

Master Thesis  
Bodø Graduate School of Business/MGIMO University

# **LOST IN TRANSLATION?**

*Nordic-Russian Cooperation on renewable energy:  
Experiences and perspectives*

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## **ABSTRACT**

This thesis sheds light on Nordic-Russian cooperation on renewable energy and the opportunities and challenges experienced by ten Nordic actors located in Norway, Sweden, Denmark, Finland and Russia. The respondents, all of whom are involved in various types of Nordic-Russian cooperation on renewable energy, represent companies, the authorities, one NGO, one university and one financial institution.

The focus is on the idea, process and structure of cooperation, based on theory related to renewable energy and management theory on strategic cooperation. Finally, the opportunities and challenges are examined in terms of Czarniawska and Joerge's model (1995) "travel of ideas".

The main findings from Nordic-Russian cooperation on renewable energy as experienced by these respondents indicate that perceived opportunities are mostly related to Russia's sizable potential in energy resources, mainly hydro, wind and bioenergy. As the idea seems well institutionalized among the respondents, it might represent an opportunity for further cooperation on renewable energy. However, despite the many opportunities, the respondents have also experienced various challenges, especially in relation to cultural differences, corruption and bureaucracy. These barriers appear to hinder the concept of Nordic-Russian cooperation in materializing into concrete action and business development. Indeed, it would appear that something gets "lost in translation".

## PREFACE

This thesis is the final part of a great academic journey that has been full of challenges, hopes and dreams in relation to the doors this Master of Science in Energy Management degree could open. In many ways, this thesis captures the essence of my Norwegian-Russian Energy Management joint degree, because it unites three major areas of focus: energy, Russia and cooperation.

The work with this thesis has been exciting, demanding and also fun, but most of all exceptionally interesting. The years at Bodø Graduate School of business have definitely taught me:

*- There is no limit to what you can learn!*

It all began with a strong and determined interest in Norwegian Institute of International Affairs (NUPI) and its areas of research. I was fortunate enough to be granted a Student Fellowship at the Energy Programme, and excited to hear that they needed my contribution within the field of Nordic-Russian cooperation on renewable energy. The results of the thesis will be included in a project carried out by NUPI on renewable energy and efficiency in Russia. My sincere thanks go to Indra Øverland, Head of the Energy Programme at NUPI, for giving me this opportunity, for including me at the institute in such a good way, and for the help, time and engagement he has provided. Secondly, I wish to thank my advisor Anatoli Bourmistrov at Bodø Graduate School of Business, for suggestions and good contributions, not to mention all the excellent ideas he has offered.

Warm and grateful thanks go to the respondents who were willing to give of their time and knowledge and share their experiences with me. My sincerest thanks go to my colleagues at NUPI, as well as the staff at the Energy Management Programme in Bodø and MGIMO in Moscow. Further, I wish to thank my family - my mother and sister for keeping my spirits up through encouraging conversations, and in particular my Father, for guidance and advice and for helping me see some good solutions.

And last but not least, let me thank the love of my life, *John*,  
for your affection and understanding, for your support, help and patience.

This dream was never to be lived without you.

## **SAMMENDRAG**

Formålet med følgende oppgave er å belyse muligheter og utfordringer for Nordisk-russisk samarbeid innen fornybar energi. Dette blir gjort ved å studere erfaringer fra ti nordiske aktører, lokalisert i Norge, Sverige, Danmark, Finland og Russland. Respondentene er alle involvert i ulike typer samarbeid innen fornybar energi mot Russland, og er representert av bedrifter, myndigheter, en miljøorganisasjon, et universitet, samt en Nordisk finansinstitusjon.

Studien fokuserer på idé, prosess og former ved samarbeid og er fundert på litteratur vedrørende fornybar energi og bedriftsøkonomisk samarbeidslitteratur. I tillegg fokuseres det på muligheter og utfordringer innen dette området i sammenheng med Czarniawska og Joerges modell (1995) “travel of ideas” som er hentet fra institusjonaliserings teori.

Hovedfunnene fra denne studien indikerer at mulighetene hovedsaklig knyttes til det enorme, russiske potensialet for fornybar energi, spesielt innenfor vannkraft, vind og bioenergi. Ideen om Nordisk-russisk samarbeid innen fornybar energi ser ut til å være anerkjent og dermed institusjonalisert blant respondentene, hvilket kan representere gode muligheter for videre utvikling av Nordisk-russisk samarbeid. På tross av de mange mulighetene som påpekes, opplever respondentene i denne studien betydelige utfordringer knyttet til Nordisk-russisk samarbeid innen fornybar energi. Disse er i hovedsak knyttet til kulturelle forskjeller, korrupsjon og byråkrati. De opplevde barrierene ser ut til å hindre ideen om Nordisk-russisk samarbeid innen fornybar energi i å materialisere seg i form av konkrete handlinger og bedriftsresultat.

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## **GLOSSARY**

### **Carbon credits**

Carbon credits are noted in several “currencies” that all have the same characteristics; one ton of CO<sub>2</sub> emissions tCO<sub>2</sub>e”. The owner of the carbon credit has the right to emit 1 tCO<sub>2</sub>e of any of the six greenhouse gases covered by the Kyoto Protocol.

### **Duma**

The Russian government

### **Geothermal resources**

Referred to as the internal heat from the earth IEA (2005)

### **Globalization**

Tendency for the world economy to work as one unit, led by large international companies doing business all over the world

### **Institutionalization**

Is when a norm, a concept, a social role becomes embedded within an organization

### **Joint venture**

A new business activity in which two or more companies have invested together (Longman 2004)

### **Kremlin**

Historic fortified in the heart of Moscow and the official residence for the President and the presidents administration.

### **Kyoto Protocol**

International agreement linked to the United Nations Framework Convention on Climate Change. The major feature is to set binding targets for industrialized countries for reducing greenhouse gas emissions.

### **Non-renewable energy**

Fossil fuels such as oil, coal, gas and nuclear (International Energy Agency)

### **Nordic Council of Ministries**

Is the forum for Nordic governmental cooperation

### **Nordic countries**

Norway, Sweden, Finland, Denmark and Iceland. In this thesis: exclusive Iceland

### **Nordic Energy Research**

The Nordic governments have since 1985 allocated funds for common energy research projects in the Nordic region. Nordic Energy Research’s goal is to maximize the results of energy related research and development in the Nordic countries.



**RAO UES**

Russian Unified Energy systems. The largest Hydropower Company in Russia. Owned by the Russian State

**Renewable energy**

Energy resources that is naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include: biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action ([www.eia.doe.gov](http://www.eia.doe.gov)).

**Strategic alliances**

Involves two or more organizations, cooperating on strategic areas, technology or products (Knoke 2005)

**Sustainable development**

A form of development that meets the needs of the generation of today without jeopardizing the chance for future generations to meet their own needs (Brundtland's Commission 1987)

**The Russian Federation**

The official name for Russia

## LIST OF ABBREVIATIONS

<b>BASREC:</b>	Baltic Sea Region Cooperation
<b>CDM:</b>	Clean development mechanism
<b>CER:</b>	Certified Emission Reductions
<b>CO<sub>2</sub>:</b>	Carbon-dioxide
<b>GWh:</b>	Gigawats per hour
<b>HHB:</b>	Handelshøgskolen i Bodø
<b>IEA:</b>	International Energy Agency
<b>ISA:</b>	International strategic cooperation
<b>Mtce:</b>	Million tones of coal equivalent
<b>NEFCO:</b>	Nordic Environment Finance Corporation
<b>NGO:</b>	Non-governmental organization
<b>NUPI:</b>	Norwegian Institute of International Affairs
<b>OECD:</b>	Organisation for Economic Cooperation and Development
<b>RE:</b>	Renewable energy
<b>RES:</b>	Renewable energy sources
<b>Res-E:</b>	Electricity from renewable energy sources
<b>SLU:</b>	Swedish University of Agricultural Science
<b>tCO<sub>2</sub>e:</b>	Ton of CO <sub>2</sub> emission
<b>TGC:</b>	Tradable green certificates
<b>USSR:</b>	Union of Soviet Socialist Republics
<b>WCED:</b>	The World Committee on Environment and Development

# 1 INTRODUCTION

Russia and renewables? Nordic-Russian cooperation? A match made in heaven, or simply lost in translation? This thesis focuses on the experiences of Nordic actors involved in various types of renewable energy cooperation with Russia. Why do they find it worth pursuing, and how does it work?

In the hunt for new markets and new competitive advantages, Nordic companies have gradually moved into the Russian market, as exemplified by the activities of IKEA, Telenor and Fortum. When it comes to renewable energy, the Nordic countries have some of the world's most ambitious targets for the use of renewable energy, while Russia can offer one of the world's largest potentials for renewable energy sources. A perfect basis for fruitful cooperation? This question and others will be dealt with in the ensuing chapters.

## **1.1 Background of the thesis**

In the following section I present the relevance of the study, the purpose of this research and the problem statement.

### **1.1.1 Relevance for society and business**

Climate change is held to be the greatest global environmental challenge of our time, and combating this challenge should be seen in relation to the development of the energy sector (Stern Review Report 2006). From this perspective, renewable energy is of significant importance. According to the Kyoto Protocol established in 1997 and ratified in 2005, CO<sub>2</sub> emissions are to be reduced by 5.2% by the year 2012 (Fornybar energi 2007). The 2006 Stern Review Report concluded that in order to avoid the worst impacts on climate change, action needs to be taken now. Furthermore, the Report (2006) states: *“Action on climate change will also create significant business opportunities, as new markets are created in low-carbon energy technologies.”* From this perspective, renewable energy might play a larger role than it does today.

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The Nordic countries are small, open economies that have always depended on international trade. Thus, international cooperation for the Nordic countries has been recognized as a question of “to be or not to be” (St. meld. 41: 2006-2007). In all the Nordic countries, there are ongoing debates regarding climate and renewable energy (Jonsdottir & Snorrason 2005). The focus is increasingly on renewable energy, with the Nordic governments steadily raising their targets for the use of renewable energy. Two of these countries, Norway and Finland, share land borders with Russia; and the Baltic and the Barents Sea bring all the Nordic countries into contact with Russia. According to the Nordic Council of Ministers, there is a strong determination among the Nordic governments to continue to develop Nordic-Russian relations. Recent years have seen an increased effort to strengthen the cooperation between the Nordic countries and the Baltic states, including Russia, in connection with renewable energy and energy efficiency. This effort has materialized in various projects (St. meld. 41, 2006-2007).

*Russia* is experiencing economic growth and development. It controls some of the world’s largest reserves of oil and gas, as well as possessing extensive renewable resources (EU-Russia Technology Centre 2004). The Russian Energy Strategy to 2020 indicates that as much as 30% of Russian energy needs can be met by using alternative resources, if these are developed to their full potential. In addition, joint Western-Russian research has concluded that further development of renewable energy technologies can be extremely valuable in the global marketplace (Perovic & Orttung 2007).

Regarding cooperation between Western and Russian actors, Perovic & Orttung (2007) state that the promotion of increased energy efficiency, as well as the development of renewable energy, are largely unexplored areas which have a significant development potential and are economically attractive for both sides.

The topic of this thesis is of interest not only because of its valuable relevance on the current agenda. I will argue that this topic is of high relevance for Nordic companies that possess extensive knowledge concerning the renewable energy sector or renewable energy technologies, as well as for financial institutions, investors, shareholders and local

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governments in the Nordic countries and in Russia alike. For the companies it is essential to create competitive advantages in order to survive. Since Nordic-Russian cooperation on renewable energy seems to be at an early stage, it is my hope that this study may prove relevant to companies that are looking for strategic openings, and are planning for tomorrow's changes through actively searching for new possibilities.

### **1.2 Relevance of research and need for knowledge**

This master thesis forms part of an ongoing research project carried out by the Norwegian Institute of International Affairs (NUPI) and funded by Nordic Energy Research. This shows that the field of Nordic-Russian cooperation on renewable energy is of current interest and addresses the need for research within this area. My initial examination of studies of Nordic-Russian cooperation on renewable energy indicated that research on renewable energy cooperation between Russia and the Nordic countries seems relatively limited, still a new and quite unexplored field. Figures from the International Energy Agency (IEA) show that Norway is the Nordic country with the least research on renewable energy, and that there is a growing need for more research on this topic. All these factors indicate the importance of such research. Therefore, I hope this thesis can help shed light on some new areas that have not been covered by previous research.

### **1.3 Purpose of the research**

This thesis describes experiences of *Nordic-Russian cooperation on renewable energy* from a stakeholder perspective by including Nordic companies, authorities, a non-governmental organization (NGO), a university and a financial institution. This experience will be analysed on the basis of a theoretical frame of reference in order to identify the opportunities and challenges for Nordic-Russian cooperation in various contexts related to renewable energy.

### **1.4 Problem statement, contributions and limitations**

#### **1.4.1 Problem statement**

In this section I present the problem statement of this thesis, and discuss possible

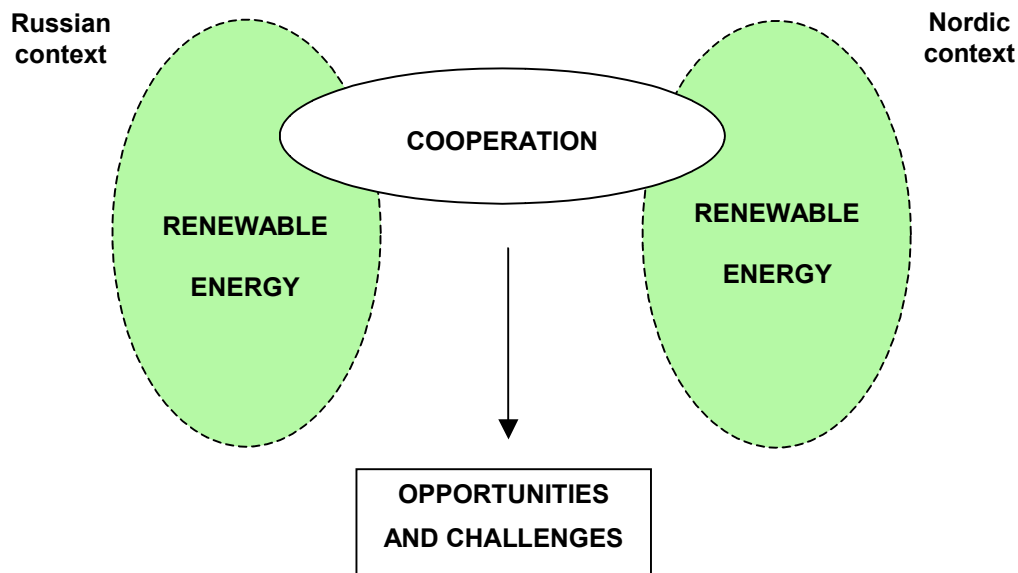
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theoretical approaches that might prove useful. Additionally, I seek to anticipate the outcome of this study, and indicate some of its limitations.

In this master thesis I aim to address the need for more knowledge in the field of Nordic-Russian cooperation on renewable energy by responding to the following research question:

*“What are the opportunities and challenges in Nordic-Russian cooperation on renewable energy?”*

The problem statement is illustrated in Figure 1 through a general model, linking the opportunities and challenges to Nordic-Russian cooperation on renewable energy. The context of Russia and the Nordic countries, as well as renewable energy structures in the two geographical areas, may be of importance in relation to the opportunities and challenges for cooperation on renewable energy.



**Figure 1: Illustration of problem statement**

## Introduction

In this research project I apply various views on Nordic-Russian cooperation and renewable energy. To identify factors of importance, I have chosen to base the theoretical foundation of the problem statement on three different areas. In the first part, the theoretical discussion regarding the *idea* of Nordic-Russian cooperation is presented. In order to understand the concept and be able to discuss the cooperation within this particular field, this presentation will include a theoretical discussion of *renewable energy*.

Secondly, I account for the *structure of cooperation* by focusing on management literature regarding reasons to cooperate, motives and goals for strategic cooperation, partner selection, trust and barriers to international strategic cooperation. Theories regarding forms of organizational cooperation and international strategic alliances will also be taken into account.

The third part of the theory framework is based on the theory of “travel of ideas” (Czarniawska & Joerges 1996), derived from institutionalization theory. Management theory can offer considerable knowledge and insights into the process and the various forms of cooperation necessary for describing and explaining possible opportunities and challenges in Nordic-Russian cooperation. Furthermore, I find it appropriate to focus in particular on Czarniawska and Joerges’ (1996) “*travel of ideas*” and seek to explain Nordic-Russian cooperation on renewable energy in light of this approach. The model has been chosen in order to include the dynamics of cooperation, as this may be seen as an interaction between different actors in various countries, rather than a static relation. I argue that this theoretical foundation applies well to my problem statement and will provide the necessary explanatory power.

