information about the dates, worldviews and methods of work was needed.

I chose to base my master thesis on both Russian, Norwegian and international sources in order to present the objective and as far as possible complete view on the development of the Shtokman field.

3. World energy context

The world economy is developing rapidly and according to some forecasts world energy consumption will increase to 30% by 2030 and it is expected that gas share in world consumption will come to 24%⁴. In recent years the problems of energy security have been brought to the forefront. The necessity of solutions of global energy problems, especially in relations between consumer countries and producer countries, has become obvious. As a result, more and more attention is focused on perspectives of energy security concerned with stability and predictability of world energy market and reliability of energy supply.

The issue of global energy security was one of the central at G8 meeting in St.Petersburg in 2006. There was raised a question about security of not only energy consumers, but also energy producers. True energy security could be formulated only with the assistance of all actors: developed countries, international oil companies, countries exporters of oil and gas and their national companies, leading developing countries and their oil and gas companies, marked Manouchehr Takin, Senior Petroleum Upstream Analyst from CGES⁵.

Europe is becoming ever more dependent on outside sources for its energy needs and the continued growth in global energy needs in both developed and emerging countries will be met with lacking supplies⁶. The search for new energy sources will continue to be the central theme driving the foreign policies of all the world's greatest powers, especially in Europe and Russia. In this context the development of the Shtokman field takes on special significance both in terms of energy security, economy and foreign policy.

From the point of view of strategic interests Russia is viewed as a key unit in the system of world energy security. Russia plays and will continue to play one of the main roles in supply and sale of carbohydrates in the world. This will inevitably lead to decisive consequences for world energy security

Globalization of world energy resources represents a natural stage in their evolutionary development. The ultimate aim of developing the energy markets is creation of global energy area with common "game" rules. And it will be easier to "play" for those who determine the rules. Therefore there is a struggle for key positions in this area already now. Russia's position in the production of natural gas is even more important than in oil

⁴ Shpakov and Anohin, 2007, p.8.

⁵ "Ekspert", 24.07.2006.

⁶ Paillard, 2007, p.5.

extraction. Of the total EU gas imports, about half comes from Russia. Some analysts expect that Europe in the future, perhaps by 2020, will depend up to 70% on Russian gas supplies⁷. Russia is also becoming an important energy trading partner for the United States though these two countries are at the opposite parts of the world energy “field”. Thus, situation in Russian energy policy and development of new fields in particular is important for many international actors. Another important question here is whether Russia is able to use its natural resources as an instrument for building up national economy and industry and developing technological capacities, needed for successful development of new fields, such as Shtokman. In the last two decades many economists have come to see rich natural resource endowments as a “curse” or a “precious bane” that inevitably undermines development and slows economic growth⁸. Thus, it is interesting to discuss what can be the right strategy or what elements are essential for dynamic development of resource based economy.

According to Roettger, there are three main ideas for resolving the situation of energy security⁹. The first one is an EU centric approach which asks for all European countries to join together while planning ways of reducing dependence on Russia in the future. The second one is a go-it-alone attitude favored by Russia. It is claimed that Russia uses its energy resources as a valuable foreign policy tool. Due to the inability of the EU to establish a common energy policy, Russia introduces its “game” rules. The third idea is about American approach. It seeks to limit the Russian influence and encourages Russia to open up its natural resources and make them conducive to investment by trans-national corporations. But, as Roettger points out, this approach is problematic because it favors U.S. companies while at the same time touches on the taboo of foreign direct investment (FDI) of which Russia is resistant.

It seems that Russia’s actions are quite rational and it is obvious that Russian energy policy plays a crucial role in country’s foreign policy. Thus, the Shtokman field can be viewed as a part of a global energy “game” where Russia takes one of the leading stands among all interested actors.

⁷ Fredholm, 2005, p.1.

⁸ Ahrend, 2006.

⁹ Roettger, 2007, p.3.

3.1. Russian energy policy

The image of Russia has changed greatly in the recent years in many respects thanks to its powerful energy policy. In addition, as many experts observe, Russian energy policy has been used as a political tool in foreign policy of the country. A brief analysis of some articles about Russia's energy policy shows that there are many international actors who apprehend Russia even as a threat. "Russian analytical digest", for instance, mentions some European sources where President Vladimir Putin is represented as "a gangster with a gasoline pump and a Soviet Commissar wielding Gazprom's massive pipeline network"¹⁰. As we will see, these fears are not groundless and have reasonable basis.

It is generally known that countries in the European Union are dependent on world systems of energy supply. To a great extent they are oriented to Russian oil and gas regions of production. Thus, this fact puts Russia in an advantageous position when it can introduce its own "game" rules and make the most of this situation. As many experts observe, to depend on Russia for energy supplies is to move from the field of pure business relationships into the field of politics¹¹. But Russia has also some weak sides, such as out-of-date technological base of the fuel and energy complex. Cooperation with international actors can contribute a lot to the process of modernization and reconstruction of the existing industry complex. Some international actors, as Norway for instance, possess complex technologies and competence that are needed for offshore development. Thus, international cooperation is just essential for building up national competence and development of new fields and its success in many respects depends on rational energy and foreign policy of the country.

The situation with gas industry is especially interesting since natural gas is becoming increasingly important for the world's energy needs. Russia controls an estimated 31% of the global gas reserves, which makes Russia more important for gas than Saudi Arabia is for oil¹². Russia through Gazprom is already the dominant world gas exporter. In the future, Russia will be able to influence gas prices on export markets by increasing or curtailing exports. Thus, Europe is quite anxious about Russian energy policy and is interested in cooperation on mutually beneficial conditions. The question is if it is possible to work out such conditions that will satisfy all actors of the great energy "game" which in its turn is a part of international politics.

¹⁰ Perovic and Orttung, 2007.

¹¹ Fredholm, 2005, p.2

¹² Ibid., p.1.

The Russian government plays a crucial role in providing energy security of the country and has moved to take control of its energy supplies. Three predominantly state-owned companies control 100 percent of the country's oil and Gazprom, a joint stock company under state control, controls 25 percent of the world's gas reserves. It is well-known fact that Gazprom's extremely close ties with the Kremlin explain its privileged position, marks Paillard¹³. The Chairman of the Board of Directors, Dmitri Medvedev, was formerly Putin's Chief of Staff and had been often mentioned as a possible successor to Putin. And, indeed, in May 2008 Medvedev assumed the office of President of the Russian Federation. In addition, Deputy Chairman of the Board of Directors of Gazprom, Alexei Miller, is also a close friend of Putin. Thus, combination of energy and politics has made Gazprom an instrument of politico-social regulation in Russia.

3.2. Gazprom

Gazprom is the world's largest gas company basically focused on geological exploration, production, transmission, storage, processing and marketing of gas and other hydrocarbons. The state owns a 50.002 per cent controlling stake in Gazprom. The most important strategic goals of Gazprom are to take leading positions in the global energy market, increase the company's authority and influence in the world community and ensure the long-term value growth¹⁴.

Originally, Gazprom was an offshoot of the Soviet Gas Ministry, set up in 1965 when the USSR decided to develop the production and consumption of gas. In 1989, the USSR Ministry of the Gas was reorganized into gas concern named Gazprom. Then, in 1993 the decree of reorganization of Gazprom into Russian Joint Stock Company Gazprom was signed. In 1998 it became OAO Gazprom, the name it retains to this day. In 2005, the Russian state became the company's majority shareholder with 50.01% of the share capital. Thus, originally Gazprom was a part of a ministry - a political organ, and the history of Gazprom demonstrates how politics is deeply intertwined with business in Russian oil and gas industry.

Gazprom has almost total control over gas transport within and out of Russia and controls most gas production. In addition, the company is presented in many EU countries and is trying to strengthen its position in Western Europe. As Fredholm observes, Russia regards energy as a natural monopoly to be kept under state control. And there are no signs that the Russian state plans to reduce its control over these monopolies, since they provide the Russian

¹³ Paillard, 2007, p.9.

¹⁴ www.gazprom.com

government with a convenient way of regulating the energy industry and safeguarding strategic objectives¹⁵.

Recently energy perspectives have had a dominating role in Russian foreign policy and today energy factor is the most ponderable in Russia's negotiations with other countries. Gazprom, the controlled by the state Russian company, plays a significant role in this process.

3.3. Putin's academic papers

In June 1997 Vladimir Putin defended a Candidate of Sciences degree in economics on the topic of "Mineral Raw Materials in the Strategy for Development of the Russian Economy" at the St.Petersburg Mining Institute. The text of the thesis is not publicly available, but those who have read the paper claim that it consists of three sections: an analysis of the economic conditions in St.Petersburg and Leningrad Oblast emphasizing the importance of natural resources in future development, a concept of strategic planning to be applied to resource development, and strategic planning to improve regional port facilities in St.Petersburg and the adjacent Leningrad Oblast, with an emphasis on facilitating natural resource exports¹⁶. In addition, Putin published several scientific papers related to the defense of the dissertation. In 1999 his article about the role of natural resources in Russia's economy was published in an annual edition of the Mining Institute's journal. Here we will present some central points of Putin's dissertation and will try to draw connections between the views expressed in the paper and policy during Putin's presidential terms. Here we use the article (2006) by Harley Balzer as a source of information about Vladimir Putin's dissertation.

In his paper Putin emphasizes the meaning of natural resources as the most important economic and political factor in sustainable development of the country. He is convinced that in the twenty-first century Russia's economy will maintain its natural resource orientation. It is mentioned that when effectively utilized the natural resource potential becomes one of the most important preconditions for the entry of Russia into the world economy.

According to the document, in the near term the strategic factor in Russia's economic growth must be restructuring the national economy on the basis of the available mineral raw materials resources with the goal of significantly increasing its effectiveness. Then, in this

¹⁵ Fredholm, 2005, p.7.

¹⁶ Balzer, 2006

regard the process of restructuring the national economy must have the goal of creating the most effective and competitive companies on both the domestic and world markets.

Putin notes that the state might have the right to regulate the process of mineral resources development and use, acting in the interests of society as a whole and of individual property owners. He points to some problems and mentions that improvement and cardinal renewal of technology must be put at the forefront of entrepreneurial activity. It is necessary to facilitate extension of leading technologies from the MIC (Military Industrial Complex) to the civilian sector and the economic sphere, utilize the national discoveries that have been preserved and stimulate Russian scientists to new developments.

Putin underlines that the most important goal in natural resource policy is to facilitate rational and effective use of Russia's natural resource potential with the goal of meeting the country's current and future needs along with exports. Thus, the natural resource complex remains the most important factor in the state's development in the near term.

Some assertions expressed in the dissertation have a lot in common with the Russian energy strategy to 2020 which will be discussed later. Both documents mention the importance of natural resources for Russian energy policy and foreign policy. In this connection development of new fields takes on special meaning, in our case the Shtokman field. But, as we have mentioned above, rich natural resource endowments do not guarantee a dynamic development of economy. Thus, it is of great importance to work out a strategy for successful development of natural resource industry.

3.4. Mutual dependence of Russia and Europe on energy

“Nezavisimaya gazeta” together with the Institute for problems of natural monopolies and the Institute for energy and finance has worked out the rating of dependence of countries on Russian oil and gas supply. As “Nezavisimaya gazeta” believes, this will help to understand how foreign states depend on Russia and define the driving forces of intergovernmental negotiations¹⁷. There are three groups of countries according to their dependence on Russian energy supply. The first group, A, includes the so-called “oil and gas satellites of Russia” or, in other words, countries that are strongly dependent on Russian energy. Among them are Ukraine, Moldavia, Finland, all the Baltic States and most countries of Eastern Europe. To the second group B belong countries in which the share of Russian oil

¹⁷ http://www.ng.ru/economics/2005-12-16/1_partners.html

and gas is from 60% to 10%. These are Germany, France, Italy, Austria, Turkey, Greece, Kazakhstan and Belarus. It is mentioned that France, Germany and Italy play main roles in this group. They are interested in energy cooperation but at the same time are able to carry out their own independent policy. The third group C consists of countries that are energy independent from Russia, such as Norway, Holland, Denmark, Spain, Great Britain, Japan, India, China and USA. Thus, many European countries are interested in Russian energy resources to a different extent and there is no doubt that Russian energy policy affects relations with all international actors.

As some experts observe, Europe needs to formulate a common energy policy toward Russia stressing common interests and needs¹⁸. Though it is obvious that Russia in the future will remain one of Europe's most crucial suppliers of energy, the dependence will be mutual. Fredholm marks that while the European Union will not be able to forego Russian energy deliveries, Russia will for reasons of export infrastructure not be able swiftly to divert its energy exports elsewhere, in case the two parties cannot agree. And Russia will need the revenues from gas exports as badly as the European Union will need Russian energy¹⁹. Or, in other words, Russia and the European Union will be mutually dependent. The idea of mutual dependence was also supported by Igor Shuvalov, Assistant to the president of Russia. He mentioned that Russian method, based on security of energy producers and energy consumers, leads to creation of a new value – mutual dependence, and not independence from each other²⁰. Mutual dependence can be laid together as mosaic of different collaboration forms of international companies. NEGP is an example of a bilateral project. This gas pipeline is to be build by 2010 under the Baltic Sea from Russia to Germany in order to supply the Western customers with Russian gas.

Putin's statement about the creation of a cartel of the world's leading gas exporting countries, including Russia, Qatar and Iran added fuel to European concerns. In 2007 Vladimir Putin and Qatari Emir Sheik Hamad bin Khalifa Al Thani told reporters that they wanted more cooperation among competing gas producers in their dealings with natural gas-consuming countries²¹. To Europe this would mean even higher prices for natural gas. But, as many experts mentioned, the idea of a gas alliance was a highly unrealistic idea. Nevertheless, it stirred up more uneasiness about Russia. "Russian Analytical digest" views this as a tactical move. In return for dropping the idea the Kremlin can ask for something and Europeans may,

¹⁸ Perovic and Orttung, 2007.

¹⁹ Fredholm, 2005, p.6.

²⁰ Rossijskaya biznes-gazeta, 15 August 2006.

²¹ <http://www.msnbc.msn.com/id/17116262/>

for instance, allow Gazprom to make controversial acquisitions in the European distribution markets.

However, there are some pessimistic prospects about Gazprom's gas production for the next years. Whether Russia manages to produce more gas and export more to Europe depends on several factors. One of them is development of new gas fields such as Shtokman, discovered in 1988 and located in the Barents Sea. But development of the field, in its turn, depends on developing and application of new complex technologies that Russia does not possess. Thus, the problem of knowledge exchange and competence building will be central in this process.

3.5. Russia and Norway – close but distant neighbors

While examining the collaboration between Norway and Russia, it is necessary to remember that these two countries have crucial differences in size and geographical positions as well as in historical and cultural features. As Austvik notes, Norway, as a small country, has a relatively insignificant influence on the world community. Russia with its vast territory and enormous natural resource reserves will inevitably profit from combining economic as well as geo-political goals²². Jakub Godzimirski mentions that in Norway Russia is still very much present in strategic calculations. The country is one of the elements of the so-called strategic triangle made up of the EU, the US and Russia²³.

Gunnar Austvik notes that as Russia moves slowly towards a market economy and integration into the EU and world economy, it is converging with Norwegian petroleum policies in some areas²⁴. Like Norway, Russia has been influenced by downstream market changes and policy measures, such as market regulation and taxation. In addition, Russia has been able to arrange its petroleum industry in a rather independent manner, though it has no EEA agreement with the EU. As a result Gazprom has strengthened its position over the past years as a producer and transporter of gas within Russia. Austvik also notes that the Russian government has made efforts to strengthen the direct control of the company. He rightly marks that the fact that Russia is not fully integrated in the international economy, as for example in terms of membership in the World Trade Organization (WTO), has had some negative impacts on Russia. Relatively low competitiveness of Russian products and a

²² Austvik, 2006, p.8.

²³ Godzimirski, 2007, p.6.

²⁴ Austvik, 2006, p.7.

number of out-dated production technologies give Russia a technological disadvantage. Though, as “Ekspert” asserts, Russia evenly may pretend to leadership. About one fourth of world resources of hydrocarbon raw materials is concentrated on Russian continental shelf. A bigger part of these natural resources lies at great depths of the Arctic seas. Norway and Russia began the exploration of the shelf simultaneously, but after twenty years Norway was extracting more than 250 mill. tons of hydrocarbons in the North Sea, while Russia did not start field exploitation even in the Barents Sea or the Kara Sea. It is pointed out to several reasons of Russian lag: lack of experience, technologies, equipment, more complex working conditions than on the Norwegian shelf. In addition there is shortage of own funds and inability to create favorable conditions for investments²⁵. Thus, cooperation with Norway would have a great meaning for the Russian energy sector.

In spite of many differences, energy is an arena where Norway and Russia meet as almost equal partners, as both countries are great energy powers and important suppliers of energy to global and European markets. Norway and Russia have competed in energy markets since 1970s and are still central actors in the world energy “game”. As “Rossijskaya gazeta” underlines, developing of Norwegian Snøhvit and Russian Shtokman could support to form a model of ideal energy (and not only) cooperation between neighbors²⁶. Jakub Godzimirski also notes that the High North was to become a Russian-Norwegian energy meeting point, where Norway was to cooperate with Russia on the development of huge energy assets. He points that Norway was to provide state of the art offshore technologies, while Russia was to retain control over its energy assets and use them as a policy tool in the country’s energy strategy²⁷.

The interesting fact is, notes “Rossijskaya gazeta”, that the program of transference of Norwegian oil and gas complex to the Russian border had been formulated before the names of strategic partners for the development of the Shtokman field were announced. Moving its industry to the east, Norway at the least raised chances for participation in the project and at the most created the base for active independent work in this region.

Some Russian sources observe that the merger between Statoil and Hydro in December 2006 was stimulated by Gazprom’s decision to develop the Shtokman field on its

²⁵ Ekspert Severo-Zapad, 5 September 2005.

²⁶ Rossijskaya biznes-gazeta, 15 August 2006.