### **1.4.2 Limitations**

This thesis is limited to *Nordic* perspectives and experiences. This limitation in focus was made in order to be able to complete the study within the time frame, but it was also a decision based on earlier experiences with cross-cultural and comparative studies at the bachelor level, as well as from knowledge of Russia. Language difficulties, cultural

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differences regarding student investigation, as well as the degree of openness and access to information in Russia, all led me to limit this thesis to concentrate on Nordic experiences and perceptions. This means that this thesis aims to present the Nordic views and picture the world as seen through Nordic eyes. It would certainly have been interesting to involve Russian actors, but due to the reasons mentioned above as well as the limitations in funding and time, I was left with little choice. However, I did succeed in including two Nordic respondents living in Russia, and many of the respondents have long experience from collaboration with Russia. The emphasized focus in this thesis will be on Nordic experiences and perspectives, with *Nordic countries* defined to include Norway, Sweden, Denmark and Finland, but not Iceland. This limitation was introduced for the same reasons mentioned above.

### **1.4.3 Possible contribution**

The purpose of this thesis is to contribute to new knowledge in the field of Nordic-Russian cooperation on renewable energy. I therefore hope to make some practical contributions in relation to the results concerning opportunities and challenges in Nordic-Russian cooperation on renewable energy.

Additionally, I hope this study can provide input to policy-makers in the various Nordic countries as well as increased insight into the factors that seem to be of importance in this type of cooperation. As will be seen, a possible theoretical contribution from this study can be the use of Czarniawska and Joerges' model on "travel of ideas" in this context.

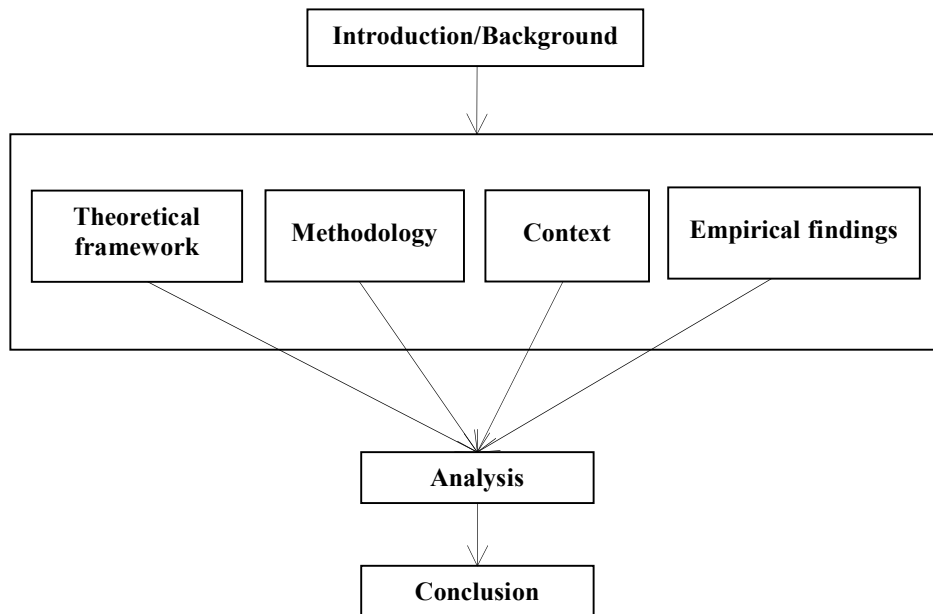
### **1.4.4 Structure of the thesis**

In order to answer the problem statement, I have chosen to structure my research report as shown in Figure 2. Chapter 1 provides the reader with introduction and background. A theory overview is presented in Chapter 2, including the most relevant theories of importance to the problem statement. Chapter 3 describes the methodology: How the research was conducted, which efforts and actions have been taken in order to ensure sufficient reliability of the data. In the continuation of this, I present the context in Chapter 4 in order to create a basic understanding of renewable energy in the Nordic countries and in Russia. Chapter 5 describes the content of the data I have collected,



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while in Chapter 6 I go through the analysis and seek to interpret my findings in light of the framework presented earlier. Finally I draw some conclusions and suggest some further openings for future research.



**Figure 2: Structure of the thesis**

## 2 THEORY FRAMEWORK

This chapter provides an overview of relevant theory in relation to the problem statement, and serves as a framework for this research project. First, I present relevant theory regarding renewable energy. Following this, management literature in relation to cooperation and structures of cooperation is presented. And third I present Czarniawska and Joerges' model "travel of ideas".

A good theory framework needs to fulfill some conditions. The connections between the different parts of the framework must be described (Whetton 1989). Sutton and Staw (1995) also emphasize that a theory framework is much about connections between different phenomena as well as a description of actions, structures and viewpoints. In the following section, the concept of renewable energy will be discussed.

### 2.1 Idea

#### 2.1.1 Renewable energy – what is it?

The *renewable energy potential* in the world is huge, but in order to realize this energy potential, there are certainly barriers to be overcome (Stangeland 2007). Central elements need to be taken into consideration in calculating the renewable energy potential. This could for instance be related to the establishment of methods for calculation of environmental consequences. Even though the potential for renewable energy production is huge, the realization of this potential is restrained by economic, technical, area- and societally related barriers, as well as by environmental barriers (Stangeland 2007). In addition to this it is important to distinguish between the theoretical potential and the potential that can be utilized and realized through energy production. Noor et al. (2004) define and distinguish among the different terms: theoretical, technical, realistic and potential for realization. This is presented in Table 1.

## Theory framework

**Table 1: Renewable energy potential: terminology from Noor et al. (2004)**

Theoretical potential	Total physical energy amount for a renewable energy source
Technical potential	Amount of energy that can be utilized with today's technology
Realistic potential	Amount of energy that is realistic to utilize considering the factors such as social acceptance, environmental considerations and other barriers related to the market
Potential for realization	Energy potential that can be realized within a certain time frame. Depends on production capacity and other economic factor on the global market

As we can see from Table 1, there is clearly a difference between theoretical potential and the renewable energy potential for realization.

*But what is renewable energy – really?* In order to get a clearer understanding of the concept of renewable energy, and the meaning of it in this thesis, I will in the continuation describe for aspects related to renewable energy. The term *energy* derives from the Greek word *energeia* – which means work or action (Sandberg 1992: 11). It is essential to our life quality, and underpins all other elements of the economy (Bull & Billman 2000). In general, we might say that energy is the power that makes things happen, but this is obviously a simplification, and I will be more specific further on in this paper. As an example, physicists and engineers define energy as the *capacity to work* (Ristinen & Kraushaar 2006:7).

*Renewable energy* is a complex term with several other terms closely connected. The IEA (2005) refers to renewable energy as the resources that can make important contributions to sustainable development. The resources that the IEA mentions are *solar, wind,*

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*biomass, geothermal and hydro*. Within the field of *bioenergy*, the IEA emphasizes that this includes activities from heat production through the combustion of fuel and wood, as well as the generation of electricity and production of gaseous, chemicals and liquid fuels. Regarding *geothermal* resources, this concept is used by the IEA (2005) to refer to the internal heat from the earth.

### 2.1.2 Aspects of renewable energy

In relation to renewable energy, many concepts are utilized. In order to obtain an overview of renewable energy, the following topics will be covered in the continuation:

- Sustainable development
- Resources
- Technology
- Market mechanisms/Incentives

### Sustainable development

*Sustainable development* is a concept that in many ways can be seen as the objective for the development of renewable energy. The World Committee on Environment and Development (WCED) refers to sustainable development as: “A form of development which meets the needs of the generation of today without jeopardizing the chance for future generations to meet their own needs” (The Brundtland’s Commission 1987). Sustainable development is a widely used term, applied in many different contexts. What is meant by “sustainable development” in relation to energy? In 1987 the Brundtland Commission’s Report (1987) provided four key elements:

1. Sufficient growth to meet human needs
2. Energy efficiency
3. Addressing public health and safety issues when they arise in the use of renewable energy
4. Protection of the biosphere and prevention of more localized forms of pollution

Even though the Commission promoted these key areas for sustainable development

## Theory framework

more than a decade ago, they seem to be highly relevant as aspects of renewable energy today. This leads to another important aspect not unconnected with renewable energy: climate change.

*Climate change* and *CO<sub>2</sub> emissions* are both important factors that make it valuable to make efforts in renewable energy. The two aspects are interrelated and I will therefore cover this together. Climate change has become an issue of global importance, with most available evidence linking CO<sub>2</sub> and greenhouse gas emissions to global warming (Damtoft et al. 2008). The focus on climate change has increased as attention has been drawn to the costs involved, and to the effects of global warming. With climate change in mind, the European Union set a goal of reducing the CO<sub>2</sub> emissions of its member countries by 20% by the year 2020 (Telli et al. 2008).

### **Renewable energy resources**

In order to achieve sustainable development in the context of energy, renewable energy sources are needed. According to the Energy Information Administration, *renewable energy resources* are : “Energy resources that are naturally replenishing but flow-limited.” They are virtually inexhaustible in duration but limited in the amount of energy available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action ([www.eia.doe.gov](http://www.eia.doe.gov)). According to Innovation Norway and their Renewable Energy report (2007), renewable energy is an “energy resource that is included in the natural circuit of the earth, and therefore can be renewed”. In the continuation we will see that other aspects also seem to be interfering with renewable energy.

### **Technology**

In order to achieve sustainable development and realize the renewable energy potential, technology is needed. This is important whether we relate it to hydro, wind, bioenergy or any other renewable energy source. The term renewable energy is applied by Bull and Billman (2000) to refer to “a broad spectrum” of *technologies* based on self-renewing energy sources, such as sunlight, wind, flowing water, the earth’s internal heat and

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biomass (energy crops, agricultural, forest) and industrial and municipal waste.” Here it is important to emphasize that the various renewable energy technologies are in very different stages of research, development and *commercialization*. Wind, biomass, solar and geothermal technologies are all making steps towards a broader commercialization, but there are differences in terms of cost structure, resource availability as well as the potential impact on greenhouse gas emissions (Bull 2001). Technology for hydropower is well known, and is considered to be the most profitable renewable energy technology. The resources can be used to produce electricity for all economic sectors, including transportation fuels, heat for buildings and industrial processes.

Some of the literature reviewed considers hydro- and geothermal power and combustible renewables and waste as renewable energy, while wind, solar and others are referred to as “new” renewable energy. The terms renewable energy and “new” renewable energy have been used in order to distinguish between commercialized and developed energy technology, and the production of renewable energy that is still dependent on financial support (Fornbybar energi 2007). This reasoning seems based on the fact that only a few years ago such technologies not had reached a widespread market (Jacobsson & Johnson 2000). Recently however, Innovation Norway has claimed that the use of the term “new” renewable energy no longer is suitable, as earlier “new” renewables, like wind, have now become developed and implemented on a large scale (Fornbybar energi 2007). In any case, I have chosen not to focus on the difference between “old” and “new” technologies, but only mention this as part of the picture of renewable energy technologies.

### **Market mechanisms and incentives**

In order to obtain sustainable development through the realization of resources and technologies, there needs to be a market demand, as well as market mechanisms and incentives for the production of electricity from renewable energy sources. Market mechanisms are often discussed in relation to the support mechanisms for renewable energy. Support mechanisms are required to stimulate the deployment of the majority of renewable energy technologies until they have matured and become competitive with existing energy technologies (Huber et al. 2007). This is also emphasized by Dijk et al.

## Theory framework

(2003), who state that renewable energy technologies will need specific market mechanism support for many years in order to improve and additionally bring the supply and demand of renewable energy to a level of maturity. When this occurs, the renewable energy sector will be able to compete in the market with other energy resources. Examples of market support mechanisms differ from country to country depending on the type of renewable energy source, and the technology used. Ellis and Peake (1996) mention various incentives to increase the share of renewable energy development, like financial incentives, favourable pricing for renewable energy, government-funded R&D of renewable energy technologies, and national renewable energy plans. Sandgren (1999) has organized various incentives in three different groups: investment subsidies, tax discounts and sales subsidies, which can be carried out through fiscal measures, regulations, market stimulation or technology procurement. This is illustrated in Table 2.

**Table 2: Incentives for renewable energy**

<b>Subventions</b>	<b>Fiscal measures</b>	<b>Regulations</b>	<b>Market stimulation and transformation</b>	<b>Technology procurement</b>
Investment subsidies	Emissions taxation	Technical product standards	Information and advice	Creation of market channels for new technology
Tax discounts	Energy taxation	Standards for energy use in buildings	Product labelling	Development through research
Sales subsidies		Trading mechanisms		

Another important aspect of this discussion involves *consumer willingness to pay* (WTP) for electricity generated in an environmentally friendly way. Even if energy is being produced with “obvious” good intentions and benefits for the environment as a whole, much depends on the market demand and the WTP. Historically, the power consumers have been required to pay increased rates for renewable energy (Photovoltaics Bulletin 2003). According to Zarniakau (2003), age, education and salary are all factors that play a role in relation to this. In economic theory it is emphasized through behavioral models that there is a great difference between those who hypothetically would like to contribute to the use of renewable energy, and those who actual do so (Wiser 2007). Several authors argue that consumers may overstate their WTP when asked about their hypothetical contribution, and ongoing research is seeking to reveal whether renewable energy should

## Theory framework

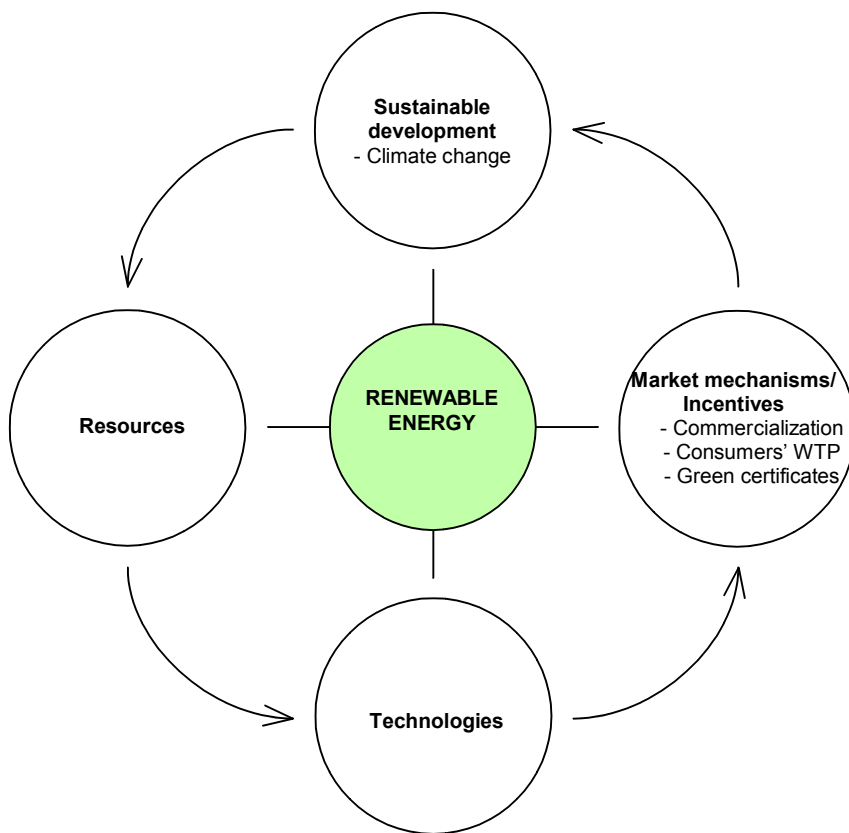
be paid for voluntarily or through publicly administrated systems. This shows that the discussion concerning renewable energy goes beyond the questions of renewable energy resources and technologies: much also depends on consumers' willingness to pay and the general market demand.

Another aspect that can be related to renewable energy is *green certificates*. Verhaegen et al. (2007) refer to it as a common framework for renewable energy sources (RES) that has aspired in Europe. Tradable green certificates (TGC) have become one of the most widespread support schemes for renewable energy in Europe (ibid.). The background for the establishment of green certificates has been closely connected to the environmental policies of the European Union and the agreement on the Kyoto Protocol on greenhouse gas emissions the period 2008-2012. In reaching these targets, technologies based on renewable energy resources will play an important role (Morthorst 2003).

In this section we have looked at various aspects that appear closely linked to the term *renewable energy*. Renewable energy may contribute to sustainable development - but how, one may well. In my view, sustainable development, resources, technology and market mechanisms/incentives can be seen as a value-chain or a circuit of renewable energy. In the model in Figure 3, I have illustrated this view, indicating that it is necessary to focus on all four parts in order to utilize renewable energy to its full extent.



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**Figure 3: Value-chain perspective of renewable energy**

The value-chain perspective presented in Figure 3 shows how the aim of renewable energy is to contribute to sustainable development through the use of renewable energy sources, and through the transformation of these sources into electricity, facilitated by technology. Furthermore, this electricity needs to be distributed and commercialized on the market. This in turn means that if one element do not function, it is difficult to fully utilize the potential of renewable energy.