²⁷ Godzimirski, 2007, p.9.

own²⁸. Both companies mentioned that plan about strengthening positions on international market was the official reason for the merger. Information manager of Hydro Oil & Energy Kama Holte Strand emphasized that decision about the merger was a result of efforts to raise competitiveness and not a consequence of the Shtokman decision or other events²⁹. Editor of “Finansavisen” Trygve Hegnar was critical towards the merger. He noted that unlike Russia, where Putin provided total control over oil and gas industry, the same happened in Norway by the merger and stock purchase but the result would be the same³⁰. But still, many experts think that Shtokman has played an important role in the process of the merger of Statoil and Hydro.

Thus, in spite of many differences in political and economic situations, Norway and Russia have great potentials for cooperation. The development of the Shtokman field can be viewed as an opportunity for achievement the common goals in the development of the Barents Sea region. Cooperation on Shtokman can contribute a lot to the settlement of other problems and contradictions in the region. Besides the political perspective, the development of Shtokman can have great consequences for the Russian economy. These two approaches are presented in the next chapters.

²⁸ Vedomosti, 12 Desember 2006.

²⁹ Ekspert, 25 Desember 2006.

³⁰ Ibid.

4. The political perspective on the Shtokman Development.

4.1. The history of the Shtokman field development.

The development of the Shtokman field and the discussions around it is, probably, the most burning and controversial topic in contemporary international energy policy and Russian energy policy. Just look at some Russian newspaper headlines – the Shtokman field is called “a puzzle”³¹, “a fairy tale”³², “our tomorrow”³³ and so on. What is the Shtokman field and why the field discovered already in 1988, provokes so much attention today?

Here we will start with presenting the political perspective of the development of the Shtokman field. Another perspective with the main focus on natural resources as a basis for development of national competence will be discussed in the next chapter.

The Shtokman gas condensate deposit lies in the Barents Sea, in the north of Russia. The project of development of the Shtokman field had been initiated well before the collapse of the USSR. The Shtokman field was discovered in 1988 to the east of Murmansk. It lies 555 km from land, in 350 m of water. Shtokman’s explored reserves are valued at not less than 3.8 tcm of gas and around 37 mln tons of gas condensate. This is about twice as much as the Troll field in the North Sea, Europe’s biggest producing offshore gas field. The Shtokman project contemplates annually extracting some 70 bcm of natural gas and 0.6 mln t of gas condensate. This is commensurate with annual gas production in Norway that is a large gas supplier to Europe. An initial project stage is projected to see annual production of 22.5 bcm of natural gas and 205,000 t of gas condensate³⁴.

³¹ Ekspert Severo-Zapad, 5 September 2005.

³² Ibid.

³³ Ibid.

³⁴ <http://www.gazprom.com/eng/articles/article21712.shtml>



1) The Shtokman field

In 1990 a consortium of Western companies – Arctic Star – entered an agreement with the Soviet Oil and Gas Ministry and started drafting feasibility study for the field. This group consisted of Norsk Hydro, Conoco and the Finnish companies Imatran Voima, Metra and Neste. On the Soviet side, Arktikmorneftegasrazvedka gradually became an active participant. In 1991, the group concluded that production on this field was technically feasible. As the project was being worked out, legislation for licensing was not in place, but the partners in Arctic Star were led to understand that the group would be given permission to develop the field³⁵. Thus, from the very beginning the international participation in the Shtokman project was approved.

Then, in winter 1992 the creation of the company Rosshelf was announced. As Arild Moe, Deputy Director and Senior Research Fellow at Fridtjof Nansen Institute in Oslo notes, the main intention behind Rosshelf was to convert technological and industrial capacities in the military industrial sector to use in the offshore sector³⁶. This company encompassed several large industrial enterprises. The group of companies rapidly established itself as a contender for development rights for the Shtokman field.

In November 1992 it was announced that Rosshelf had been granted a license to develop the Shtokman field. At the same time, as Moe observes, it became evident that the state concern for the gas industry – Gazprom – had become the main force in Rosshelf, and that it had acquired a controlling share of the company stocks, directly and through subsidiaries. In Moe's opinion, one of Gazprom's main motives for participation in Rosshelf had been to gain control over offshore activities. This would also conform with Gazprom's general priorities.

³⁵ Moe, 1994, p.135.

³⁶ Ibid.

It is interesting to mention that the stated goal of Rosshelf was to start building installations in 1996-97 and start production by the year 2000³⁷. These were rather optimistic plans and as we can see the production has not even started in 2008.

Though the license for field development belonged to Rosshelf the project has in reality all the time been controlled by Gazprom³⁸. But Gazprom needed the participation of foreign companies with offshore experience, both for technical and financial aspects of the project. A group comprising Norsk Hydro, Fortum, Conoco, TotalFina together with Gazprom worked on improvement of the geological data, development solutions, and commercial evaluations of the market for gas and condensate from the field. Thus, international companies expected to become partners in a joint project for the field in a later stage. But in 2002 the group was dissolved and Gazprom and the state-owned Rosneft oil company formed 50-50 joint venture “ZAO Sevmorneftegaz” to develop and operate Shtokman. In December 2004 Rosneft sold its share to Gazprom for \$ 1.7bn.

In 2005 negotiations began about Shtokman’s development between Gazprom and eleven international oil and gas companies. That led in September 2005 to a short-list of five potential partners – the Norwegian Statoil and Norsk Hydro, the American Chevron and ConocoPhillips and the French Total – for a possible stake in the project. It was expected that Gazprom would choose the companies that would take part in consortium. But the final decision was postponed several times. Over the years various statements have been given about the start-up of the project – 2007, 2010, 2015 and 2020.

In Norway, as Arild Moe mentions, there was “en stigende optimisme i Norge om at begge de to norske selskapene ville komme med når avgjørelsen først ble tatt”³⁹. There were also some statements from the Russian side about Norway as a strategic partner in energy sector. Shtokman would have been one of the biggest gas fields in offshore production in the world and at the same time would have indicated opening of the Russian arctic shelf with colossal gas fields. That’s why participation in the development of the Shtokman field would have had a great strategic importance for the involved actors and not less Norway⁴⁰.

³⁷ Ibid., p.136.

³⁸ Moe, 2004, p.18.

³⁹ Moe, 2006.

⁴⁰ Ibid.

4.2. The “wave” of negotiations on the Shtokman field

It was a big shock for all potential partners when Gazprom in October 2006 announced that it would develop one of the world’s largest offshore gas fields on its own, “thus dealing a huge blow to some of the world’s largest oil and gas companies, which had hoped to be part of a consortium”⁴¹. “Gazprom has decided the project will go ahead without international participation”, said chief executive Alexei Miller.

It was, to put it mildly, a rather unexpected decision that caused bewilderment and criticism from many actors abroad. International and Russian experts began immediately to search for reasonable explanations of Gazprom’s decision and discuss the future of the Shtokman field. As it has been mentioned above, there were European and American companies among the potential partners, or, in other words, there were two possible ways of Russian energy direction. On the one hand, the original destination of Shtokman gas was to be the East coast of the United States, with the gas transported as LNG (Liquefied Petroleum Gas). But later it was decided to develop a project of supplying Western Europe with Russian gas by building Northern European Gas Pipeline (NEGP).

Expectations of potential partners of Gazprom were not realized and the final decision even caused shock. Then, as a result there appeared a lot of critical statements about Russian energy strategy and foreign policy. It became obvious that besides of rational explanation of Russia’s decision there were also political reasons. Now Gazprom was seen as a prolongation of the state’s political arm⁴².

Nevertheless, there was no doubt that it would be almost impossible for Gazprom to develop Shtokman without any international assistance. Gazprom did not possess necessary technologies and had little experience of developing such huge gas fields as Shtokman. So, there still were some hopes for international actors about possible participation in the project, but on different conditions. First of all, the main potential partner was Norway – Russia’s nearest neighbor. Norway, unlike other countries, was quite restrained in criticism against Russia. A lot connects Russia and Norway – both countries are great energy powers, they have common border and work together on several projects in the North. So, in spite of the final decision of Gazprom, Shtokman did not close the door for possible cooperation.

⁴¹ <http://news.bbc.co.uk/go/pr/fr/-/2/hi/business/6035811.stm>

⁴² <http://www.tu.no/nyheter/offshore/article54681.ece>

July 2007 is another crucial date in the Shtokman project. Finally Gazprom got the first international partner for the development of the Shtokman field – the French company Total. As some Russian experts note, the fact that Russia now was willing to share Shtokman with others indicated a positive signal of its foreign policy to the West. Russia was ready to make a compromise when it was profitable. The interesting thing was that probably Gazprom had no choice⁴³.

The Russian Government's position has changed several times in the last years and these changes have happened in parallel to changes in the foreign policy situation. The Shtokman field project turns as a weather-wane all the time. The new model of cooperation probably urges Russia to show attempts to regulate relations with international partners. The Kremlin has been giving such signals for a long time now, but reconsideration of plans about Shtokman may become the most convincing sign. The main thing now is to stop changing principles and to choose the right one⁴⁴.

What serves as a concession to foreign companies, can be just a need for the gas monopolist. As some analysts mention, in reality Gazprom is not able to start up the Shtokman project without any international help⁴⁵. If the rules of the Shtokman game are determined by economic force and not by the current situation of the foreign policy, then they will become clearer for all participants⁴⁶.

Russian concern is on friendly terms with its consumers. It builds gas pipeline to Germany with Germans, to Italy – with Italians. The strategy is quite clear, though choice of Total was unexpected for most of the observers. Probably it will help to increase Gazprom's share on the French gas market. In addition, France has enormous impact in the European Union, especially if to remember that all Brussels' bureaucracy is continuation of French bureaucracy⁴⁷.

Thus, as many Russian experts observe, the process of choosing partners for development of the Shtokman field has obvious political nature. Advanced technologies and offshore experience are also important factors, and there were many who predicted Norway as the second possible partner. As one Russian source notes, Norwegian participation is just

⁴³ Vedomosti, 10 July 2007

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

necessary⁴⁸. In addition, Norway has already been assisting Gazprom in the work on Shtokman for many years.

And, as it was expected, in October 2007 StatoilHydro was awarded a 24 percent stake in the development of the Shtokman field. Vladimir Putin phoned Norwegian Prime Minister Jens Stoltenberg about the news. The interesting thing is that the same happened when Total became Gazprom's partner – president Vladimir Putin contacted Sarkozy by the telephone. This fact shows again that politics plays an important role in the Shtokman project.

On the one hand, the Shtokman “fairy-tale” came back to Norway, but on the other hand American company ConocoPhillips was very disappointed by Gazprom's decision. There were two arguments in favor of ConocoPhillips. The first one was political – Russia needed good relations with the USA. The second one was economic – Russia was interested in American gas terminals where gas from Shtokman could be delivered⁴⁹. But probably the Norwegian technologies and experience played the conclusive role. Participation in the Shtokman field was the matter of national importance for Norway⁵⁰. In addition, efforts to get a stake in Shtokman became one of the reasons why Norway decided to merge two companies in order to strengthen the position of formal negotiations with Russia⁵¹. Even if we do not take into consideration Norwegian experience, its participation was appropriate in the view of Moscow's political interests. Russia and Norway have discussed the question of the border line in the Barents Sea in thirty years already and development of Shtokman can become a good instrument in settlement of these kinds of disagreements.

Under final agreement, Gazprom will have 51 percent in Shtokman Development Company where StatoilHydro will get a 24 percent equity interest and Total 25 percent. Gazprom will be the only owner of raw materials. Shtokman Development Company will be responsible for planning, financing and constructing the infrastructure necessary for the first phase of the Shtokman development and will own the infrastructure for 25 years from start of commercial production.

⁴⁸ Vremya Novostej, 13 July 2007.

⁴⁹ Vedomosti, 26 October 2007

⁵⁰ Vremya Novostej, 26 October 2007.

⁵¹ Ibid.

4.3. Experts' evaluations of negotiations on Shtokman

Negotiations on the Shtokman field provoked a lot of attention and here we will present some points of view expressed by Norwegian and Russian experts.

Arild Moe from Fridtjof Nansen Institute in Oslo asserts that there were two justifications, one negative and one positive, of Gazprom's decision to develop Shtokman without international partners. The negative one is that international companies could not give any assets that would correspond with the scope and reserve's quality of the Shtokman field. The positive is about the guarantee of gas delivery to Europe that was an evidence of European priority for Gazprom⁵². He criticizes Gazprom for lack of information on company's decision. He points out that it was obvious that the final resolution had not been handled in the Russian government. But president Putin, on the contrary, was good informed. Circumstances indicate that the final decision was met in president's administration and not in Gazprom itself. As Moe fairly comments, in the case of the Shtokman field the political power center had been involved all the time and, in addition, both Miller and company's president Dmitrij Medvedev are Putin's men⁵³.

Then, here arises a question about credibility of alternative plans. Arild Moe gives several reasons for Russia's cooperation with international companies. The first and, probably, the most important point is technology. The Shtokman field needs modern and complex technologies both for gas production and gas transportation. The major question is about the pipeline links between the field and the onshore facilities to be located at the port of Teriberka. Statoil hold the world record with 160 kilometers from their Snøhvit gas field to their LNG plant on Melkøya Island. But the Shtokman field is located 550 kilometers from land and it is doubtful that Gazprom will manage to build such a long pipeline on its own. Then, another argument is that financing and risk-sharing are also reasons for collaboration. And, finally, the last one is Norwegian experience with LNG-trade and access to market. All these three arguments seem to be right, but here we should underline once again the crucial role of Norwegian technologies and offshore experience. In addition, Russia has little offshore experience and experience with great field constructions. And Arild Moe is right when he states that there is a big question if Gazprom will manage to lead a complex offshore-construction on its own though it can buy necessary technologies. A "technology" is a complex amalgam of knowledge, skills and devices. Even where technology is defined in

⁵² Moe, 2006

⁵³ Moe, 2006

terms of information or knowledge, this knowledge resides, to some extent, in people and the skills they possess. That's why technology transfer is a complicated process and the knowledge involved in skills cannot be readily codified and transmitted independently of the people who hold these skills⁵⁴. As in our case with potential transfer of Norwegian technology to Russia, the international transfer of technology is likely to involve the international movement of labour. An important point here is that the skills necessary for production also include a range of ancillary skills in maintenance, repair, adoption and development of equipment. Beyond this, there are questions of capabilities in supervision, coordination and management⁵⁵.

Jakub Godzimirski, Senior Research Fellow at Norwegian Institute of International Affairs (NUPI) gives two rationales for cooperation between Norway and Russia. He marks that it is widely believed that in Putin's Russia the Western companies would be given access to Russia's mineral wealth first and foremost in a situation when the development of the new asserts would require competence that Russia does not possess. According to Godzimirski, this was also the main rationale for having accepted the Western bid for Shtokman. President Vladimir Putin gave his comments on the development of the Shtokman field where he emphasized that Norway had already developed infrastructure in the High North but at the same time their production sank. Thus, it would be natural to combine Norwegian and Russian efforts to develop Shtokman⁵⁶.

The second rationale is based on the speech of Jonas Gahr Støre, the Norwegian Foreign Minister. Støre underlined that developing Norway's relations with Russia was a cornerstone of Norwegian High North Policy. He added that Norway was interested in developing a new kind of relationship built on joint opportunities⁵⁷.

There were also some fears in Norway about energy cooperation with Russia. Fredric Hauge from Bellona, for instance, is convinced that Russian authorities can use Shtokman as a modern form of industry espionage. He points out that Russians do not have underwater technologies and will try to get access to the Norwegian technology and then will use it on other fields. That is a very interesting point of view but quite unfeasible⁵⁸.

⁵⁴ Bruland, 1989

⁵⁵ Ibid.

⁵⁶ Godzimirski, 2007, p.8.

⁵⁷ Ibid.

⁵⁸ <http://www.tu.no/nyheter/offshore/article54681.ece>

One Russian expert mentions that Gazprom needs support from European corporations in its expansion on the continent. Gazprom is trying to strengthen positions in Europe that is why it is choosing companies from European countries⁵⁹. For example, Total has no serious technical advantage compared to other western companies, so there must be political motives, supposes analyst Ekaterina Kravchenko⁶⁰.

It is necessary to mention that Norway has always been quite optimistic about its participation in development of the Shtokman field. Frederic Hauge, for instance, had no doubts that Statoil and Hydro would be among the companies Gazprom would choose as partners⁶¹. Norway's confusion about Gazprom's decision to develop the Shtokman field on its own was big, but it seems that Norway has never said good-bye to all hopes about cooperation with Russia on this project.

4.4. Media evaluations

A brief analysis of the titles of articles published in main Russian and Norwegian media about the Shtokman field shows that this topic caused various interpretations and valuations. Here we present just some central views expressed in Russian newspapers.

“Rossijskaya gazeta”, for instance, writes that a lot is expected from Russia, but little is offered in return⁶². It compares EU's version of the Energy Charter with a one-way street. None of potential partners could offer Gazprom assets that would satisfy the requirements of the Shtokman field. That's why Gazprom first decided to develop the field on its own, but participation of western companies could be reduced to field's service. Thus, Gazprom's decision is quite rational and has a reliable explanation. Indeed, why should Gazprom make concessions to western companies if their proposals do not meet the Russian requirements?

Gazprom's decision to develop the field on its own and revision of agreements about PSA got foreign investors into bewilderment. In reply Germany and France decided to create energy alliance within EU without participation of third countries, that is Russia. The president of the European Commission José Manuel Barroso suggested “to insist on Russia's ratification of the Energy Charter” in order to force Russia to give an opportunity to third countries to use oil and gas pipelines. As “Rossijskaya gazeta” further mentions, it has

⁵⁹ <http://www.rosbalt.ru/print/400961.html>

⁶⁰ Ibid.

⁶¹ <http://www.tu.no/nyheter/offshore/article54681.ece>

⁶² Rossijskaya gazeta, 24 October 2006.

become fashionable to be guided by terminology of “energy security”. The Energy Charter was approved in Europe, and Russia signed it but didn’t ratify. In a reply Russia was accused of using its energy power in political purposes. It is the same as to blame France for use of its perfumery power, notes the Russian newspaper⁶³.

The French Total announced that it would join the Shtokman development project on “partnership conditions” though it had rejected to collaborate with Gazprom after Alexei Miller’s statement in October 2006. So, as “Rossijskaya gazeta” asserts, the political excitement falls down very quickly, but business interests force to accept new game rules introduced by Moscow. Later the political explanation of choosing Total as a partner was underlined in several Russian sources. Experts were sure that the main argument in favor of Total was the “great policy”. Putin hoped that France would speak against the new Energy directive of EU, thinks analyst of East Gas Analysis Mikhail Korchemkin⁶⁴.