This section aimed at presenting an overview of some factors of importance in relation to renewable energy. In the following section I look into management theory, focusing on forms of cooperation.

## **2.2 Structure of cooperation**

### **2.2.1 Why cooperate?**

Led by the current globalization, corporate operations and the nature of these have been transformed (Todeva & Knoke 2005). Today, strategic and competitive advantages derive from companies' capacities to cooperate with other firms: to form networks and share costs and benefits with partners that may be remote both culturally and geographically. Globalization is one of the key drivers in promoting and forcing organizations and companies to gain and preserve their competitive advantages (Todeva & Knoke 2005).

### **2.2.2 International strategic alliances**

According to Nielsen (2007), international strategic alliances are a fast-growing organizational form, as it becomes increasingly important to conduct business across state borders. International strategic alliances help organizations and firms to keep up to date in an environment characterized by rapidly changing technologies. The use of alliances also spreads the risk and cost of innovation, and provides country-specific knowledge and access to foreign markets (Chang et al. 2008). According to Nielsen (2007), these types of international collaboration are very difficult to manage successfully. This is supported by Chang et al. (2008), who state that there is a widespread recognition of the difficulties of the cooperation process. The possible success of international strategic alliances seems to be influenced by the experience of the firm (ibid.).

Nielsen (2007) takes a multidimensional approach to determining the performance of international strategic alliances, because there seem to be multiple factors at work, influencing the performance and outcome of international strategic alliances. This could for instance involve the nature of the industry and the institutional environment in which the alliance operates. But it could also involve the quality and commitment of the alliance management. "Quality" can refer to the political and regulatory institutions of the host country/ies (Nielsen 2007).

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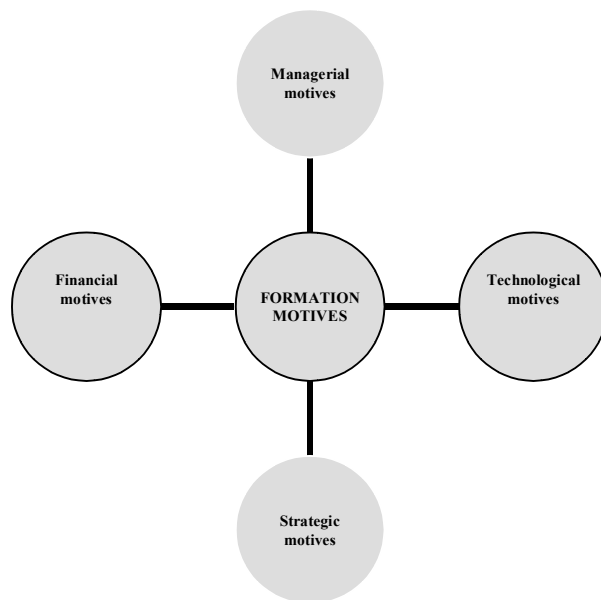
### 2.2.3 Motives and goals for strategic cooperation

Strategic cooperation is not a goal, but a possible way of reaching a goal (Lorange et al. 1992). The motives for the cooperation may vary, although it as if the overall goal is to obtain a strategic position nationally or internationally (Haugland 1996).

Companies undertake strategic alliances and move into international cooperation for many reasons: to enhance their productive capacities, to reduce uncertainties internally and in their external environment. The motives differ. Earlier research has shown that motives for forming collaborative arrangements can be studied from different theoretical perspectives (Zineldin & Dodourova 2005). Benefits from alliances and strategic cooperation go beyond pure financial motives and derive from more strategic reasoning, like creating new market opportunities (Varadarajan & Cunningham 1995; Zineldin & Dodourova 2005), expanding economies of scale and sustaining a long-term competitive advantage.

While Horton and Richey (1998) found that the three most common motives for cooperation through strategic alliances between 1985 and 1991 were marketing, technology and competitiveness, Zineldin and Dodourova (2005) have designed a figure that is built on existing literature within this field. It summarizes motives for strategic cooperation and alliances and includes the following four areas:

- *Financial motives* are related to cost reduction and profit generation
- *Technological motives* are related to development of new technology, or the supply process
- *Managerial motives* refer to motives such as interdependence and loyalty
- *Strategic motives* are connected to competitive positioning



**Figure 4: Motives for alliance formation (Zineldin & Dodourova 2005)**

In management literature, much of the work on cooperation through strategic alliances has been founded on work of Contractor and Lorange (1988), covering cooperative strategies in international business, and “the strategy and basis for cooperative ventures”. But also Buckley and Cassen with their “theory of cooperation” have played a central role in the formation of the management theory within this field (Todeva & Knoke 2005). Additionally, issues of trust, partner selection, knowledge transfer, complementarities and synergies between partners have dominated the scientific discourse (ibid. 2005). When a company has decided to move into international cooperation based on financial, managerial, technological or strategic motives, the literature stresses the importance of identifying a suitable “dancing partner”. The next section will focus on partner selection.

#### **2.2.4 Forms of organizational cooperation**

Strategic cooperation, networks, alliances, joint ventures, inter-organizational cooperation: there are many names and organizational forms of cooperation, and it is not always easy to draw clear distinctions among the terms (Haugland 1996).

According to Todeva and Knoke (2005), many types of inter-organizational formations emerge when organizations search for cooperative partners. In order to get an idea of the different types of inter-organizational relations and cooperative forms that appear in the literature, I present a brief overview of the various forms. At the top of Table 3 there are hierarchal authority relations, where one firm controls the other’s assets; at the bottom of the list, there are relations involving no obligations.

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**Table 3: Structures of inter-organizational cooperation and cooperation. Source: Todeva & Knoke (2005) and Bessant et al. 2005).**

Type of cooperation/ relation	Description	Time period/ duration	Advantage	Disadvantages
<b>Hierarchical relations</b>	One firm takes full control of another's assets. Control by ownership	Long-term	Stable, strong obligation	
<b>Joint ventures</b>	Two or more firms, jointly owned legal organization	Long-term	Complementary know-how Dedicated management	Strategic drift Cultural mismatch
<b>Equity investments</b>	A majority or minority equity holding by one firm through a direct stock investment	Long-term		
<b>Cooperatives</b>	Coalition of small enterprises, combine and manage common resources	Long-term	Share cost and ideas	
<b>R&amp;D Consortia</b>	Inter-firm agreements, for R&D collaboration, typically in fast-changing technology fields.	Medium-term	Expertise, standards, share funding	Knowledge leakage Subsequent differentiation
<b>Strategic cooperative agreements</b>	Contractual business networks, joint multi-party strategic control. Key strategic cooperation and shared responsibility for performance outcome.	Flexible	Low commitment Market access	Potential lock-in Knowledge leakage
<b>Cartels</b>	Large corporations, controls production and/or prices by cooperation within an industry	Flexible/ Long term	Securing income through high prices	Strong commitment Inner tension
<b>Franchising</b>	Franchise of a brand/ name or identity within a geographic area	Long-term	Standardizing concepts. Cost reductions.	Little flexibility
<b>Licensing</b>	A company grants another the right to use patented technologies	Fixed-term	Technology acquisition	Contract cost and restraints
<b>Subcontractor network</b>	Inter-linked firms. Subcontractor negotiate it's suppliers long term conditions	Short term	Cost and risk reduction. Reduced lead time	Search cost, product performance and quality
<b>Industry standards groups</b>	Committees that seek the member organizations' agreements on adoption of technical standards, manufacturing and trade.	Dynamic, learning potential	Coordinating mechanisms	Not necessarily voluntarily
<b>Action sets</b>	Short-lived org. coalitions.	Short time	Coordinate lobbying and influence on policy making	Ad hoc
<b>Market relations</b>	Transaction between organizations, coordinated through the price mechanism	Flexible	Stronger negotiation position	

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Between the first and the last “extremes” of cooperation and inter-organizational forms, there are 11 general strategic alliances (Todeva and Knoke 2005). Pesämaa (2007) and Todeva and Knoke (2005) present the categories for inter-organizational cooperation, with some differences. According to Todeva and Knoke (2005), joint venture is one form of a strategic alliance, while Pesämaa classifies it as various inter-organizational networks. Thus, we see that the theoretical field of inter-organizational cooperation is a rather “blurry” one. I have chosen to adhere to the following definition of a *strategic alliance*: “a bilateral relationship characterized by the commitment between two or more partner firms to reach a common goal” (Jorde & Teece 1989, Supphellen et al. 2002: 786). According to Supphellen et al. 2002, the main idea of strategic alliances is a voluntary arrangement between firms, involving exchange, sharing or co-development of products, technologies or service. With this understanding a joint venture will be one type of strategic alliance. Pesämaa (2007) has a somewhat different perspective on this. Table 4 presents an overview of what Pesämaa (2007) terms inter-organizational networks.

According to Pesämaa (2007), the first classification - developments and cooperative groups - often has undefined or diffuse goals and therefore involves a low degree of commitment. Industrial networks demand to some extent more involvement, while strategic alliances are generally effective for risk reduction and market access. I return to this in greater detail in the theory discussion.

Strategic alliance is also seen as an important form of inter-organizational cooperation. This indicates recognition of the fact that it is difficult for one firm to have all the necessary capacity, resources and activities (Gebrekidan & Awuah 2002). Gebrekidan and Awuah (2002) point out that there is a tremendous amount of research related to strategic alliances that seeks to increase the store of knowledge as well as understand the potential and challenge within strategic alliances. In this case I find it logical to focus more on international strategic alliances, as this thesis focuses on the field of Nordic-Russian cooperation.

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**Table 4: Network classifications and organization (Pesämaa 2007)**

Classification	Definition	Study
Developments and cooperative groups	Networks and voluntary organizations that meet to share costs and ideas for development	Murto-Koivisto, Routamaa and Vesalainen, 1996
Industrial networks	Inter-organizational networks organized in the same area	Porter 1998
Strategic alliances	Voluntary IO ties of organization, sharing goals of risks, technical development, market development, resources or larger projects	Gulati 1995, Todeva and Knoke 2005
Joint Ventures	Share risk and responsibility	Friedmann and Kalmanoff 1961
Joint Unit	Organization formed by a number of independent organizations with long term intentions	Murto-Koivisto, Routamaa and Vesalainen, 1996

### 2.2.5 Partner selection

How should a company select a partner for cooperation? By understanding the partner selection process, it is possible to reduce the risk failure for the alliances (Bierly and Gallagher 2007). What factors might be of importance? A firm's decision to enter into cooperation is often determined to by the availability to relevant partners. Choosing the wrong partner for the cooperation might result in poor company performance, followed by economic losses (Gulati 1998; Supphellen et al. 2002). Partner selection can additionally be referred to as the choice to ally with someone who has the resources you need and whom you can include, via your own resources, to collaborate with you (Bierly & Gallagher 2007). This shows the importance of choosing the right partner.

Partner selection and the criteria for making the right choice have been discussed widely in the literature. According to Supphellen et al. (2002), judgments concerning partner selection should include assessments of how the companies together can realize the strategic objective of the cooperation and their ability to work together. Bierly and Gallagher (2007) have studied partner selection, and how strategic fit, trust and strategic expediency influence the partner selection in an alliance. *Strategic fit* refers to the way in which the strategic and resource needs fit together, and how it is the source of inducements to cooperate through alliances (ibid.). Additionally Bierly and Gallagher (2007) argue that strategic fit and trust are not enough to explain the partner selection

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process, because they do not account for the role of *time* or the external time constraints that can be associated with many industry environments. The role of time is also of significant importance as it influences the managerial ability to make high-quality and effective partner selection decisions under time pressure (Bierly & Gallagher 2007).

Elmuti and Kathawala (2001) describe several areas that appear important to the success of strategic alliances. In general it is very much a question of having commitment and clearly defined roles and goals. The factors of importance are summarized in Table 5.

**Table 5: Areas of importance to the success of strategic alliances (Elmuti & Kathawala 2001)**

1. Senior management commitment
2. Similarities in management philosophies
3. Effective and strong management teams
4. Frequent performance feedback
5. Clearly defined goals/ objectives
6. Planning
7. Clearly understood roles
8. International visions
9. Partner selection

Many authors emphasize the role of *trust* when establishing a partner relation. To this we now turn.

### 2.2.6 Trust

'*Trust, but verify*' says an old Russian proverb. Because of global competition, companies are increasingly pooling their costs, rewards and risks into international alliances. Trust plays an important role in governing the potential hazards involved in international cooperation (Parkhe 1998). Riegelsberger et al. (2005) emphasize how technology improvements have made it possible to find business partners online and to communicate electronically. This increases the importance of trust in a cooperative relation. Within the literature, various fields have focused on trust, ranging from social psychology and sociology to organizational behavior and economics (Luo 2002).



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Some earlier studies suggest that trust is a multidimensional construction that contains both inter-organizational and interpersonal elements. This might imply that trust is a phenomenon that consists of economic and social factors, influenced by environmental, organizational and individual contingencies. *Reliance* and *risk* are two other factors that accompany trust (Luo 2002). Trust can be divided into *cognitive* and *affective* trust. The former is based on rational choice, while affective trust is something that has developed from repeated interaction between parties (Luo 2002). Definitions of trust seem to vary somewhat. However, there seems broad agreement that “*confident expectations, and willingness to be vulnerable*” (Luo 2002:681) are important components of trust. This is supported by Hitt et al. (2002), who define trust as “*the willingness to accept vulnerability based on positive expectations to a partners behavior, and predictability, dependency and belief are three important components of trust*”. A third definition (Bierly & Gallagher 2007:138) also supports this: trust is “*the mutual confidence that no party to an exchange will exploit another’s vulnerabilities because opportunistic behavior will violate values, principles and standards of behavior that have been internalized by parties to an exchange*”.

In relation to cooperation through alliances, Arnett and Hunt (2006) state that without trust and commitment there would be no cooperation or alliance. This indicates the importance and the role of trust.

Within forms of cooperation like international strategic alliances (ISA), trust passes through several different stages, like developing, building, declining and event re-surfacing in long-term relationships (Fukuyama 1995; Luo 2002). Parkhe (1998) emphasizes the importance of building trust slowly, and of starting the relation in small, measured and specific steps instead of beginning with an agreement on a huge contract. According to Luo (2002), ISAs are characterized by an ongoing mutual interdependence in a cross-organizational, cross-cultural context, in which one partner is vulnerable to the other. He further points out that this mutual interdependence leads to shared control and management, and this can make the collaboration difficult to manage.

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In the process of cooperation there are various obstacles that may impede the cooperation. In the following section these will be accounted for as *barriers*.

### 2.2.7 Barriers

Experience with international strategic alliances shows that they face a range of problems, often resulting in a failure of the cooperation (Zineldin & Dodourova 2005). Even though firms move into cooperation with the right motives, many strategic alliances do not work. According to Zineldin and Dodourova (2005) different objectives, inability to share risks, and lack of trust are all factors that can act as barriers to such cooperation. Culture clash, lack of coordination between management teams and differences in operating procedures are further possible factors.

With global integration, cultural boundaries are becoming fuzzy, but cultural differences on the corporate level are still salient and have a bearing on the success of an alliance (Luo 2002). The cultural distance within an international strategic alliance seems to be of significant importance: when the cultural distance is shorter, the cultural blending between cultures seems much easier (Luo 2002). Additionally, this helps or facilitates the development of common values and norms for the alliance. Cultural differences often create problems in making strategic alliances work, and such differences can lead to serious conflict between the cooperating partners (Vyas et al. 1995). This is supported by the “Uppsala model” (Johanson & Vahlne 1977, 1999; Fink & Kraus 2007), which stresses the importance of cultural distance as the main reason for great uncertainty in the internationalization process. This may cause a negative influence on the cooperation, with language problems and cultural misunderstandings (Fink & Kraus 2007). *Language barriers* can also be a source of delays and frustrations. Although English is becoming a common international language (Vyas et al. 1995), there are still many areas where its use is rare.

This section aimed at presenting management literature of importance for cooperation. In the following section I look into a limited part of institutionalization theory, especially related to Czarniawska and Joerges (1995) “travel of ideas”.

### **2.3 Institutionalization, change and organizations**

At some point along the way, Nordic and Russian actors must have decided to move into some type of cooperation on renewable energy. Why did they do so, and what caused such organizational change?

Institutionalized forms of organization are, according to Forsell and Jansson (1996), abstract typifications that can be used to distinguish among various types of organization. The same authors also hold that forms of organization are institutionalized when they can be understood as phenomena that describe common knowledge on widely acknowledged organizations - as something that “everyone knows”. But the degree of which a form of organization is institutionalized or not, depends on whether or not it is broadly acknowledged among the organizational actors in the field. The more recognized among the actors, the more institutionalized is the form of organization (Forsell & Jansson 1996).

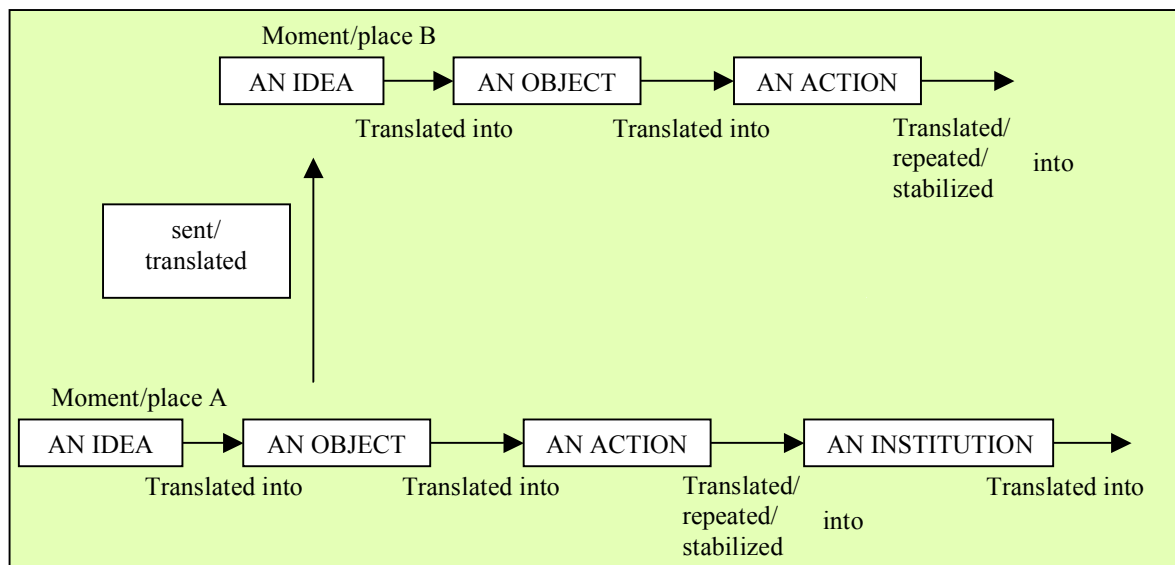
According to Dillard et al. (2004), *institutional theory* is a way of thinking about formal organizational structures and the nature of the historically grounded social processes, and how these structures develop. Institutional theory is useful because of its wide range of applicability (Dillard et al. 2004). Earlier, the perception of institutional theory was that it was applicable only to institutionalized organizations, but today there is acceptance that it applies to all types of organizations, because all organizations are institutionalized organizations to various degrees (Scott 1995; Dillard et al. 2004). After all, all organizations are subject to regulative structures and legislation at a local or general level. Institutional theory is mainly concerned with organization’s interaction with the institutional environment, and the effects of social expectations on the organization. But it also involves the incorporation of these expectations and how they are reflected in organizational practice and characteristics (Dillard et al. 2004). In this thesis, I choose to look at an *organization* in accordance with the approach of Dillard et al. (2004), who define it as “an established order comprising rule-bounded and standardized social practices”. Further, “institutionalization” is the process where multiple social settings are developed (Dillard et al. 2004: 508). Bergevarn et al. (1995) hold that *institutional visions*

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are characteristics of various trends, as in *political science* (March & Olsen 1989), in *economics* (Williamson 1975), and in *sociology* (DiMaggio & Powell 1983; Meyer & Scott 1983).

### 2.3.1 Travel of ideas

Czarniawska and Joerges (1995) ask: “what is organizational change, and why do managers and organizations come up with the same ideas at the exact same time?” They emphasize the dominant images of *organizational change* within the modernist dichotomies: organizational change as a planned innovation, such as strategic choice, decision-making and organizational development or an environmental adaptation, such as contingency theory and neo-institutionalism (Czarniawska & Joerges 1995).



**Figure 5: Translation model (Czarniawska & Joerges, 1995)**

Czarniawska and Joerges’ model where they illustrate “the travel of ideas” is presented in Figure 5. The essence of the model may be explained in very simple terms in the following way: At a place or time (A) there might be an idea, a vision that is translated by people in such a way that it at some point it becomes an object. This could be a text, a prototype or a picture. After some time, this idea might move from being an object to further translation into an action, and from there to a further translation into an institution. The model also shows that a quite similar translation process might evolve from the

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objectification of the first idea, and as a consequence travels from place A to place B. In this way, Czarniawska and Joerges explain what “they term the travel of ideas”.

In the following I would like to account for the terminology used and provide some definitions that I consider central for understanding this model. The word *idea* derives from the Greek for “to see”, and through the understanding of these authors, “*the application of ideas takes place through acts of communication*” (Czarniawska & Joerges 1995:20). Between the idea and the next box marked with “object” we can see that the model presents a translation in-between these boxes. According to Czarniawska and Joerges, translation is the key concept for understanding organizational change.

My own review of the literature showed that there seem to be many different definitions of *translation*, as it may refer to a variety of meanings associated with this term. In the present context, it means displacement, drift, invention, mediation or most important, to create new links that did not exist before. An *object*, in this setting, is related to a text, a picture or a prototype, or some sort of linguistic artifact (Czarniawska & Joerges 1995). But how is it possible to translate the idea into *action*? According to Czarniawska and Joerges, such a process must be carried out through a promising idea, and a cognitive process prompted by acts of will. It is a question of moving from images of action to plans of action. Action is the moment where words become deeds and the idea can finally materialize.

Based on the theoretical review I find it appropriate to operationalize the problem statement by asking the following subsidiary questions:

1. Where do the *ideas* for Nordic-Russian cooperation on renewable energy come from?
2. How does the *process* of cooperation work?
3. What is the *structure* of the cooperation?

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In Figure 6 I show the operationalization of the problem statement by placing the various areas presented in the theory chapter into one of the following three areas: idea, process or structure of cooperation. This is the structure that will be followed when I present the experience of organizational cooperation in Chapter 5.

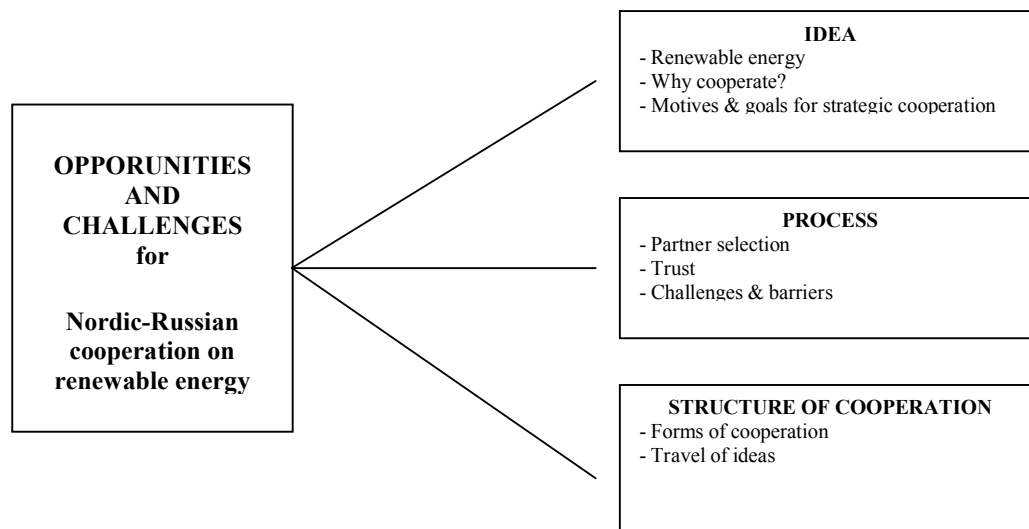


Figure 6: Operationalizing the problem statement

### 2.4 Summary

This chapter has presented the theoretical perspective of this thesis. First I focused on theory regarding renewable energy. Secondly I looked at central theory from the management literature regarding cooperation. Third, I accounted for theory regarding institutionalization and the “travel of ideas”. In the next chapter I will account for the methodological approach and how work on this thesis has been conducted.

### **3 METHODOLOGY – RESEARCH APPROACH**

The purpose of this chapter is to present the methodology chosen in order to answer the research question.

#### **3.1 Research design**

The *research design* in this thesis consists of the theoretical studies presented in the theoretical framework in Chapter 2. According to Easterby-Smith et al. (2002), the research design and the way the research is carried out are influenced by one's philosophical position. In a very general way we might say that method is about creating order out of chaos (Easterby-Smith et al. 2002). But it can also be seen as a plan, or a way to solve problems and acquire new knowledge (Hellevik 1991). This is supported by Hofer and Bygrave (1992), who state that research design also can be considered as the main plan for the empirical gathering of data necessary in order to confirm or to disprove the theory discussed within the theory framework. According to Collis and Hussey (1997) the research topic and the scientific and philosophical position are highly connected and influence the choice of research design.

#### **3.2 Philosophical position**

The researcher's choice of philosophical position is a choice of significant importance as it influences and determines further considerations and choices. In this study, I want to obtain a better understanding of experiences and perspectives on Nordic-Russian business cooperation on renewable energy in relation to opportunities and challenges within this field. From this perspective, I am interested in the relevance of the subjective knowledge, and how different actors comprehend the opportunities and challenges.

In the continuation I will account for the main characteristics of the two dominating positions, and why I regard one of them as more suitable for answering the research question. There are two dominant philosophical traditions, positivism and social constructionism. In the *positivist tradition* the world exists externally, and it is to be measured through objective methods (Easterby-Smith et al 2002:28). This means that the

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observer should be independent. Objective criteria dominate; there is a need for causal explications, and the researcher must develop a hypothesis. Additionally, in the positivist tradition the research must be operationalized in a way that enables measurement of quantitative data (Easterby-Smith et al 2002). By contrast, the tradition of *social constructionism* sees reality as determined by people rather than by objective and external factors. The focus is on the meanings of people and their experiences, and on communication, whether verbal or non-verbal. Additionally, social constructionism is about gathering rich data, including ideas. The research should incorporate the stakeholder perspective, may include the complexity of “whole” situations, with generalizations on the basis of theoretical abstraction.

Regarding my intention to find out more about the opportunities and challenges within Nordic-Russian cooperation on renewable energy from a broad perspective, and the fact that this cooperation seems to be in an early stage of its development, it was not easy to identify many companies with relevant experience in the field in question. This gave me the idea of reaching for in-depth knowledge through a limited number of respondents. Bearing this in mind, when considering the two philosophical perspectives, I tended in the direction of social constructionism. This was because of the anticipated low number of businesses with this kind of experience, but also because through this approach I could focus on what I believe is essential for any type of cooperation: people and their experiences. From this perspective I will argue that the social constructionist approach could provide me rich and valuable insights and a deeper understanding of the research question. Nevertheless, research will seldom fit perfectly into only one of these positions, also with this thesis although the philosophical position appears closest the social constructionist view. With such a starting point, my approach will enable *inductive research*, which is a study in which theory is developed from observations of empirical reality (Collis & Hussey 1997:15). This also means that I will focus on interpretation and collecting qualitative data without having to generalize them. However, it is possible to generate some conclusions that might be in-between inductive and deductive research. The choice of research approach can be done in the way Easterby-Smith et al. (2002) suggest. In the continuation I will look at four different features, and how these features



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will be approached in my research.

Regarding the *role of the researcher*, because this research belongs in the philosophical field of social constructionism, the focus will be on inventions, meanings, reflexivity, conversation, sense making and understanding. To achieve this, the role as a researcher will have to be independent, but also involved. This is because throughout the process I need to strive for a deeper understanding in order to catch the meanings of the respondents, and at the same time I need to maintain some distance. We return to these points in the continuation of this chapter.

Regarding *theory and data*, I will need a good understanding of the various aspects that influence Nordic-Russian cooperation within renewable energy. This could be national or international trends, or more general developments in society. Additionally, I will argue the need to go through the specific theoretic fields of renewable energy and forms of cooperation in order to develop a sensible interview guide and achieve a good understanding of similar studies. According to Easterby Smith et al. (2002), one should not try to generalize work within the field of social constructionists, because it may result in a framework that is inappropriately forced on others. This means that my findings should be understood in the context of Nordic-Russian cooperation. The focus will be on local knowledge: it will not generate universal knowledge due to the limited number of respondents and the qualitative approach.

### **3.3 Selection**

My interest in this thesis is to study factors relevant in understanding the opportunities and challenges within Nordic-Russian cooperation on renewable energy. The purpose of this study is to gather experiences from actors that have been, or currently are involved in this type of cooperation. Based on this, I will argue the need to find a selection of Nordic companies and other organizations where such activities play a prominent role.

The selection of the respondents is not naturally given. Johannesen et al. (2004) suggest a number of different selection criteria depending on the research problem. I have chosen a

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qualitative approach to the research question, and want to obtain much information from a limited number of respondents. I consider a random selection inappropriate for this project because it would require a list or an overview of the population, and I was not able to identify this during the work. Regarding the number of respondents, Johannesen et al. (2004) state that there is no limit to the number of interviews that can be done in a qualitative study, but indicate the ideal number as being between 10 and 15 respondents. With practical limitations, such as the limited time period and the resources for travel in the Nordic countries, I chose to carry out approximately 10 to 12 interviews. My goal was to identify key respondents rather than a very large number, and to include a broad perspective with respondents that could represent various perspectives and shed light on different aspects of cooperation within this field. In the literature, Johannesen et al. (2004) refer to purposeful sampling, which means that the researcher has chosen to comprehend the selection in a strategic manner. The criterion for the selection through such an approach are not given in advance, and might crystallize throughout the work with the study (Johannesen et al. 2004). My selection of respondents was therefore not done in order to generate representative results, but to identify adequate and suitable respondents.

There are various ways of conducting a strategic selection, and I considered using what Johannesen et al. (2004) refer to as “*maximum variation*”: selecting respondents on the basis of different distinguishing marks. For instance, what country or which type of renewable resource they focus on, or which type of approach they have (company, research, NGO, political). However, an approach through “*maximum variation*” requires that interviews are carried out and analysed and new respondents are chosen on this basis. With the time limit involved in this study, it was not practically possible to carry out my work in such a manner. As there existed no given overview of whom to contact I chose the “*snowball method*”, which Johannesen et al. (2004) explain as a method where the researcher tries to identify persons with a high degree of knowledge on a specific topic, and then ask them about other potential respondents of relevance.

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This was how the snowball started rolling: Colleagues working together with me on the project on “Renewable energy and efficiency in Russia” at NUPI knew a few persons who could be of interest, and they recommended a couple. I talked to them, and so forth. In the end, several others had mentioned the selected respondents as central. However, I did to some extent determine some criteria in advance. I wanted the respondents to differ in accordance with the following criteria:

- Involvement in Nordic-Russian cooperation on renewable energy at some level, preferable business cooperation
- Variation in location (Norway, Finland, Denmark, Sweden, Russia)
- Variation in the focused renewable energy source (wind, hydro, bioenergy).

This was done in order to obtain knowledge from different Nordic perspectives. Finally, the selection was done through a combination of the snowball method and selection based on certain criteria.

When I started the search for respondents, I believed there would be quite a number of companies with this type of experience. As the work progressed, however, I soon realized that this was a relatively new field for business cooperation. There seemed to be an evolving interest among companies, with an increase in conferences both in the Nordic countries and in Russia, but not much practical experience. Therefore I decided to include other organizations with long experience from Nordic-Russian cooperation in the energy field because these were most likely to have broad knowledge about opportunities and challenges for cooperation on renewables. By the end of the work I had identified an extended number of companies, and some of these would have been interesting to interview. It was, however, difficult to find a time and place where both the companies and I had time to conduct interviews. I finally ended up with 10 respondents located in Norway, Russia, Sweden, Finland and Denmark. They are all involved in various types of Nordic-Russian cooperation, mainly within the field of renewable energy. One of the authorities, however, was involved in energy cooperation with Russia at a more general level. A more detailed description of the respondents is given in Chapter 3.4.

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In the end, the selection resulted in the following respondents:

**Table 6: Overview of respondents selected**

Location	Organization	Field	Type	Abbreviation
Russia	Nordic Council of Ministers office, Kaliningrad	Renewable energy	Authorities	A
Sweden	Swedish Energy Agency	Bioenergy	Authorities	A
Denmark	Nordic Council of Ministers office, Copenhagen	Energy/Russia	Authorities	A
Norway	Norwegian Wind Energy	Wind	Company	C
Norway	Statkraft	Hydropower	Company	C
Russia	TRICORONA	Carbon credit investments	Company	C
Norway	Rosnor	Hydropower/ advisors	Company	C
Finland	NEFCO	Environmentally friendly energy	financial institution	F
Norway	Bellona	Renewable energy	Non-profit environmental organization	NGO
Sweden	Swedish University of Agricultural Science	Bioenergy	University/ Research	U

### **3.4 Respondents**

As mentioned, ten respondents were interviewed. In the following section I describe their role and relation to Nordic-Russian cooperation on renewable energy, the organization they represent as well as the positions they hold.