Another Russian newspaper, “Ekspert”, writes that there exist logical explanations of Gazprom’s decision on exclusion of international partners. First of all, two American companies were refused because of unsuccessful negotiations between the USA and Russia about Russia’s entrance into WTO. Then, the French Total didn’t get a stake because of its mistakes in development of another Russian field. And, finally, Statoil and Hydro were excluded because none of the companies managed to offer appropriate proposals⁶⁵. But, in spite of this fact, Norway still believes in strengthening its relationship with Russia. The whole article is focused on collaboration between Russia and Norway and cooperative relationship between these two countries. Norwegian point of view is presented in the report made by minister of foreign affairs Jonas Gahr Støre, where he underlines that Norway still believes that its experience and modern technologies will be useful for developing the recourses of the Barents Sea. And, what is more important, Støre mentions “several times that he is not going to comment “conjectures” about Russian political motives to develop the Shtokman field on its own”⁶⁶. In general, this article in “Ekspert” gives quite positive comments on Norwegian-Russian relationship thus not excluding possible cooperation in the North.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ekspert, 16 October 2006.

⁶⁶ Ibid.

4.5. Other points of view on Shtokman negotiations

The “wave” of negotiations on the development of the Shtokman field was also commented in many international sources. Here is the article “Shock as Russia goes solo on gas field” published on 9 October 2006 on BBC portal. The author is talking about “frustrated Americans”, “shocked Norwegians” and “the international reaction of dismay”. He asserts that the rejection of the international partners hit the Americans particularly hard, as its two contenders, Chevron and ConocoPhillips, would not only be denied a place on board the \$20 bn project. In addition, Gazprom signaled that the US would be denied much-anticipated gas supplies, which they had hoped would be shipped in liquefied form in super-tankers from Murmansk. He criticizes president Vladimir Putin for milking the Shtokman project for what it has been worth, having using the promise of participation in the project as a carrot in negotiations on a broad range of subjects – including slow-moving talks about Russia’s entry into the World Trade Organization (WTO). As it’s easy to see, development of the Shtokman field affects not only the energy relationship with international actors, but provokes many political questions. It is closely related to the economic growth of Russia in the last years and this fact provokes fear and gives concerns.

Another critical view on the Shtokman field is presented in the article by A.M.Samsam Bakhtiari (October 2006), who was a senior expert employed by the National Iranian Oil Company and advisor to the Oil Depletion Analysis Centre. Bakhtiari asserts that, in spite of Gazprom’s decision to develop the field’s resources on its own, the problem is that “no one believes that Gazprom (or even all of the Russian companies bunched together) can hope tackle the formidable challenges posed by the development of Shtokman”⁶⁷. He is quite pessimistic about the dates of project execution and says that those who predict that first phase will come on stream by 2010-2011 “either believe in Santa Claus or simply don’t know what they are talking about”. Bakhtiari underlines the importance of Shtokman for EU, since EU “soon being bent on getting every single cubic meter of gas it can possibly pipe”. Bakhtiari’s doubts about the dates of project execution seem to be true, but his statement about Gazprom as “the main problem for Shtokman” is arguably, though fair to some extent. He points out that Gazprom is a state within the state and that is why it placed political appointees in its top management (e.g. Alexey Miller, Dmitry Medvedev – the present president of the Russian Federation). But maybe, on the contrary, it’s a plus for Russia and Russian energy policy? In Bakhtiari’s opinion, this situation might be adequate for the

⁶⁷ Bakhtiari, 2006

political power to retain total control but highly detrimental for executing mega-projects which require multifaceted management skills and seasoned decision-makers. But probably, if not the dominating role of Gazprom, the development of the Shtokman field would have never started at all and Russia would have not increased its strength on the world energy arena.

The interesting thing is that Bakhtiari almost predicts the final partners of Gazprom. He argues that probably the best for Russians would be to get the Norwegians on board and also make room for the French Total. As we can see today, his predictions came true.

Thus, as we have discussed above, Gazprom itself and its constantly changing decisions about the fate of the Shtokman field provoked a lot of criticism and debates among international actors, first of all Norway.

The main focus of this part was on the events that happened in the period September 2005 – October 2007. This relatively short period of time has played an important role in the Shtokman's fate. Finally there were chosen two international partners and conditions of collaboration were worked out. As we have seen, Gazprom's decision was determined by economic as well as by political reasons. In spite of the original conclusion to develop the field on its own, it became obvious that international participation is needed, both in terms of financing, technological experience and developing energy relations with other countries.

In the next chapter we examine some parts of the Russian energy strategy to 2020 in order to view Russia's priorities in energy development.

5. Russia's Energy Strategy to 2020

Russia is a major player in world energy markets, it has more proven natural gas reserves than any other country, is among the top ten in proven oil reserves, is the largest exporter of natural gas, the second largest oil exporter, and the third largest energy consumer⁶⁸. So, Russian energy reserves play an important role in economic and political life of the country as well as help to strengthen its position as world energy power.

The Russian Energy Strategy is an important source of information about priorities and objectives of country's energy development and its collaboration with international actors. It may provide an answer to some contemporary questions and give an explanation of the most controversial and relevant problems of Russian energy policy. Here we will not discuss all aspects of the energy strategy but rather focus on some issues that seem to be the most relevant for our discussion.

The Russian Energy Strategy is a document which concretizes aims, tasks and the main trends of a long-term energy state policy during the concerned period of time⁶⁹. The document is divided into several central parts, but we will concentrate on the development of fuel and energy complex, gas industry, external energy policy and scientific, technical and innovation policy in fuel and energy complex. Probably this document will help us to understand better the role of the Shtokman field in the Russian energy strategy and the role of natural resources in the process of creating a dynamic economy.

We start with some factors that affect functionality and development of the fuel and energy industries and at the same time pose threat to the energy safety of Russia:

- high degree of wear of the main funds (more than 50%);
- remaining shortage of investment resources in the fuel and energy sectors (except for the oil industry) and their misallocation. With the high investment potential of fuel and energy complex industries, the influx of foreign investments is less than 13% from financing of all the capital investments. At the same time 95% of these investments account for the oil industry;

⁶⁸ Gelb, 2006

⁶⁹ Energeticheskaya strategiya Rossii na period do 2020 goda, 2003

- lag of the productive potential of fuel and energy complex from the world science and technology level;
- lag of the development and objective growth of costs for developing prospective raw materials base for hydrocarbons production, especially regarding the gas industry;
- lag of the market infrastructure and civilized, competitive energy market;
- remaining high stress on the environment resulting from fuel and energy industry activity;
- great dependence of oil and gas sector, and as a result of state incomes, on the world energy market conditions;
- absence of a developed and stable legislation that would fully take into account all the specifics of fuel and energy industries functionality⁷⁰.

As it is stated in the document, there are two main problems that have to be solved in order to provide energy safety of the country. First, it is necessary to upgrade the technological base of the fuel and energy complex and to provide the reproduction of its manufactured resource base. In the current decade, because of limited nature of investments (except for the oil industry) the technological modernization will first of all take place at the existing industry capacities, and later on by means of its cardinal reconstruction and creation of new capacities. Then, the pattern of consumption and distribution of fuel energy sources will have to be modified. So, as it is easy to see, there are many large-scale issues that need further development and analysis. Collaboration with other countries, most likely, will play a crucial role in this process. In order to address this aspect, it is necessary to draw attention on priorities in the external energy policy of Russia.

As it is stated in the Russian energy strategy, the state energy policy must be directed on the change from the role of supplier of raw resources to the role of substantive member of the world energy market. It is emphasized that the strengthening of Russian positions on the world oil and gas markets is a strategically important task nowadays. As we have discussed in the first chapter, Gazprom plays and will play a crucial role in this process. It has an important function as an instrument of strengthening Russian position in the world market.

⁷⁰ Ibid.

There is a new factor for the period up to 2020 – the participation of Russia, as a large supplier of energy resources, in securing the world energy safety. The strategic interests of Russia are as following: forming of the common energy and energy and transport infrastructure in the regions of Europe and Asia, development of the international energy and transport systems, providing the indiscriminately transit of energy. Then, special attention focuses on Russia as the greatest producer, exporter and consumer of energy resources in the world. It is essential to the country to have a dialog both with the countries-producers and countries-consumers, taking part in the work of international energy conferences, cooperating with the industrially-developed countries on the basis of declaration about cooperation with IEA and in the framework of G8, cooperating with the leading countries-exporters of oil – independent and the members of OPEC in order to provide the fair prices for energy resources. It is underlined that the market of Central and Western Europe remains one of the greatest markets in the forthcoming 20 years, while USA can become the long-term market for sale of oil industry production. The American capital can become the source of investments in the development of industry and export trends of the Russian oil transport. Besides, the United States is a prospective sale market of Russian energy atomic industry, and later - LNG⁷¹. Here the Shtokman field can be viewed as an example of how Russian energy strategy is being realized in practice. Both American and European markets are of great importance for Russia, but, as we have mentioned in the previous chapter, choosing European actors for the developing of Shtokman illustrated the fact that Europe was the main priority.