*The Nordic Council of Ministers* opened a new office in Kaliningrad, Russia, in 2006. A Nordic Director and a number of local personnel run the office. The aim of the office is to identify relevant Russian partners, facilitate Nordic-Russian cooperation and establish networks with the national authorities, NGOs and other national and international players in the Russian regions. My respondent is the director of the Kaliningrad office and has been responsible since the opening. This person has also been working with energy-related cooperative projects and has also worked on projects in other parts of the Baltic Sea Region and the European part of Russia since 1995.

*The Swedish Energy Agency* was established in 1998 with the aim of transforming the ecological and economic sustainability of the country's energy system. Additionally, the agency guides state capital within the field of energy, through cooperation with trade, industry, energy companies, municipalities and research institutions. Internationally, the agency is active in several forums and has been involved in cooperation in the Baltic States as well as in Russia. My respondent is working at the Swedish Energy Agency, currently with the department of administration and finance, but has been involved in several energy projects in Russia and the Baltic States. Among these projects, approximately 45 involved installation of biofuel boilers instead of oil. From 1997 to 1998 the respondent was involved in cooperation in the Baltic Sea region on the industrial level, dealing with the implementation of Nordic products in the energy sector in Russia. This person was later appointed Head of a Nordic group within BASREC, working on bioenergy cooperation in the Baltic Sea Region including Russia.

*The Nordic Council of Ministers*, with headquarters in Copenhagen, was formed in 1971, and acts as a forum for Nordic governmental cooperation. The Nordic countries work together in several different areas and with many countries, including energy and Russia.

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Two respondents participated in the interview, one with expert competence on energy cooperation, the other one with expertise on cooperation with Russia.

*Norwegian Wind Energy* is a consultancy and project company which aims to establish renewable energy production at suitable sites in Norway and abroad. The company has more than 10 years of experience in dealing with issues concerning wind power, and is also the biggest shareholder in the Norwegian-Russian joint venture VetroEnergo. My respondent from the Norwegian Wind Energy has followed developments from the very beginning. Additionally this person has 10 years of experience from cooperation with Russia through the establishment of windmills in Murmansk, and has been actively involved in the establishment of VetroEnergo.

*Statkraft* is a Norwegian company that is a leader in Europe in the field of renewable energy. The company generates hydropower, wind power and district heating and constructs gas power plants in Germany and Norway. Additionally, Statkraft is a major player in European energy exchanges and is owned by the Norwegian state. Regarding cooperation with Russia, the company has a range of ongoing collaboration projects on hydropower, and has had a Russian partner since 2002. Its main Russian partner is Hydro OGT, with which it has a cooperative platform. My respondent heads the company's activities towards Russia, and has especially been responsible for the calculations and the economics on Russian projects.

*Tricorona* is a Swedish-owned company with a subsidiary in Moscow. The company has been listed on the Stockholm stock exchange since 1989, and is the second largest buyer of climate development mechanisms worldwide. Its main business today is investments in carbon credits, with activities carried out within the framework of the Kyoto Protocol. My respondent started a Swedish-Russian joint venture within this field three years ago, but realized that they were too small operating alone. The original company was then sold to Tricorona in 2006. The respondent is responsible for Eastern Europe, is fluent in Russian and is working in Russia.

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*Rosnor* is a Norwegian-Russian joint venture working with Russian power companies with plans to develop hydropower plants and other renewable energy. Additionally Rosnor is working on a project with the Norwegian Ministry of Petroleum and Energy aimed at establishing cooperation between the two countries in order to promote small hydro investments in Russia. My respondent has long experience from the Norwegian and Russian hydropower sectors, works partly in Moscow, and speaks Russian.

*The Nordic Environment Finance Corporation (NEFCO)* is an international financial institution established in 1990 by Finland, Denmark, Norway, Sweden and Iceland. To date, NEFCO has financed a wide range of environmental projects in Central and Eastern European countries, including Russia, Belarus and Ukraine. NEFCO's headquarters are in Helsinki and its activities are focused on projects that achieve cost-effective environmental benefits across the region. My respondent has been working in NEFCO since 2002 as a Special Advisor on Energy and Environment. The respondent has experience from the financial sector, and has previously worked for the World Bank's office in Moscow, involved in their establishment of a project called "Russia's renewable energy program".

*Bellona* was formed in 1986 as an environmental, non-profit foundation. It has particularly worked on nuclear contamination in Russia, but has also carried out studies of the potential for renewable energy at the Kola Peninsula. In the spring of 2008 it launched a new initiative for Nordic-Russian cooperation on renewable energy. My respondent from Bellona is working Energy Advisor at the foundation's Russian Department and is currently working on the establishment of a Nordic-Russian Forum for renewable energy as a platform for further Nordic-Russian cooperation within this field. The respondent has broad knowledge of Russia and speaks Russian.

*The Swedish University of Agricultural Science* aims to develop the understanding and sustainable use of biological and natural resources. Its profile areas are genetic resources and biotechnology, climate and ecosystem change and sustainable production. SLU has had bioenergy cooperation with Russia since 2000. My respondent works at SLU as

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Professor in Bioenergy and has been involved in bioenergy projects and cooperation with Russia for the past eight years.

### **3.5 Interview guide**

A semi-structured interview guided by an interview guide seemed a suitable way of carrying out the interviews so as to obtain a good and qualitative understanding of the topic. This interview guide was constructed through a process of reviewing the literature, and deliberating what type of information I really wanted from my respondents. I started out with a list of keywords and short questions that might worth looking further into, and went back to the literature and tried to connect these keywords to relevant and central theory.

- Motivation
- International cooperation
- Organization
- Strategy
- Goals
- Why Nordic cooperation on renewables with Russia?
- Who initiates the cooperation?
- What do they want from cooperation?
- What is the goal of the cooperation?
- Why cooperate?
- What do they cooperate about? (Resources, knowledge...etc.)

This work yielded six central issues I wanted to focus on due to the work I had done with the theory framework. The following topics were covered through the interview guide:

1. Renewable energy
2. Idea of Nordic/Russian cooperation on renewable energy
3. Institutionalization
4. The cooperation
5. Opportunities for Nordic-Russian cooperation on renewable energy
6. Challenges and barriers



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Under each of these topics, I listed open-ended questions and keywords guided by the understanding from theory. Additionally, I received feedback from my colleagues at the Energy Program at NUPI working on renewable energy and efficiency in Russia, as well as my advisor at HHB and another researcher from a different research institute. I chose to write the interview guide in English, as I would carry out interviews in different Nordic countries and, possibly, interview people from Finland. This choice of language seemed natural, as the master thesis was required to be written in English. All respondents had good English skills and the conversations flowed smoothly.

### **3.6 Data gathering**

In order to investigate my research problem I used the following methods:

**Primary Data:** In the early stages of the work with this thesis, I chose to review some literature for the purpose of creating a pre-understanding of this problem. This was done in order to identify areas that could be interesting to include in the interviews. From this I realized the need to gather empirical data in order to answer my research question. The empirical data were gathered from the respondents and the interviews were carried out between February and April 2008. The data were gathered mainly from persons with long experience from cooperation with Russia and the renewable energy sector. This was done in order to obtain sufficient and relevant information from individuals with a good understanding of the current issues, opportunities and challenges for cooperation.

Johannesen et al. (2004) emphasize that the relation between the interviewer and respondent influences the degree of information from interviews. Moreover, the setting for the interview could both open and close doors (McKinnon 1988). I was aware of this, and wanted primarily to interview people face-to-face in order to establish good relations. The telephone provides less information to the interviewer, as body language and gestures are not conveyed. Even though I started with this intention, practical circumstances like travel costs and lack of time made me realize the need to carry out some of the interviews by telephone. In the end, three of the interviews were done face-to-face, two at the respondent's office and one at NUPI, while the other seven were carried out by phone. I had, however, met one of the respondents interviewed by phone

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face-to-face earlier. I focused on establishing a good understanding between me and the respondents by e-mailing them first, telling them about the problem statement and the project of which it was to be a part. In many cases they mailed me back and told a little about their links with Nordic-Russian cooperation on renewable energy. When I started, I believed that the telephone interviews and the face-to-face interview could be very different regarding time or degree of openness among the respondents, but the overall impression from the 10 interviews was that this seemed to depend much more on personality than the way it was carried out. Interviews lasted from 45 minutes up to an hour and a half, and there was no tendency for telephone interviews to become shorter or less detailed.

### **3.7 Systematizing the data**

The interviews were recorded and transcribed in their entirety. The choice of utilizing English as language made this process easier as I did not have to translate anything and the responses could be presented just as the respondents expressed them. After doing this, I had approximately 70 fully written pages and I needed to find a suitable method of systematizing the data. Easterby-Smith et al. (2002) mention two different methods for such systematization. The first one concerns analysis of the content, which means analysing the content of words within the data material from the interviews. The second method, basic analysis, involves finding topics, system or categories. I could probably have used both of these methods, but ended up trying to categorize the data into logical categories that derived from the respondents' way of viewing Nordic-Russian cooperation on renewable energy.

This structuring of data by categorizing such a huge amount of information is definitely a challenging task. Easterby-Smith et al. (2004:117) confirm this, and state that one of the challenges is *“how to condense highly complex and context-bound information into a format which tells a story in a way that is fully convincing to the reader”*. This was also a big challenge to me. With the great amount of information, I needed to sort out the relevant bits from the less important information. What I did was to use the existing structure outlined in the interview guide, and sort out the replies question by question. I

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then put the replies from each of the respondents into tables where the essence of their own words and opinions was presented. Afterwards, I categorized the answers under each question, and tried to identify similarities or dissimilarities in order to be able to compare the answers. Additionally, I marked the respondents with different symbols:

**C** = Companies

**A** = Authorities

**NGO** = Non-governmental organization

**F** = Financial institution

**U** = University

Initially I also marked the respondent with the first letter from the country they were located/worked: N= Norway, R= Russia, S= Sweden, D= Denmark, F= Finland. However, I found out that this systematization did not provide much useful information, with only one respondent located in Finland and one in Denmark. Therefore I chose not to include this information.

In some of the questions the answers were similar with the same general opinion. In such cases I made one category for this. By doing this with the whole material, I ended up with a categorized material but was still not satisfied with the structure. Therefore I kept the categories I had made but tried to count how many of the respondents had stated the same views, and tallied this in tables. Even though the number of respondents is quite low, this made it all a bit clearer and helped me to outline the main tendencies. The extensive use of tables may appear a bit strange when carrying out what was basically qualitative research. However, I will argue that it was very useful due to the large amount of information. Additionally, the tables summarize the empirical findings quite well.

### **3.8 Role of the researcher**

In quantitative and positivist research, there has always been a high demand for objectivity. In light of the methodological choices I have argued for above, pure objectivity is difficult to unite with the qualitative approach. The role of the researcher will in this case be somehow more involved, as there is a need to interpret the answers from the respondents as well as their understanding of reality. Thereby the researcher

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becomes more actively involved in the interview. According to Johannesen et al. (2004), the role of the researcher depends on the degree of openness and participation. They refer to four different types of roles of observation, as shown in Table 7.

**Table 7: Types of research and observer roles (Johannesen et al. 2004:130)**

	<b>Hidden</b>	<b>Open</b>
<b>Participating</b>	Complete participant	Observing participant
<b>Not participating</b>	Pure observer	Present observer

Johannesen et al. (2004) state that complete *participation* means that the researcher is a part of the environment she studies. As I myself had no previous connections to any of the respondents or organizations, I will argue that my role as a researcher not can be described as completely participating. An *observing participant* will, on the other hand, be open about her role, but will participate and be involve in the environment what is studied. Since I did not participate as a researcher in such a manner, I do not consider this type of role to be a suitable typification for this research. Neither is the *pure observer* role, as this is a type of role that is hidden for the respondents. I was open about the type of research, the purpose and the aim of it, and at the same time I took on a sort of role as an interpreter. According to Johannesen et al. (2004), the *present observer* does not participate so much in the ordinary interaction with respondents, but is involved through interviews and conversations. Based on the reflections above, the problem statement and the way I conducted the research, I argue that my role as a researcher appears closest to that of the present observer, as indicated in Table 7 above.

### **3.9 Research and ethical considerations**

Doing research makes it necessary to consider various ethical issues throughout the process (Collis and Hussey 1997). Recent years have seen cases in Norway where researchers have not maintained the ethical standards expected of them. Of course one hopes that this is not the norm among researchers, but it illustrates the need to constantly focus on the ethical aspects involved in research.

What kind of ethical problems might occur? Based on the theory presented by Collis and Hussey (1997), I would like to present and discuss some dilemmas of current interest that

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might be an issue in within my piece of research. Ringdal (2001) emphasizes two types of ethical considerations in relation to research. One of these is the ethical consideration related to the research process, while the other is related to protection of privacy and the researcher's responsibility and use of these research results. In the continuation I would like to comment on issues that I have been aware of when conducting work on this thesis.

First of all I felt very humbled by the trust and time the respondents gave me. Many of these are very busy people, but still they prioritized this project and thesis. I felt a strong responsibility for presenting the facts in a correct manner. This is something that Easterby-Smith et al. (2004) also emphasize. Additionally, I was afraid of presenting opinions and views that could lead back to the respondents and I must admit that it was challenging to maintain an adequate balance. Easterby-Smith et al. (2004) also emphasize the importance of the researcher's ability to listen without putting his or her personal opinions and subjective interpretations into the picture. Since I am an energy student, I knew this sector to a certain degree. However I deliberately focused on being open-minded when meeting all of the respondents, so as not to favour certain aspects in categorizing the data. The choice of recording and transcribing the interviews was also done in order to prevent this.

This thesis has been written with some economic support from NUPI, and I would like to make it clear that this not has influenced any choices throughout the research process. Neither do I feel that these connections have presented me with ethical dilemmas or issues related to the findings and the presentation of these.

### ***3.10 Possible weaknesses in research method***

This study has several limitations. First of all, I need to underline the importance of the respondents, and emphasize that they were selected for this purpose. It is important to note that opportunities and barriers will depend on the type of company, the resources the company possesses, as well as support systems in each of the Nordic countries. There are a majority of Norwegian and Swedish respondents, with only one representative from Finland. This might have resulted in a greater focus on hydro than it could have been the

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case with a larger number of Finnish respondents. Further, it might be a drawback that I did not manage to include some of the big Danish or Finnish companies involved in cooperation within this field. I have devoted little (if any) space to discussing any Nordic differences within this field. The Nordic cultures are similar, but not identical, and referring to the Nordic countries as one single unit might be a weakness.

Cooperation involves two or more parties working together, and it would have strengthened the thesis to involve the Russian side in this study. Even though two of the respondents were living in Russia, it is important to note that this is a study seen through “Nordic eyes”.

Interviewing only one respondent in each of the companies and organizations could be a disadvantage because other respondents might have provided different answers. However, the theory indicates that the ideal number of respondents in a qualitative analysis is in the range of 10 to 15 respondents. In relation to the possible and practical limitations mentioned earlier, I found it acceptable to include ten.

As to methodology, I might have used method triangulation and used a brief, quantitative questionnaire in order to confirm or reject the results regarding opportunities and barriers in relation to Nordic-Russian cooperation on renewable energy.

### **3.11 Trustworthiness – Internal and external validity**

Validity, or the methodological quality of the research, is central, as all types of research contain strengths and weaknesses. Validity is important in establishing the trustworthiness of the research and the empirical findings. In the following, I cover internal validity, possible weaknesses and what I have done in order to counter these, before I end with some reflections on external validity.

In the literature, Johannesen et al. (2004) emphasize two techniques that can increase the probability of trustworthiness in qualitative research: *triangulation*, and *continuing observation*. Continuing observation means that the researcher has to invest sufficient time in order to get to know the field. Additionally it is important to obtain trust and a

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good understanding of the context. Thus, I sought to increase the trustworthiness of this thesis by spending a considerable amount of time reading and talking to people familiar with the field. This I did in order to be able to distinguish between relevant and irrelevant information. I also tried to get a good overview of the Nordic countries as well as the Russian context regarding resources on renewable and non-renewable energy, looking for previous projects involving one or more of the relevant countries. Throughout the work I felt increasingly confident because of the insights I had obtained.

In relation to internal validity, Easterby-Smith et al. (2004) underline the importance of getting access to the experience of the respondents in the study. Initially I did not want to send the interview guide to the respondents in advance. However, since a number of interviews were carried out by phone, I found it logical to do so in order to let the respondent be somewhat better prepared. A further reason was the limited time the respondents had, and the fact that I often had to spend some minutes in getting acquainted with the individuals. Letting them know the questions in advance might be seen as a drawback as the respondents had the possibility to think through the answers carefully, perhaps “sorting out” some experiences they did not want to share. However, when I interviewed them, it emerged that most of them had not had time to look at the interview guide, and only two were well prepared with notes in the face-to-face interviews. Therefore I do not believe that letting them see the interview guide in advance made the majority of the answers less spontaneous or more “calculated”.