For the years ahead, the export of energy resources will remain the key factor both for the development of national economy and for the economic and political position of Russia in the world community. Integration of Russia with the world economy, perspectives of entry into The World Trade Organization (WTO), liberalization of gas market in Europe and changes in the foreign market are requiring reconsideration of tactics not only of Russian energy companies, but also of the state as a whole⁷². The energy strategy provides the development of a constructive dialog in energy area with European countries which are the main consumers of Russian fuel and energy resources nowadays. The forms of collaboration will include realization of joint investment projects, first of all of energy transport, and a broad involvement of European investors into the projects of development of oil-and-gas production on the Russian territory. In the second half of the forecasted period Russia's entry into the world market of Liquefied Natural Gas (LNG) is possible.

⁷¹ Ibid.

⁷² Ibid.

The markets of Western and Central Europe are mentioned as one of the most prominent in the forthcoming 20-25 years. It is essential to continue a constructive dialog that is aimed at broadening the market of Russian energy resources both with the European Union and other European countries. Cooperation may include realization of common energy projects, experience exchange in the area of application of the achievements of science to production and joint operations in energy-saving. Organization of parallel functioning of Russian power grid and European power grids is provided. It should secure equitable access for Russia to the European market of total energy system, development of trade relations, realization of dimensioned system effects and a qualitative new level of cooperation in power industry. USA may become a long-term market for production of Russian oil industry and American capital – a source of investments into the industry and export directions of Russian oil transportation. Again, it is stated in the document that in the future USA may become a potential market of LNG⁷³. Strong positions of Russia on the world energy markets will not only provide stable income from export production of fuel and energy complex, but also essentially strengthen economic and political positions of the country in the world.

Example with the development of the Shtokman field illustrates how aims and purposes of the Russian Energy Strategy are realized in practice. Shtokman can be viewed as an important tool in the process of their realization. Cooperation with Russia and development of the Shtokman field in particular, is of great importance for Europe since Russia is the dominant natural gas supplier to Europe. Some countries are entirely or largely dependent upon Russian natural gas. Of Russia's total natural gas exports of 7.1 trillion cubic feet (tcf) in 2004, 6.7 tcf went to European countries, including destinations in Eastern Europe. Russian natural gas is imported in large quantities by European countries and represents very high percentages of the total gas consumption of a number of them (See **Table 1**)⁷⁴.

⁷³ Ibid.

⁷⁴ Gelb, 2007.

**Table 1. Dependence Upon Russian Natural Gas
by Selected European Countries, 2004**

Country	Natural Gas Imports from Russia	
	Quantity (billion cu.ft./yr)	% of Domestic Consumption
Germany	1,290	39
Italy	855	31
Turkey	506	65
France	406	24
Austria	212	69
Poland	212	43
Netherlands	94	6
Greece	78	82
Sweden	39	b
Belgium	7	1
Denmark	a	b
Ireland	a	b
Portugal	a	b
Spain	a	b
United Kingdom	a	b

^a. Zero or less than 500 million cubic feet.

^b. Zero or less than 0.5%.

As we can see from the Table 1, France is on the top among the countries that import natural gas from Russia. Thus, France's interest in Shtokman is quite explainable. Thus, as we have already discussed in the first chapter, cooperation with Total on Shtokman is mutually beneficial. In the Russian Energy Strategy up to 2020 the importance of integration of Russia

with world economy is emphasized, as well as plans about entry into WTO. So, Shtokman is a step forward to realization of these plans – cooperation with French Total can provide support in Gazprom's expansion in Europe (since France has a large impact on EU politics) and contribute to Russia's entry into WTO. In addition, decision on delivering gas from Shtokman to European market and not American revealed Russian priorities.

Norway can be interesting for Russia for some other reasons. It was mentioned above that Norway possesses modern and complex technologies and in addition has a great experience of developing offshore fields. In that way collaboration with the northern neighbor is of great importance for Russia, especially with respect to the Shtokman field.

The eighth part of the Russian energy strategy focuses on scientific, technical and innovation policy in the fuel and energy complex. It is not very long and mostly points to the priorities of this policy and methods of their achievement within the framework of Russia. Not so much attention is paid to the necessity of international collaboration in this area. In the document we find that one of the priorities of scientific, technical and innovation policy is the use of potential for international collaboration for application of the best world achievements and leading out domestic development on a higher level⁷⁵. It is also mentioned that the important task in the area of international scientific and technical collaboration is the creation of favorable conditions and mechanisms for its development. Thus, state support of international collaboration is needed in order to realize the major innovation projects of national significance⁷⁶. These statements are rather vague and not specific. As it is easy to see, the development of scientific, technical and innovation activity mostly takes place within the national borders, though not excluding international collaboration in this area. Among the problems of the Russian energy complex we mentioned the need for technological modernization and upgrading of the technological base. But it seems that the process of innovation and competence development is not the central issue in the document. Still, the political perspective is the dominant in the Russian energy strategy. The development of the Shtokman field can be sooner viewed as a political instrument in the Russian energy strategy and to a lesser degree as an instrument for building up a national innovation system. Though technological competence of international actors is of great importance for Russia (in our case for the successful development of Shtokman), the political aspect seems to be the central.

⁷⁵ Energeticheskaya strategiya Rossii na period do 2020 goda, 2003.

⁷⁶ Ibid.

Thus, here lies the difference between the Norwegian strategy that we will discuss in the next chapter and the Russian energy strategy.

6. The economic perspective on the Shtokman development

In the previous chapter we presented the political perspective on the development of the Shtokman field. This topic has been discussed for a long time now and there have been published many articles about the political aspect of the Shtokman project. Thus, this debate around Shtokman is well-known. We pointed to the obvious political nature of the decisions on Shtokman and underlined that the project is a part of world energy “game”. But here arises another, probably the most interesting and not so widely discussed question – can the Shtokman field be used for achieving other goals as well? Is it just a political instrument or maybe a part of the Russian strategy which is aimed at developing technology, knowledge and competence? In the chapter about the Shtokman field it was mentioned that Russia does not possess necessary technologies for the development of such complex and big fields as Shtokman. Thus, international experience and competence are needed in order to develop the Shtokman field. From this perspective, Russia can use its natural resources for building up national competence and technology and developing innovation system. It is interesting to discuss to what extent the project is used in order to enhance the technological capabilities in Russia and to develop many parts of Russian economy and industry. In other words, we will try to view this energy game from another perspective. On the one hand we have Russia and its natural resources and on the other hand we have international actors that possess necessary technology, knowledge and competence for developing Russian resources. Thus, the point of contact seems to be obvious. But will Russia use this opportunity for building up its national competence and innovation system? That is a very complicated question and thus it is interesting to discuss how abundant natural resources may become a “blessing” or “curse”.

6.1. Abundant natural resources – “curse” or “blessing”?

Both Norway and Russia are rich in natural resources and in the 1950s and 60s economists generally saw abundant natural resource endowments as facilitating a country’s rapid development⁷⁷. But in spite of this fact, Russia and Norway are on different levels of economic development today, where Norway occupies a very high position with the greatest GDP among all OECD countries⁷⁸. In the last two decades economists have come to see rich natural resource endowments as a “curse” or “precious bane” that inevitably undermines

⁷⁷ Ahrend, 2006, p.5.

⁷⁸ Wicken, 2008, p.25.

development and slows economic growth⁷⁹. As Sachs and Warner mention, in the nineteenth and twentieth centuries resource-poor countries such as Switzerland and Japan surged ahead of resource-abundant economies such as Russia⁸⁰. But, however, many of the world's most developed countries – Australia, Canada, Scandinavian countries, and the United States have successfully developed on the basis of their resource base. Though having a rich natural resource base has some obvious advantages, resource-based development presents important challenges.

There are several theoretical approaches to the problem of natural resource “curse” but there is no common and consistent theoretical argumentation of correlation between sustained low growth and abundant natural resources. Researches point to different explanations, both political and economic. Nevertheless, there is one level where many theories seem to have a common basis – there is a premise in analysis that resource-based industries to a less extent contribute to dynamic changes and development tendencies in economy that are necessary for sustained growth⁸¹. According to Wicken, this is related either to the fact that resource-based industries do not create dynamic linkages to other parts of economy or to the lack of learning processes in resource-based industries. Some theories mark that a lot of elements of resource-based industries in economy lead to reduced learning and innovation, both in this type of industry and in economy in general⁸².

The most common explanation of correlation between industry structure and sustained economic growth is connected with the term “Dutch disease”. The term originated in the Netherlands during the 1960s, when the high revenue generated by its natural gas discovery led to a sharp decline in the competitiveness of its other, non-booming tradable sector. Despite the revenue windfall the new discovery brought, the Netherlands experienced a drastic decline in economic growth. This economic paradox has since been recognized as the situation in which a booming sector adversely affects the performance of other sectors of an economy, and in particular, the non-booming tradable sector⁸³. Long dependence of an economy on natural resource exports weakens incentives for developing manufacturing industries and new technologies. But exactly the technological progress and not accumulation of production factors serves as source for sustained growth. As Hirschman argues, when decline in manufacturing sector is considered as a problem, then it is connected to the

⁷⁹ Ahrend, 2006, p.2.