In qualitative research there are many sources of potential misinterpretations. Among these threats, McKinnon (1988) emphasizes that the interviewer might present the facts in a wrong way or with errors, because of the influence of the researcher's personal opinions. In order to avoid these potential sources of misinterpretation and error, I wanted to ensure the quality of the research by formulating the research questions on the basis of the theoretical foundations. I organized my work further with headlines reflecting the theoretic anchoring. I feel that this contributed to ensuring the quality of the interview guide. I also opted for open-ended questions, in order to influence the respondents as little as possible and let them bring in their own experiences and reflections. Furthermore, I recorded the interviews in order to obtain and collect the data as accurately as possible.

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Afterwards I transcribed the recorded interviews into a full text version, and sent my transcriptions from the interviews to the respondents, which gave them a chance to comment on possible misunderstandings or errors in my notes. Seven of the respondents gave me feedback which I implemented in the work. Three of them did not reply, which I understood as signifying approval. This procedure helped to ensure the quality of the information gathered through the interviews, and to correct errors. By doing this, I felt the final data material was as accurate as it could be.

Despite my several efforts to avoid or counter the potential threats to the internal validity of this thesis, there remain many other factors that might have weakened it. Easterby-Smith et al. (2004) state that one can never be 100% sure that the researcher has succeeded in gathering the right information. The same authors also state that the researcher has to accept the fact that there will not be much chance to question the information provided by the respondents. On the whole, however, I regard the overall internal validity of this thesis to be good.

According to Riege (2003), the external validity concerns whether the empirical findings may be relevant for similar groups of respondents. If this is the case, the external validity is regarded to be good. In the initial parts of this thesis I presented this field as an area with relatively little existing research. Following this reasoning, I find it difficult to compare this with similar studies. Nevertheless I have gone through the theory chapter and compared my findings to this. Therefore, it is possible to compare the findings with studies involving a similar selection of respondents who have been working together with Russia on renewable energy. This means that the findings from this study can be generalized to be of relevance for studies with a similar group of respondents.

### **3.12 Summary**

I have now accounted for the methodological approach to this thesis, including my philosophical position, the selection, the interview guide and how I have systematized the data. I have also explained the strengths and limitations of this thesis, the ethical considerations and how I assess the external and internal validity of this thesis.

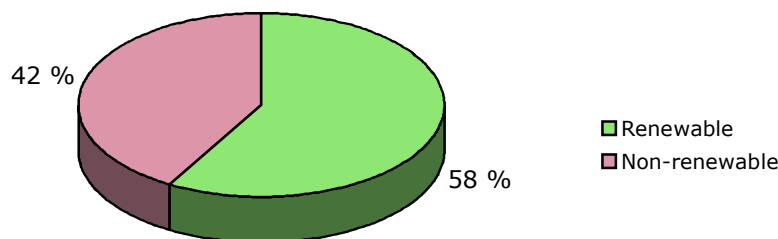


## 4 THE CONTEXT – NORDIC-RUSSIAN COOPERATION ON RENEWABLE ENERGY

The purpose of this section is to account for some central aspects of the context of this thesis. By doing this, I hope to provide the reader with a better understanding of the context for Nordic-Russian cooperation on renewable energy.

### 4.1 Renewable energy in the Nordic countries

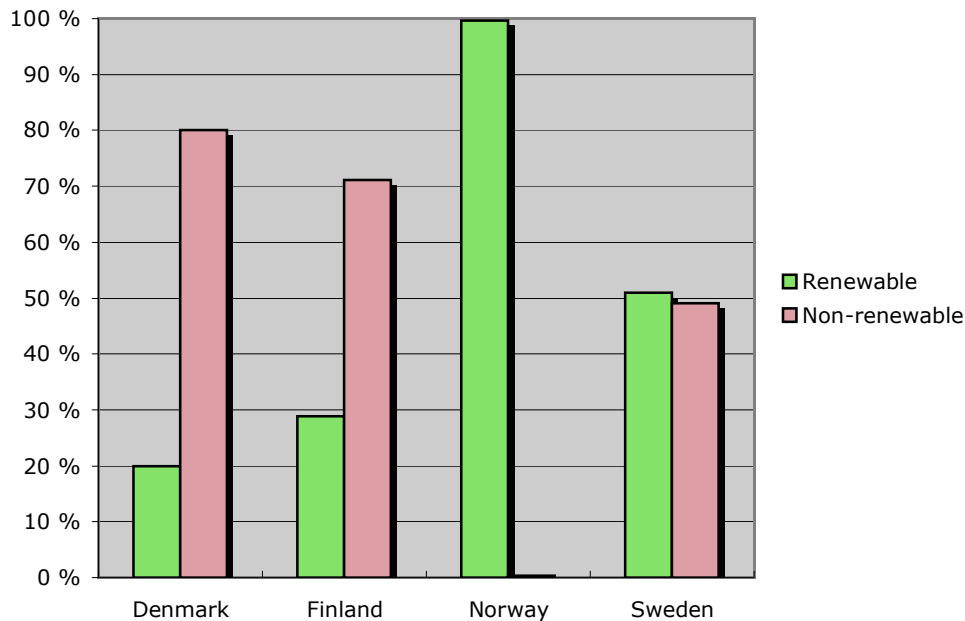
In order to picture the main structures in the Nordic market for renewable energy, I present the main figures on electricity generation in the Nordic countries (Iceland not included). As can be seen from Figure 7, 58.4% of the electricity generated in the Nordic countries is renewable. This includes hydro, wind, waste and bioenergy. On the other hand, 41.6% of the electricity generated in the Nordic countries originates from non-renewable sources, including oil, natural gas, coal, peat and nuclear.



**Figure 7: Total electricity generation in the Nordic countries 2006 (based on statistics from Nordel)**

In Figure 8 we can see that the share of electricity generated from renewable energy sources differs among the Nordic countries. Norway has the highest share of electricity generated from renewable energy sources, with 99.7%, while Sweden is number two, with a 51% share. Finland has a 28.9% share of electricity generated from renewable sources, while the figure for Denmark is only 19.9%.

## Context



**Figure 8: Total electricity generation in the Nordic countries, by countries 2006 (based on statistics from Nordel)**

From this it may appear that Norway is the most successful Nordic country regarding renewable energy. However, Figure 9 shows the underlying explanatory factors, which can provide a wider picture of the renewable energy situation in the Nordic countries.

The role of renewable energy and the dominance of the different renewable energy sources varies among the Nordic countries. *Norway's* high score on electricity generated from renewable energy sources is based solely on the country's hydropower production. Only 0.6% of the electricity generated in Norway comes from wind, 0.3% from biofuels and as little as 0.2% from waste. Thus, the high share of electricity generated from renewables in Norway is overwhelmingly due to the country's exploitation of natural advantages and the development of hydropower plants for electricity production.

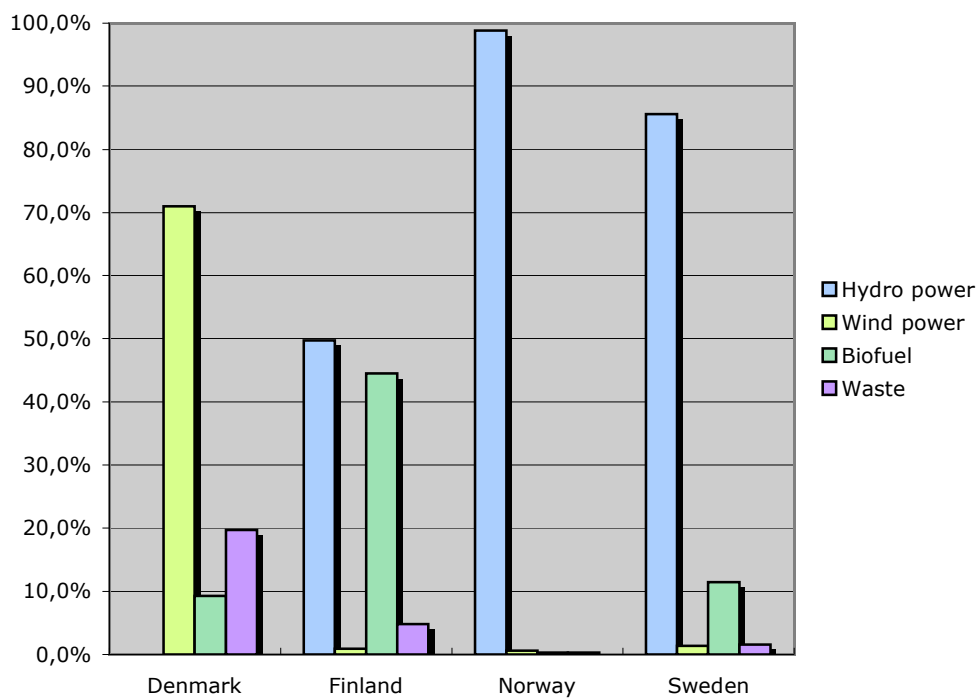
*Sweden* has, like Norway, a high level of hydropower production, with 85.6% of its electricity generated from renewables. Electricity production from waste and wind is on a modest level, represented respectively by a 1.5% and a 1.4% share. Biofuels, on the other

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hand, have reached 11.5%.

For *Finland* the situation is quite different. Here the production of electricity generated from renewables is composed of a 50% share from hydropower, 5% from waste and 1% from wind. In addition, Finland has the highest Nordic level of electricity generated from biofuels, a 44% share.

*Denmark* stands out the most from the other Nordic countries. As much as 70% of the electricity generated from renewable energy sources comes from wind, 20% from waste, while the remaining 10% originates from biofuels. Without mountain rivers, there is no hydropower production, and this seems to have led to the development and focus on other renewable sources.



**Figure 9: Electricity generated from renewables in the Nordic countries, by source 2006 (based on statistics from Nordel)**

## Context

From these figures it is clear that the *Nordic countries* have quite different structures in the renewable energy sector. However, as we saw initially, the total amount of electricity generated from renewable energy is as much as 58.4%. This means that all the Nordic countries possess a high degree of technical expertise regarding renewable energy, and this means knowledge and technologies that may be exported for others to use (Finnish Government, Minister Lehtomaki 2007). The type of source varies from country to country, but the different sources like wind, hydro, waste, biofuels are all areas where Nordic countries possess experience and knowledge.

### **4.2 Russian energy sector and renewable energy**

Let me now present some important structures in the Russian energy sector, so that we may better understand important underlying factors influencing the conditions, opportunities and barriers to renewable energy cooperation with Russia. Furthermore, I will discuss the renewable energy structures.

Russia is the world's largest energy producer and exporter, when both nuclear, hydro and fossil fuels are taken into account, including uranium exports (IEA Renewables in Russia 2003). It also has a strong track record of scientific research into renewable energy technologies. In the early 1930s, the USSR constructed the first utility-scale wind turbines in the world. The first Russian atlas of wind energy resources was published in 1935. Over 7000 small-scale hydropower stations were built in the late 1940s. Research on photovoltaic cells was advanced due to the space programme, and the first solar-powered satellite, Sputnik 3, went into orbit in 1958. The 5 MWs Pauzhetskaya geothermal power station was completed in 1967, and a 450 kW tidal power station was built in 1968 (IEA 2003).

Unfortunately, this tradition fell into decline in the late 1960s and 1970s, when central Soviet planners came to favour nuclear energy and fossil fuels. Now, however, new opportunities are opening up. Russia has much to gain from trade in CO<sub>2</sub> emissions under the Kyoto Protocol. A law promoting renewable energy has been drafted, and the startling inefficiency of the country's energy consumption is becoming even more

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unsustainable due to rising energy prices. A supply crunch for Russian natural gas is expected in 2010 or 2011 (IEA). An estimated ten million Russians are not connected to electricity grid and use diesel generators. Twenty-two million Russian families have *dachas* (summer houses), usually without electricity. Five million farms have no electricity (Karabanov 2001).

Some municipalities and provinces spend over half of their budget on fossil fuels. Russia has the largest forest-covered area in the world, and most waste from the forestry sector goes unused. At the same time the economy has almost doubled since 1998. All these factors contribute to the rebirth of renewable energy and energy efficiency research in Russia. The country is emerging as an interesting partner for scientific research and as a promising market for Nordic technology (Øverland 2007).

### **4.2.1 Russian energy sector**

Control of the Russian energy sector is primarily concentrated to the State, the Kremlin, the Presidential Administration and the President himself (Larsson 2006). In the Russian energy sector, the President holds the power over several formal and informal mechanisms. In general the President and his administration came to gain increased control during the presidential period of Putin (Larsson 2006). In addition to this, the president's power and control over the Duma increased radically under Putin's influence. This has also increased the president's control over the energy sector and the control over energy-related issues and decisions made by the Duma.

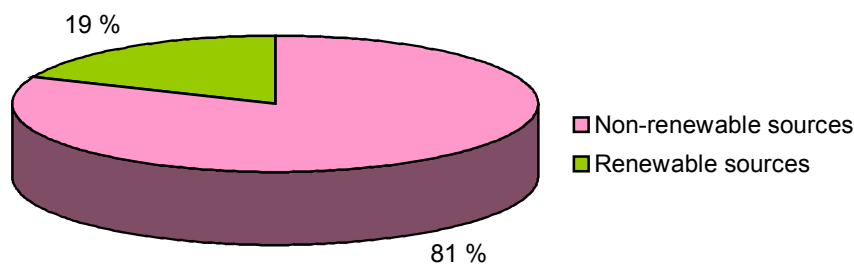
In the energy companies, control is also exercised through ownership by the state. The largest energy companies in the Russian energy sector are Gazprom and RAO UES. These have the responsibility for, respectively, gas supply and power supply in Russia. In RAO UES, the state holds a 52% share of the company. In Russia, the shareholder percentage is not always a good indicator of the power of the state, but should rather be evaluated through the board members' links to state-related organizations. Within the board of the power company RAO UES, there are for instance several ministers and representatives from Kremlin. This shows the exceptionally strong connections between the state and the energy sector. Regarding *bureaucratic control* in the energy sector, it is

## Context

often difficult to identify which responsibility and what kind of authority is held by the various parts of the state. The general impression in the energy sector is that there is a diffuse situation regarding decision-making and structures.

Based on this very brief description of the Russian energy sector, I want to show the reader how the political sphere and the energy sector are linked together and how these structures of power control the energy sector as a whole. In the following we will look more closely into the role of renewable energy in Russia.

### 4.2.2 Renewable energy in Russia

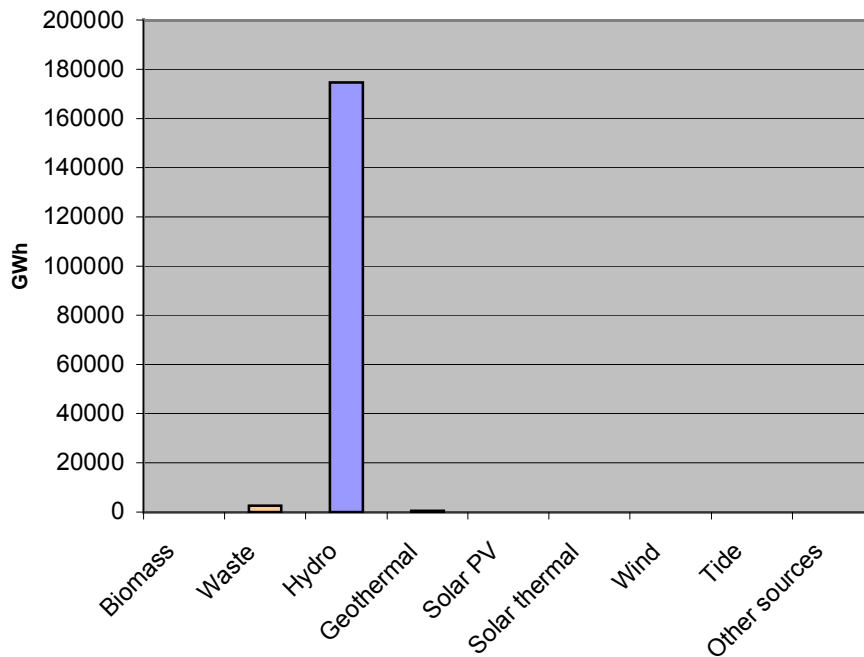


**Figure 10: Electricity generation in Russia. Source: IEA – 2005**

In Russia, 19% of the electricity produced comes from renewable energy sources when large hydro is included, while the remaining 81% is produced from non-renewable sources (IEA 2005). Thus the share of electricity produced from renewables is significantly lower than in the Nordic countries, though relatively high by international standards.

## Context

Of the 19% electricity generated from renewables, we can see from Figure 11 that Russian electricity production comes from hydro (174,604 GWh/year), but also a small amount from biomass (41 GWh/year) and waste (2,597 GWh/year) and an almost negligible part from wind (a mere 7 GWh/year).