⁸⁰ Sachs and Warner, 1995, p.2.

⁸¹ Wicken, 2008, p.26.

⁸² Ibid.

⁸³ http://pgpblog.worldbank.org/the_dutch_disease_theory_and_evidence

assumption that manufacturing contributes to a more dynamic development than resource-based sectors⁸⁴. He asserts that the generation of inter-industry linkages in economy is the basis for development and growth and that resource-based industries create less such linkages. As Wicken observes, these theories emphasize that learning and innovation are unequal in different parts of economy.

Sachs and Warner support Matsuyama's conception that differences in dynamics occur because learning processes vary between different sectors in economy. The central argument is that industry has increasing returns to scale in education or job training. They use a model where there takes place no learning in the resource-based part of economy. The conclusion is that an economy with great natural resources sector and small manufacture sector has a lower growth and dynamics than an economy with great manufacture sector⁸⁵.

Chris Freeman is a representative for another approach based on the statement that it is not so much *what* is produced, as *how* it is produced⁸⁶. According to this theory, the dynamic process of productivity growth arises from innovation and adoption of new technologies that propels development. It is pointed to the world's most developed countries, Australia, Canada, the United States and Scandinavian countries that have successfully developed on the basis of their natural resources. Success has less to do with what a country produces in particular, and everything to do with the way in which it produces it. In particular it depends on establishing an environment that enables innovation and the adoption of technologies⁸⁷.

6.2. Innovation and systems of innovation.

Innovation and adoption of new technologies lead to dynamic process of productivity growth, which in its turn leads to development. Thus, it is essential to understand how innovations happen. First of all, it is necessary to mention that innovation is a complex phenomenon and, according to Kline and Rosenberg, there is no single correct formula, but rather a complex of different ideas and solutions that are needed for effective innovation⁸⁸. Economists have analyzed innovation as a "black box" – a system containing unknown components and processes. As Fagerberg points out, the processes that are happening obviously have to do with learning, which occurs in organized settings, such as groups, teams,

⁸⁴ Wicken, 2008, p.27.

⁸⁵ Wicken, 2008, p.28.

⁸⁶ Smith, 2008, p.13.

⁸⁷ Ferranti, Perry, Lederman and Maloney, 2002, p.52.

⁸⁸ Kline and Rosenberg, 1986, p.279.

firms and networks⁸⁹. Thus, innovation process involves many actors and firms do not normally innovate in isolation, but in collaboration and interdependence with other organizations. All these actors are components of systems for the creation of knowledge and innovations emerge in such “systems of innovation”⁹⁰. Nelson and Freeman focus on the national level and “the national system of innovation, which they define as “the networks of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies”⁹¹. Edquist gives a more general definition of (national) systems of innovation which includes “all important economic, social, political, organizational, institutional and other factors that influence the development, diffusion and use of innovations”⁹². He also notes that there exist other specifications of systems of innovation. Carlsson and Stankiewicz, for instance, focus on “technological systems”, arguing that these are unique to technology fields. They define them as “a dynamic network of agents interacting in a specific, economic/industrial under a particular institutional infrastructure and involved in the generation, diffusion and utilization of technology”⁹³. Breschi and Malerba present the sectoral approach that focuses on a group of firms that develop and manufacture the products of a specific sector and that generate and utilize the technologies of this sector. In addition, Cooke and Braczyk and others have developed the concept of “regional innovation system”⁹⁴. But, as Edquist asserts, all these perspectives may be clustered as variants of a single generic “systems of innovation” approach.

Systems, as networks, consist of a set of activities or actors that are interlinked. Thus, linkages between them are essential for system’s functioning and if one complementary component is lacking, or fails to progress or develop, this may block or slow down the growth of the entire system. Powell and Grodal define interorganizational networks as a means by which organizations can pool or exchange resources, and jointly develop new ideas and skills⁹⁵. They argue that in fields where scientific or technological progress is developing rapidly, and the sources of knowledge are widely distributed, no single firm has all the necessary skills to stay on top of all areas of progress and bring significant innovations to market. Thus, networks are of great importance for innovative activity and can become the locus of innovation, as the creation of knowledge is crucial to improving competitive position.

⁸⁹ Handbook, 2005, p.13.

⁹⁰ Handbook, 2005, p.182.

⁹¹ Fagerberg, 2003, p.39.

⁹² Handbook, 2005, p.183.

⁹³ Fagerberg, 2003, p.42.

⁹⁴ Handbook, 2005, p.184.

⁹⁵ Handbook, 2005, p.59.

In our case, linkages of oil sector to other sectors, such as engineering, capital goods, machine producers, research organizations are important components of this system of innovative activity. Wicken notes that resource-based industries are great consumers of goods and services from other sectors. Especially it refers to oil and gas sector which is both a customer of services (for example, transport and other business services) and manufactured goods⁹⁶. Thus, dynamics in resource-based industries lies in generation of technology and knowledge development and economic activity in other sectors.

Blomström and Kokko's work on Scandinavia and Irwin's and Wright's work on the United States show that development in these countries took place in a context of rich networks of universities, research institutes, and high levels of human capital that led to an incessant process of innovation⁹⁷. In the article "From Natural Resources to the Knowledge Economy: Trade and Job Quality" Ferranti, Perry, Lederman and Maloney discuss, in addition, the Scandinavian experience of building strengths in natural resources. They show that the Scandinavian experience with forestry highlights not only another case of sustainable growth based on natural resources, but also the vital importance of knowledge networks or clusters to generate productivity growth, competitiveness and new ideas⁹⁸. Forestry offered downstream demand for both paper and pulping technologies, as well as transport products developed by Saab and Volvo in Sweden.

The Norwegian example demonstrates how abundant natural resources can become a "blessing" for country's economic development. Resource-based technology and knowledge development have been moved by knowledge organizations, technology enterprises, finance institutions, capital suppliers and others who were involved in this process. It has generated growth of what we can describe as clusters or innovation systems which have functioned as dynamic elements in Norwegian economy⁹⁹. Therefore it is interesting to discuss the Norwegian example in more details.

6.3. Norway's "blessing"

Development of the Norwegian oil industry is perceived as a process when Norwegian authorities and Norwegian economy developed knowledge and abilities that made it possible

⁹⁶ Wicken, 2008, p.38.

⁹⁷ Ferranti, Perry, Lederman and Maloney, 2002, p.53.

⁹⁸ Ibid.

⁹⁹ Wicken, 2008, p.32.

to master oil industry on its own. The building of oil industry in Norway was a huge transfer project of techniques, knowledge, organization and technologies that from the starting point were controlled and used by the international oil companies¹⁰⁰. Not only new technology was transferred, used and adapted to a new geographic area but also Norwegian actors worked out competence for taking part in the search, production and distribution of petroleum. Thus, Norway can serve as a model of how an innovation system looks like in practice.

At first, the Norwegian strategy was about getting foreign companies to Norway. This process was called “fornorskningen” (“making it Norwegian”)¹⁰¹. As Ryggvik observes, when in the beginning of the 1960s international oil companies wanted to start up oil explorations in the North Sea, there were positive attitudes towards foreign multinational companies in Norway¹⁰². He points to the complicated economic situation in Norway after the economic recession in 1958, when unemployment was increasing for the first time after the war. The capital formation was not big enough to create the necessary growth in employment. Therefore international capital was seen as an important alternative. In the spring 1959 there was established a special committee for attracting international capital to Norway. Norwegian authorities worked out an institutional framework, or contract, between the Norwegian state and international oil companies in order to lead the technology transfer and the development of the Norwegian oil policy. Active state involvement has played a crucial role in the process of building up the Norwegian oil industry. Many sociologists have emphasized how Norwegian oil policy has changed keeping time with correlation of forces between the Norwegian state and international oil companies. The Norwegian radical and self-confident state has at the time had an objective of securing the biggest share of oil rent. Thus, “fornorskningspolitikken” is viewed as a self-evident lever for achieving this goal¹⁰³.

Gradually, new knowledge and technologies were taken into use and it led to establishing and developing of new fields. At the same time there were created new methods and equipment that made it possible to develop a growing part of the resources. Thus, the first stage in Norwegian oil activity was adaptation to a new innovation system. The network between different actors was established and it provided a basis for innovative processes. The network gradually became an industrial cluster¹⁰⁴. Both public institutions and Norwegian private actors operated in such a way that they represented “national capabilities” so that it

¹⁰⁰ Olsen and Sejersted, 1997, p.79.

¹⁰¹ Olsen and Sejersted, 1997, p.14.

¹⁰² Ibid., p.29.

¹⁰³ Ibid., p.27.

¹⁰⁴ Ibid., p.82.

was possible to use them as a basis for subsequent development. Engen uses the concept of “recipient competence”(mottakerkompetanse) which is in relation with national capabilities notion. Recipient competence consists of several knowledge fragments that more or less function together and form national prerequisites for receiving and adopting a technological system such as an oil industry.