**Figure 11: Energy generation from renewable sources in Russia 2005 (IEA)**

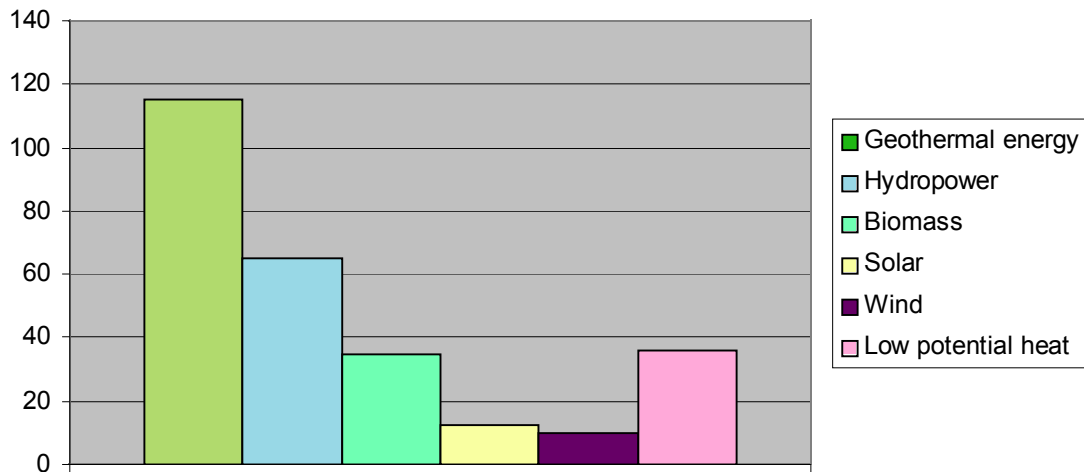
### **The market context**

According to the IEA (2003), Russia's use of renewable energy at this point is very low, even though the country has enormous wind, hydro, geothermal, biomass and solar energy resources. The estimated potential is at a level of  $2.3 \times 10^6$  million tons of coal equivalent (mtce) per year, while the economic potential is approximately 270 mtce (EU-Russia Technology Centre 2004). When it comes to Russia's energy balance, statistics show that the share of renewable energy is about 1%. However, the combination of modern, existing renewable energy technologies and Russia's rich energy resources could generate great economic benefits (IEA/OECD 2003), especially in connection with Russian participation in the Kyoto Protocol; the country is well suited to foreign investments in this domain (OECD/IES 2003). Russia's ratification of the Kyoto Protocol

## Context

marked in several ways the beginning of a new era for the country's renewable energy industry (Brown 2005).

In the following I look further into the Russian potential for renewable energy, divided into the various categories of renewable energy sources.



**Figure 12: Estimated potential of renewable energy in Russia, in mtce. "Renewables in Russia", IEA - 2003.**

Regarding the renewable energy potential for *geothermal resources*, more than 3000 wells have been drilled to take advantage of this resource. The installed capacity equals approximately 75 MW, and electricity generated from this source represented 0.04% of the total generated in Russia in 2005 (Babajeva 2008). The geothermal resources are mostly used in Krasnodar territory, Dagestan and Kamchatka.

Concerning the Russian energy potential for *small hydro*, this is seen as the most efficient way to solve the energy supply problems in remote areas. Current installed capacity is equivalent to 1000MW. The country's *wind potential* is concentrated along the coast, in the vast territories of steppes and in the mountains in Northwest Russia and Far East. Central areas regarding this source include Kaliningrad, Kalmykia and Krasnodar (Babajeva 2008).



## Context

Concerning Russian installed capacity of renewable energy, we see from Table 8 that large hydro represents the majority, while tide and wind are the sources with lowest installed capacity.

**Table 8: Russian installed capacity (Merle-Beral/ OECD/IEA 2007)**

Type	Installed capacity - MW
Geothermal energy	73
Small Hydro	1,000
Large Hydro	46,000
Biomass	1,270
Wind	14
Tidal	0.4 (Not operationalized)

In addition to the installed capacity there are also several planned projects:

There are hydro projects planned (capacity: 5GW by 2010), as well as wind projects in Kalmykia (23 MW), Kaliningrad (50 MW) and Primorsk (30 MW). In addition, two tidal projects are planned, one at Mezenskaya (19 GW) and another at Tugurskaya (9MW) (Merle-Beral/ OECD/IEA 2007). There might be other planned projects, but comprehensive data are lacking, making it difficult to present a complete overview.

Although the potential of renewable energy in Russia seems to be huge, the sector of renewable energy faces major barriers to investment. These include lack of transparency, competition from subsidized conventional energy sources, and a relatively weak financial industry (OECD/IEA 2003). Additionally, renewable energy seems to be of no particular interest to decision-makers in Moscow, and the absence of a specific national renewable energy strategy as well as adequate legislation and a regulatory framework results in further constraints in the development in the renewable energy market (OECD/IEA 2003). In the following section I account for some of the main features within the Russian framework and conditions for development of renewable energy.

### **4.2.3 Russian framework conditions for renewable energy**

In 2003, Energy Strategy 2020 was drafted. This set up some strategic goals, but no quantitative measures (Merle-Beral/ OECD/IEA 2007). There was also drafted a renewable energy law in 1999, which was vetoed, and another renewable energy law has been drafted since 2004. However, in 2007 a new law passed the State Duma: “On

## Context

Amendments to Legislative Acts of the Russian Federation Regarding measures for the reorganization of the Unified Energy System of Russia". The new law commits the Government to a long-term energy policy in the field of energy efficiency and the RES share of RES-E (Kopylov 2008). The new law defines the following as renewable energy sources:

- Solar energy
- Wind Energy
- Water- stream energy including waste-water energy
- Tidal
- Wave
- Biomass, consumer and production waste
- Biogas, sewage gas and mining gas

According to Kopylov (2008), this new law constitutes the main RES support systems in Russia, and also introduces a system of renewable certificates quite similar to that known from the Nordic countries. Details regarding criteria, procedures and rules are not accounted for in the new law, but are expected to be covered through RES Subordinate Acts in the second or third quarter of 2008. This might indicate that Russia is moving forward regarding the laws and regulations of RES, although the details for the regulatory framework are not yet in place.

### **4.2.4 Russian business culture and environment**

From a Western point of view, the Russian business environment is still different, some 17 years after the fall of the Soviet Union. Russia does not share the same democratic tradition of the Nordic countries, but is characterized by a history of authoritarian and totalitarian power structures. Undoubtedly, this has influenced the Russian business culture, just as the democratic traditions have influenced the Nordic countries. Regarding the business culture, differences are particularly related to unpredictability, bureaucracy in administration, laws and contradicting rules. The laws can be extremely detailed, and may or may not work in practice (Bond & Tykkylainen 1996).

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Russian business culture is different from that of the Nordic countries. According to Hjelm (2008), the differences are especially apparent in the decision-making process, during the process of business development and in client–supplier relations. An overview of some major differences is provided in Table 9.

**Table 9: Differences in business culture (Hjelm 2008)**

<b>Nordic countries</b>	<b>Russia</b>
Informative	Communicative
Homogeneous	Heterogeneous
Product-oriented	Relational
Planning	Intuition
Neutral	Personal, emotional
Democratic	Hierarchy
Honest	Catch the moment
Incorruptible	Circumvent the system
Time-quality	Fast

We see that the differences in the business culture are quite significant, which points up the importance of cultural knowledge and understanding (Hjelm 2008). Such differences are also emphasized by Swahn (2002). One of her conclusions is that the main difference between Norwegian and Russian cultures lies in the latter’s hierarchal structures of society and power distribution (Swahn 2002). Regarding planning, Swahn (2002) holds that that it is essential to follow the schedule in Norway and it is common to be result-oriented, while the Russian way of planning is more short-term and situationally conditioned.

The business cultures also differ regarding the role of leaders. While a good Norwegian boss is seen as someone who is democratic and a team-facilitator, a good Russian boss is assertive and capable of making swift decisions. Additionally, personal relations are accorded much higher priority in Russia than in the Nordic countries (although they can also be important there), and it is crucial to establish such relations in order to come to an agreement on a project or contract (Swahn 2002). Awareness concerning these differences in business culture is vital when collaborating with Russian actors.

### **4.3 Summary**

In this context chapter I have presented an overview of renewable energy in the Nordic countries and Russia. This review of the context for Nordic-Russian cooperation on renewable energy indicates that there would appear to be great potential and possible synergies. The opportunities seem related to the potential and the resource. On the other hand, the review of the contextual factors of Nordic-Russian cooperation reveals different understandings in the culture.

How then are these possible synergies between Nordic and Russian actors and the great potential realized? In the next chapter, experiences from Nordic-Russian cooperation on renewable energy are presented.

## **5 EXPERIENCE OF ORGANIZATIONAL COOPERATION**

Here the essence of the empirical results will be presented within each of the themes in focus in the interview guide. The three main areas discussed in the interviews are:

1. *Idea*
2. *Process*
3. *Structure of cooperation*

In the following I present the main tendencies and contents from the interviews and illustrate the results through tables under each section. I have marked the answers from the respondents with 1 and summed it up at the end of each statement in all the tables except in Table 10 and Table 19. I have also included those respondents who expressed no clear opinion or could not/ did not know. In Table 10 and Table 19 I found it more logical to present the answers somewhat differently, as I did not ask respondents to list all the sources they regarded as renewables, only present their perceptions/definitions. In the following the respondents' experience of organizational cooperation will be covered. First, I present the empirical findings regarding the idea, second the process and third the structure of cooperation.

### **5.1 Idea**

Here I explain the term renewable energy and why Nordic-Russian cooperation seems to be of interest. Furthermore, I account for where the respondents think the idea come from, as well as the opportunities and time horizon for Nordic-Russian cooperation.

#### **5.1.1 Renewable energy**

Regarding *renewable energy*, I asked the respondents about their perception of the term, and how they would define it. My overall impression was that many respondents thought this to be a question with an obvious answer. Table 10, however, shows that this is not confirmed by the replies, as the answers showed that renewable energy could be related to a variety of things. Sources like hydro, wind, biomass are mentioned by many, but

## Experience of organizational cooperation

other things emphasized by the respondents are that renewable energy could be “energy that does not cause CO<sub>2</sub>”, or sustainable energy types. New technologies are also emphasized. Some respondents made a distinction between small and large-scale hydro, but most replies included large-scale hydro under the term of renewable energy, like the following statement from one respondent.

*For me it is the natural and sustainable energy types. It's everything from wind to wave to use of solar energy tidal energy and all hydro. It is the energy that does not cause CO<sub>2</sub> and it is sustainable.*

The variation in answers points up the complexity of renewable energy. As we can see from Table 10, one of the respondents also included woodchips, pellets and energy heating when discussing the term of renewable energy. Gas was also considered to be renewable energy by one of the respondents, but this was not an opinion shared among the rest. Regarding differences between the respondents, we may note that the NGO related renewable energy to sustainable development, while the authorities focused more on the resources. The respondents from companies also related it to the resources, but emphasized the “use” and “harvesting” of these resources. The university respondent was the only one to mention technologies. The main tendency from the interviews is that renewable energy seems to be related to a number of different things and aspects related to the term, which may indicate the need to define and discuss the term.

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**Table 10: What is renewable energy?**

Respondent	What is your perception of renewable energy: how would you define it?
C1	<ul style="list-style-type: none"> <li>• Power that can be harvested without damaging the environment</li> <li>• CO<sub>2</sub> neutral energy</li> </ul>
C2	<ul style="list-style-type: none"> <li>• All kind of renewable sources like hydro, wind, tidal</li> <li>• All kinds of hydro and gas</li> </ul>
C3	<ul style="list-style-type: none"> <li>• Hydropower, wind, wave, tidal, solar, wood, waste, biomass</li> </ul>
C4	<ul style="list-style-type: none"> <li>• Renewable energy is about using the existing sun, wind, wave, biomass, which generates energy.</li> <li>• The resources that causes zero effects on CO<sub>2</sub> emissions</li> </ul>
A1	<ul style="list-style-type: none"> <li>• Energy sources</li> <li>• Hydro, wind, bioenergy, wood</li> </ul>
A2	<ul style="list-style-type: none"> <li>• Bioenergy from forest, woodchips, pellets, energy heating, hydro, wind</li> </ul>
A3	<ul style="list-style-type: none"> <li>• No reply</li> </ul>
F	<ul style="list-style-type: none"> <li>• Wind, hydro, solar and biomass</li> <li>• Big hydro plants are classified differently</li> </ul>
U	<ul style="list-style-type: none"> <li>• New technologies for wind, solar</li> <li>• Also hydro and bioenergy</li> <li>• Sustainable energy source</li> </ul>
NGO	<ul style="list-style-type: none"> <li>• The natural and sustainable types of energy</li> <li>• Wind, wave, solar energy, tidal energy, all hydro.</li> <li>• It is the energy that does not cause CO<sub>2</sub> emissions and it is sustainable.</li> <li>• Anything that is not fossil fuel or nuclear energy would be renewable</li> </ul>

### 5.1.2 Opportunities for renewable energy sources in Russia

When I asked about the opportunities for renewable energy sources, the interviews revealed different types of renewable energy sources, ranging from hydro and wind, to bioenergy, tidal and solar. Many viewed *hydro* as the source with the greatest potential in Russia, but also *wind* and *bioenergy* were emphasized. Bioenergy was mentioned in relation to the enormous forest resources in Russia, and some respondents said that there could be commercially viable projects within a short-term period of time. The opportunities mentioned were in many cases related to Northwest Russia, as many of the respondents in this study were operating there. Statements like the following were rather common:

*Russia is a big country. I will focus on Northwest Russia. All hydro could be possible; when it comes to wind there might be possibilities in Murmansk and Kaliningrad.*

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The interviews revealed that all the companies relate hydropower to the opportunities in the renewable energy sector in Russia, while the university, the financial institution and one of the authorities focused on bioenergy.

Several respondents noted that there could be seasonal complementarities between wind and hydro. This was reasoned from the fact that there is snow rather than rain during wintertime, but good winds at that time of the year. Conversely, summertime is characterized by little wind but good possibilities for rain. The responses are shown in Table 11.

**Table 11: Opportunities for renewable energy sources in Russia**

Which types of renewable energy have the biggest opportunities in Russia?											
	C1	C2	C3	C4	A1	A2	A3	F	U	NGO	Sum
Hydro	1	1	1	1	1	1		1		1	7
Wind	1	1	1		1	1		1		1	6
Bioenergy						1		1	1		3
Tidal		1								1	2
Solar										1	1
No reply							1				1

### 5.1.3 Why is cooperation interesting?

As to why Nordic-Russian cooperation on renewable energy seems interesting, an essential feature appears to be related to the *potential* of renewable energy in Russia as well as the business opportunities these resources represent. Answers like this were not unusual:

*You have to go where the potential is, and certainly in Russia there is a huge potential.*

The great potential of resources seems to serve as a foundation for the business opportunities, and this may be the reason for interest in Nordic-Russian cooperation on renewable energy. This opinion was evident from some of the other respondents as well, but did not appear to be obvious to all. One respondent said that the Nordic-Russian cooperation on renewable energy *is not commercially interesting*. Answers like this were not common, but the respondent reasoned it from the fact that Russia may import technology, for instance, much more cheaply from China. This respondent argued that the



## Experience of organizational cooperation

Nordic countries do not have a great competitive advantage. Thus the replies from the interviews indicate the complexity of this issue, together with a broad reasoning on why Nordic-Russian cooperation on renewable energy seems of interest.

Some respondents emphasized the role of Russia as a neighboring country, and one put it this way:

*The Nordic area is the only area in the western world with border towards Russia. We are linked to Russia if we want it or not. It's a neighbor. I think we should turn the question around and ask why we should not have a business relationship with a neighbor? That would be more surprising.*

I think this statement is an interesting reflection. It shows that the interest also may be founded on geographical closeness and opportunities nearby, where companies might save themselves the need to travel halfway around the globe for new markets. As a supplement to this discussion, some respondents said they were surprised by what they characterized as low Nordic interest in cooperation with Russia on renewable energy. This can possibly be explained by structures for financing, and a key factor for the low interest may be that the Nordic governments have been prioritizing renewable energy investments elsewhere, like Chile, Brazil and Africa. This may indicate that Russia falls in-between the Nordic priorities.

Furthermore, the responses from the university and one of the authorities indicated *exchange of knowledge* as one reason for their interest. I think it is important to note that it was *exchange*, not *transfer*, of knowledge that was emphasized. In the interviews these respondents noted the opportunity to learn from the Russians, as well as teaching them. By contrast, the companies appeared more interested in Nordic-Russian cooperation on renewable energy because of the potential and business possibilities. These factors show that their interest reflects their type of organization. (See Table 12.)