Technology transfer was a crucial part of building up oil industry in Norway. The concept of transfer refers not only to a sender but also to a recipient. Thus, technology transfer includes the description of how the technologies are being received and applied to a new environment. It means that new persons and organizations have mastered the ability of using the transferred techniques. The problem is that it is necessary to acquire sufficient knowledge for applying new technology from other countries¹⁰⁵. As Engen points out, on later stages it will become relevant to develop the technology further because gradually it will be made new demands to adaptation. One of the prerequisites for this is the process of technology transfer itself. It is essential to possess enough knowledge about technology’s principles of operation so that new actors will be able to undertake innovations and improvements. That’s what is called “technological capabilities”.

Technological development is a process in which many actors take part on different levels. Interaction between actors can establish technological systems¹⁰⁶. As Engen notes, these interaction processes vary from industry to industry and from nation to nation. In some sectors research institutions and universities play the central role, in others not. Through transfers and direct control the technology policy is central in some industrial systems, but is absent in others. At the same time variations depend on the type of industry and national context and in some contexts we can talk about national innovation systems. The quality and effectiveness of country’s public infrastructure, legislation, financial institutions and objectives of the economic policy will be crucial for establishing of innovation systems.

The “fornorskningspolitikken” that we mentioned above was strengthened by “en norsk teknologisk stil” (Norwegian technology style)¹⁰⁷. As Francis Sejersted mentions, the history of the Norwegian style is the history of how imported and domestic competences are combined in the development of an own technological concept. Development of the technological competence was in many respects a question of working out a strategy for getting out of the trap which occurs when those who have competence get assignment while

¹⁰⁵ Ibid., p.81.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid., p.17

others can develop this kind of competence only if they get assignment. It was of great importance to build up an oil industry that in the future could come out into the world market on its own.

The most important tool in this “fornorskningspolitikken” was Statoil, a 100% state owned company¹⁰⁸. As Helge Ryggvik maintains, Norway has managed to ensure the national control over oil activity through developing a strong independent oil industry, not less by establishing of the governmental Statoil¹⁰⁹. In that way it has been guaranteed that an essential part of oil rent has stayed in Norway. Then it has also been secured that a part if this income goes to the nation and not just to the rich elite. Ryggvik points out that it is a fact that many oil producing countries in the poor parts of the world have taken Norway as an example. From the moment when Statoil with financial support from Norwegian authorities was able to do everything on its own, Norway was already in a totally different situation for negotiations with international actors.

Thus, Norwegian example demonstrates how abundant natural resources may become a “blessing” for a country’s economic development. As Wicken concludes, this is to a great extent a result of a long history of how a country has developed its competence of how geological and biological resources can be mapped and used. In addition, the international technological development has generated new natural resources which Norwegian society was able to use¹¹⁰.

6.4. Shtokman’s blessing?

The Norwegian example demonstrates how a country uses its natural resource endowment for building up dynamic economy and innovative industry. Norway did not possess necessary technologies and competence but it managed to work out a strategy for collaboration with international actors who could contribute a lot to the development of the Norwegian oil industry. In our case with the Shtokman field Russia seems to be in the similar situation. Development of Shtokman requires complex technologies and high level of competence. The interesting question is whether we can find the strategy similar to the Norwegian example in the Russian energy policy. As Jakub Godzimirski mentions, the Norwegian state’s oil and gas exploitation policy, its control of the energy sector and its

¹⁰⁸ Ibid., p.15.

¹⁰⁹ Ryggvik, 2006

¹¹⁰ Wicken, 2008, p.35.

policy of saving oil and gas revenues are often presented in the Russian media as an example to be followed¹¹¹. Thus, it is interesting to discuss what is necessary for the development of Shtokman and what will have to be built up.

Many experts point to the complicated technological structure that is needed for successful development of the Shtokman field. The technical difficulties in developing the Shtokman field are substantial (see chapter about Shtokman). The distance to shore, great water depths, drifting ice and high waves can pose problems. Thus, Gazprom needs the participation of international companies with offshore experience, both for technical and financial aspects of the project. Multinational enterprises (MNEs), in our case StatoilHydro and Total are important instruments for building up Russian competence. MNEs affect the development and diffusion of innovations across national borders through a number of mechanisms, among which is FDI, for instance¹¹². MNEs are central economic actors in international technological and scientific collaborations. In the Shtokman project their work will include improvement of the geological data, development solutions, and commercial evaluations of the market for gas and condensate from the field¹¹³. It is anticipated that the Shtokman field will require three or four phases for full field development. The development will include up to four platforms. It is estimated that the total number of wells required to develop the Shtokman field will be around 156, which breaks down to 144 production wells, three monitor wells and nine reserve wells. In addition, it has been estimated that the development will require four 42in pipelines to be laid between the offshore platforms and the receiving facilities at Teriberka, 565km away¹¹⁴. Thus, the cooperation between different actors who possess different types of knowledge and competence is of great importance for the development of the field. Rich networks, which include research institutes, technological enterprises, finance institutions – which will develop the technological basis for the development of the field – are essential for the innovative process. Resource-based technology and knowledge, moved by these actors, will generate growth. Thus, when components of this innovation system are already defined, it is necessary to establish linkages between the actors in order to make the whole system function. The environment of learning, research and innovation, in which the process of resource-led development is embedded is significant.

¹¹¹ Godzimirski, 2007, p.6.

¹¹² Handbook 2005, p.318.

¹¹³ Moe, 2004, p.18.

¹¹⁴ <http://www.offshore-technology.com/projects/shtokman/>

The ability to adapt and disseminate new technologies is another aspect of innovation process. In order to build up competence for the development of Shtokman, Russia has to absorb new ideas and apply them in the natural resource area. That is what is often called absorptive capacity, which is essential for innovative process. Absorptive capacity is defined as the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial ends¹¹⁵. In addition, in order to be able to absorb outside knowledge it is necessary to have prior related knowledge. Though it may be not possible to systematically create innovations, it is possible to prepare for technological and commercial opportunities and challenges that will occur¹¹⁶. Ability to absorb new knowledge is directly connected with the “catch-up” question. “Catch-up” relates to the ability of a single country to narrow the gap in productivity and income vis-à-vis a leader country¹¹⁷. As Fagerberg and Godinho observe, only countries that have invested massively in the formation of skills and R&D infrastructure seem to be able to catch up (while those who have not fall further behind). Thus, in order to be able to develop the Shtokman field Russia has to invest more into R&D activities and enable network of educational institutions. But, the Russian energy strategy to 2020 that was discussed above does not give so much consideration to this aspect. It rather underlines the political aims of energy development and international politics energy game. In addition, the debates around Shtokman are mostly focused on the political perspective.

¹¹⁵ Cohen and Levinthal, 1990, p.128

¹¹⁶ Ferranti, Perry, Lederman and Maloney, 2002, p.57.

¹¹⁷ Handbook 2005, p.514.

7. Conclusion and suggestions for further research

This thesis attempted to explore the political aspect of the development of the Shtokman field and then analyze its economic perspective. The first part of our discussion was focused on the world energy context and the role of Russia in it. From the point of view of strategic interests Russia is viewed as a key unit in the system of world energy security. It plays and will continue to play one of the main roles in supply and sale of carbohydrates in the world. Thus, situation in Russian energy policy and development of new fields in particular is important for many international actors.

The meaning of natural resources as the most important economic and political factor in sustainable development of the country is emphasized in Vladimir Putin's academic paper. His work has a lot in common with the Russian Energy Strategy to 2020. Both documents mention the importance of natural resources for Russian energy policy and foreign policy. Thus, the political perspective seems to be central in the Russian energy strategy.

The "wave" of negotiations on the Shtokman field illustrates that Gazprom's decision on Shtokman was determined by economic as well as by political reasons. In spite of the original conclusion to develop the field on its own, it became obvious that international participation is needed, both in terms of financing, technological experience and developing energy relations with other countries.

The Russian Energy Strategy to 2020 mostly emphasizes the importance of strengthening of Russian positions on the world oil and gas markets. The eighth part of the energy strategy that focuses on scientific, technical and innovation policy in the fuel and energy complex does not pay so much attention to the necessity of international collaboration in this area. The statements about priorities of scientific, technical and innovation policy are rather vague and not specific. The development of scientific, technical and innovation activity mostly takes place within the national borders, though not excluding international collaboration in this area. Thus, it seems that the process of innovation and competence development is not the central issue in the Russian Energy Strategy to 2020. Though technological competence of international actors is of great importance for Russia (in our case for the successful development of Shtokman), the political aspect seems to be the dominant one.

The last part of this paper demonstrated how Norway used its natural resource endowment for building up dynamic economy and innovative industry. Norway did not

possess necessary technologies and competence but it managed to work out a strategy for collaboration with international actors who could contribute a lot to the development of the Norwegian oil industry. In our case with the Shtokman field Russia seems to be in a similar situation. In order to follow the Norwegian example and generate economic growth, Russia has to build up its national innovation system. The cooperation between different actors who possess different types of knowledge and competence, rich networks, which include research institutes, technological enterprises and finance institutions – all these components are essential for the innovative process. But, the “development” strategy” seems not to be central in Russian policy. The potential of the Shtokman project is enormous and the main question is whether it can become a “blessing” for Russian economy and industry. It may also happen that the country’s economy will follow a path close to the “resource curse” development – and therefore in the longer run make Russia weaker. Whether Russia is able to use its natural resources (the Shtokman field) in such a way that they will generate sustainable growth of Russian economy in the future, is a question for further research.

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