## Experience of organizational cooperation

**Table 12: Why is Nordic-Russian cooperation interesting?**

Why do you think Nordic-Russian cooperation on renewable energy is interesting?											
	C1	C2	C3	C4	A1	A2	A3	F	U	NGO	Sum
Potential of resources	1	1	1		1	1				1	6
Political					1				1		2
Neighbours	1		1	1							3
Business opportunities			1		1			1	1		4
Exchange of knowledge							1		1		2
Not commercially interesting				1							1

### 5.1.4 Where do the ideas come from?

My question about the *idea* of entering into cooperation with Russia on renewable energy generated many different answers. The overall impression from the interviews was that many of the respondents did not really know: they replied that the idea had probably evolved over time, or “just been there” for a long time. There were quite a few answers like this one:

*I think this idea has been long standing, but it has just taken a while for renewable energy to be set on the agenda.*

Other respondents gave different answers that appeared to be more like suggestions than concrete answers. Among the factors emphasized was the political sphere. One respondent answered that the idea might come from the Nordic countries, while another emphasized the culture of industry, business and universities.

The fact that the companies answered with a specific focus on the cooperation they were involved in, and based on Table 13, we can see that the idea for their cooperation seems to derive from the possibilities in the Russian market. A few respondents also mentioned that the Nordic countries and Russia had worked together for a long time in other parts of the energy sector, and that cooperation on renewable energy would be a natural extension of this. The tendencies from the interviews are summarized in Table 13.

## Experience of organizational cooperation

**Table 13: Ideas for Nordic-Russian cooperation**

Where do you think the ideas for Nordic-Russian cooperation on renewable energy come from?											
	C1	C2	C3	C4	A1	A2	A3	FI	U	NGO	Sum
Possibilities	1	1									2
Do not know			1	1			1	1			4
Nordic countries							1				1
Political						1			1	1	3
Evolved over time					1			1		1	3
Culture of industry, business and universities									1		1

### 5.1.5 Initiation of the cooperation

As for the *initiatives* for the cooperation, these can be summed up in one word: *mutuality*. There seem to be a good mix between initiatives coming from the Nordic and the Russian sides. This is perhaps surprising and also interesting as my impression when I started work on this thesis was that the Nordic side was more active than the Russian side. One of the respondents made this reflection about their initiative to cooperate:

*We thought that joining forces would be the best way to achieve something.*

*The Russian side was very positive at all times.*

Altogether there were many answers similar to this. The respondents have in many cases searched actively, and some could tell quite similar stories about meeting Russians who were as keen to initiate similar cooperation as they were. These trends may serve as a good basis for further cooperation within this field.

**Table 14: Initiation of the cooperation**

Who initiated the cooperation?											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	
Nordic side					1?	1	1				3
Russian side	1	1									2
Both			1	1				1	1		3

### 5.1.6 Opportunities for Nordic-Russian cooperation on renewable energy

As we have seen, the interviews indicate that hydro, wind and bioenergy are areas of resources with a sizable potential in Russia, thus representing opportunities. These factors seem no less important when we consider opportunities in more general terms. More

## Experience of organizational cooperation

broadly, the interviews revealed that opportunities seem to lie within the fields of hydropower, wind power and bioenergy. The tendencies appear to be independent of which of the groups the respondents represent. One respondent put it this way:

*By looking at the bare figures, you can see that for the companies focusing on environmentally friendly energy sources, Russia is clearly a target. It's as simple as that.*

In general, respondents tended to be very optimistic regarding the opportunities for Nordic-Russian cooperation in renewable energy, and several mentioned the great opportunities based on the Nordic actors' knowledge and experience from the various renewable energy sectors. A few respondents also noted the opportunities for financially profitable projects in a short-term perspective, and one asked this rhetorical question:

*Why not try to conquer a market that is practically virgin territory in words of certain types of technology?*

To summarize, the interviews indicate that there appear to be good opportunities for Nordic-Russian cooperation within several fields, especially hydro, wind and bioenergy. But even though the respondents pointed out many different opportunities, many quickly moved from talking about opportunities to the challenges and barriers involved. From these interviews, I am convinced that there is a high awareness of the opportunities among the respondents, and these seem directly linked to the potential of the various resources. At the same time there seem to be barriers to be overcome before one can take full advantage of these opportunities. The following positive statement from one of the respondents can summarize this section together with Table 15.

*It's a win-win situation. For the Nordic companies/ business and for Russian society, business as well as the climate.*

## Experience of organizational cooperation

**Table 15: Opportunities**

What opportunities do you think exist for Nordic-Russian cooperation on renewable energy?											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Construction										1	1
Hydro	1	1	1	1	1			1			6
Wind	1	1			1			1			4
Tidal		1									1
Bioenergy					1			1			2
Transfer of technology			1								1
Export of Nordic ideas and standards										1	1
Northwest Russia						1					1
Russian projects/production			1		1						2
Subcontractors					1						1
All sorts of possibilities									1		1
Don't know							1				1

### 5.1.7 Motivation/goal

There seem to be quite different *motives/goals* for Nordic-Russian cooperation on renewable energy. The companies and one of the respondents from the authorities stated that the goal is to gain concrete results through the projects. From a company perspective, this is only to be expected, as their activities must be commercially viable. However, I find it surprisingly positive that one of the respondents from the authorities also noted this as a goal. While many respondents seem to have quite clearly defined goals, this is does not seem to be the case for all of them, and one respondent put it this way:

*We don't have a defined goal but we want to see as many concrete results as possible.*

The NGO and one of the authorities said their motives/goals were ideological, and this was exemplified with the motivation for reducing global warming. The two other representatives of the authorities replied that their motivation for cooperation related to political motives, exemplified with energy security goals and involving Russia in a dialogue. As can be seen from Table 16, the university and one of the companies emphasized knowledge transfer, while the financial institution tries to stick to, and spend the budget, within this market. The overall impression of Nordic-Russian cooperation on renewable energy is that there seem to be several different motivation/goals among the respondents, and the motivation and goals reflect the organizational context in which they operate. This is shown in Table 16.

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**Table 16: Motivation/goal**

Motivation/goal for cooperation on renewable energy											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Ideological motivation						1				1	2
Political motivation						1	1				2
Knowledge transfer			1					1			2
Gain concrete results through projects	1	1		1	1						4
Spend the budget									1		1
Promote investments			1								1

### 5.1.8 Time horizon

As to the *time horizon*, the dominant feature from the interviews was that practically everybody stated that the time horizon for their involvement in Nordic-Russian cooperation on renewable energy was a long-term one. This could be reasoned from the fact that the field of renewable energy is a long-term place to be. One respondent had to some extent experienced this and noted the following in connection with what to expect for the future:

*We have been working in on this project for 10 years, and it has been more like a walk in the desert. Wasn't Moses in Sinai for forty years?*

Such an experience as the one above was not dominant among the respondents, but almost everyone underlined the need to be very patient with the progress in the cooperation. However, it was emphasized that this was usually not a problem among the actors working on renewable energy, as this does not appear to be a business for “fast money”. In consequence, most the actors involved seemed to be able to deal with the underlying long-term conditions in the business of renewable energy. Some respondents said that the time perspective could be a great challenge for companies *wanting* to approach Russia within for instance, the power sector. As an example, there are many small hydropower companies in Norway without the financial muscle to maintain cooperation over a long-term period. The overall impression is that the time horizon for involvement in Nordic-Russian cooperation on renewable energy is a long-term one, regardless of the organizational context the respondents operate in. This is illustrated in Table 17.

## Experience of organizational cooperation

**Table 17: Time horizon**

What is the time horizon for your involvement in Nordic-Russian cooperation, renewable energy?	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
More than 10 years	1										1
Long-term		1	1	1	1	1		1	1	1	8
No reply							1				1

### 5.2 Process

In this section I account for the organizational cooperation within the *process*, such as partner selection, Nordic-Russian complementarities and sources for guidance and norms. Furthermore, I will cover the challenges and barriers within Nordic-Russian cooperation on renewable energy.

#### 5.2.1 Partner selection

*In private life one tends to be really critical regarding whom to engage with. Why not be as least critical when searching for a business partner?*

As to *partner selection* and the companies, one got an invitation to cooperate, while the other three companies referred to their partner selection as a mix of *coincidence* and *choice*. Several respondents underlined the role of their Russian cooperative partners as “interpreters” of the Russian system. In general, the Russian partners seem to be of great importance to the Nordic actors in this study. Statements like the following underlined this:

*The way Russia work, I would be very careful not to have a trusted partner in Russia.*

*Trust* was also discussed under this topic, but seems relevant mainly to the companies. My reflection on this is that it is mainly the companies and the financial institution that are involved in great economic risk, while the others respondents to a different degree function as initiators or facilitators. A respondent from one of the companies put it this way:

*The hardest thing in a new country is to find people you can rely on.*

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Some other companies mentioned the importance of trust between partners, but it was also emphasized that this is nothing unique to Nordic-Russian cooperation on renewable energy, but is a common feature of all kinds of business relations. As noted by one respondent:

*Whenever we sit down to together in order to draft the legal documents you know you have to be aware of the opponent. If you don't do your homework you might be trapped, but this does not have to do with trust, it's business.*

The overall impression from the interviews is that the respondents have been able to establish good relations with their Russian partners. This was confirmed by one respondent:

*I think it is the connections that have led us to the opportunities.*

Another respondent was clear about the fact that they were actively involved in trying to bring Nordic and Russian companies together in a form of “matchmaking”. When asked a bit more about this topic, the respondent explained that they organized workshops and conferences in relation to renewable energy where Nordic and Russian actors could meet. From the data in Table 18, we see that the university, the NGO, the financial institution, one of the authorities as well as one company were contributing to partner selection process. I find this interesting, as it may indicate that the authorities, NGOs and universities function as facilitators and creators of important arenas and meeting points. The authorities involved replied that they were little or not involved in partner selection because this was more or less given by the organizational structures and political priorities. I decided therefore to code these replies as *decided by the organization* in Table 18.

The general impression from the interviews is that the respondents in this study have been able to establish good relations with their Russian partners, with the selection generally characterized by a mix of active search, coincidence, choice and invitations.



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**Table 18: Partner selection**

Partner selection											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Active search	1							1		1	3
Through invitations		1						1			2
Coincident & choice	1		1	1							3
Decided by the organization					1	1	1				3
Bringing together actors			1				1	1	1	1	5

### 5.2.2 Nordic-Russian complementarities

Regarding *complementarities* between Nordic and Russian actors within the field of renewable energy, the factors emphasized were the *local knowledge and potential resources* on the Russian side, and the *Nordic competence and technical knowledge* in the Nordic countries. I think it is noteworthy to see that company 2 (C2) together with the university emphasizes knowledge exchange, while the NGO underline their ability to bring in funding. Normally one would expect that companies would focus more on funding, and the NGO more on knowledge. This finding is interesting and may contribute to create new opportunities within Nordic-Russian cooperation, as the respondents seem to find complementarities within other areas than the apparently “natural” fields. An overview of the various replies is presented in Table 19.

**Table 19: Nordic-Russian complementarities**

Respondent	How do you and your Russian partner / Nordic and Russian actors complement each other?
C1	<ul style="list-style-type: none"> <li>Interested in cooperation on renewable energy at a very early stage (1998), the Russian partners looked for interested partners.</li> </ul>
C2	<ul style="list-style-type: none"> <li>Knowledge exchange</li> </ul>
C3	<ul style="list-style-type: none"> <li>Local Russian knowledge and political contacts vs local Norwegian contacts and knowledge</li> </ul>
C4	<ul style="list-style-type: none"> <li>Nothing in particular</li> </ul>
A1	<ul style="list-style-type: none"> <li>Lack of technology and knowledge in Russia. Nordic countries have a lot to offer.</li> </ul>
A2	<ul style="list-style-type: none"> <li>Enormous resources in Russia, technical knowledge and equipment in the Nordic countries</li> </ul>
A3	<ul style="list-style-type: none"> <li>Nordic countries have a lot of competence on renewable energy and the Russians seem interested in cooperation</li> </ul>
U	<ul style="list-style-type: none"> <li>We had technical and economic knowledge on forest, Russians were more narrow, but knew other things about different types of technologies</li> </ul>
FI	<ul style="list-style-type: none"> <li>You need a local partner in Russia</li> </ul>
NGO	<ul style="list-style-type: none"> <li>They have local knowledge, we're bringing in the funding</li> </ul>

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### 5.2.3 Sources of guidance and norms

In order to form a better understanding of important factors related to opportunities and challenges within Nordic-Russian cooperation on renewable energy, I sought to learn more about what institutions the respondents regarded as central. Several factors appear to be of importance regarding the sources for guidance and norms. One tendency underlines the role of the Nordic national organizations and councils as important in providing guidance for the cooperation. Examples of such organizations are the Danish Trade Council, Innovation Norway or the Swedish Energy Agency, and additionally the national embassies. Many respondents have good relations to one of these, and have received help at some level. In general, the respondents seemed satisfied with the help and guidance provided, but the various national organizations appear to have little coordination and information sharing regarding this field. This might be a challenge, as it could indicate lack of coordination and knowledge sharing among Nordic national institutions. One respondent asks for more cooperation among the Nordic national organizations and councils and more synergies. A heightened business focus from the embassies is wanted because this would create better connections at the political level, which could benefit interested companies.

Additionally, the interviews revealed that Russian institutions, both in Moscow and at local/ regional level, are seen as important. This was also the case with the Russian partner. One respondent made this reflection:

*In the Western part of Europe we have institutionalized very much of our relations. In Russia it's more people to people, and if you manage to establish this kind of relation, it is how you do business. When you get such a relation it is strong but vulnerable, because if someone quits or is replaced, it's back to square one.*

The Russian person-to-person mindset was mentioned by many respondents, without directly relating it to sources for guidance and norms. However, one respondent stated the following:

*The Russian partner is vital for all the information we get and for what we can create together.*

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Even though only two specified stated that the Russian partner was important in providing guidance, this seemed to be of considerable importance to many respondents. Several came with statements to the effect that that there is not a chance to survive without a partner you trust, and a partner that may interpret the Russian context for the Nordic actors. The main tendencies are summarized In Table 20.

**Table 20: Sources for guidance and norms**

<b>What institutions are important in providing guidance for the cooperation your company/ organization is involved in?</b>											
	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>	<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>U</b>	<b>FI</b>	<b>NGO</b>	<b>Sum</b>
Central institutions in Moscow	1								1		2
Local/regional authorities	1								1	1	3
Russian partner		1							1		2
Nordic national organizations/councils				1	1		1	1			4
Nordic financial institutions			1	1	1						3
Universities								1			1
Russian energy associations						1					1
Sector regulators		1									1
BASREC									1		1
NGOs									1		1

### 5.2.4 Challenges and barriers

Now matter how bright the prospects of opportunities may appear, there are some barriers to overcome within the Nordic-Russian cooperation on renewable energy. The respondents seem to have a shared understanding of this, regardless of which of the Nordic countries one represented, and whether the replies came from companies, the non-profit environmental organization, the financial institution, the university or the authorities. I divided the barriers into two categories. One section with barriers is related to the Russian context as the Nordic actors experience it, while the other section is related to the barriers the Nordic actors experience within the Nordic countries. The tendencies from the interviews showed that many barriers seemed to relate to the Russian context, but there were also many opinions.

In fact, barriers were a topic that often came up when discussing the other areas as well. The overall impression is that there seem to be quite a number of barriers. Among the

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respondents, 8 out of 10 emphasized *culture* as a barrier to Nordic-Russian cooperation on renewable energy. This included all the companies, the university, the NGO, one of the authorities and the financial institution. Some additionally said that the cultural barrier is related to the way of thinking, but many were also quite frank about distinct differences in the business culture, which for Nordic people could appear rather strange. The following statement may illustrate this:

*Culture is of importance. Sometimes you have problems communicating. Sometimes the Russians ask if you would like ladies up to your room. It may seem that it is “Russian duty” to make sure you are comfortable, but for Scandinavians, this appears quite strange.*

Another barrier related to the Russian context was *corruption*. This was mentioned by six respondents, and the interviews left little doubt that this is seen as a challenge within the cooperation. The respondents confirm that the Russian business culture is rather different from the Nordic way of doing business. Some said that corruption had never been a problem, but added that they used various kinds of “middlemen” in order to deal with permits, applications and help them to manoeuvre around in the Russian system. This may be a question of how corruption is defined. One respondent put it this way:

*If you pay for something that should be for free, it's corruption.*

I think this sheds light on an important discussion about what is really corruption in the Nordic-Russian cooperation, and whether it is something that is possible to avoid. Two respondents stated very clearly that Nordic actors lack knowledge and competence on the Russian market and that this is a great barrier in the Nordic context. They also made it very clear that if Nordic actors within Nordic-Russian cooperation view culture and corruption as barriers you will not get anywhere, because it is difficult or impossible change the Russian system.

Four out of ten respondents emphasized Russian *bureaucracy* as a barrier within Nordic-Russian cooperation on renewable energy. Many said that this was related to getting licenses to operate and permits, but also the rapid change of officials within the bureaucracy, as the person-to-person relation is so central. One respondent reflected on

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the challenge with the bureaucracy in this way:

*Even if there is a market, even if there is a demand, if you are a foreign operator in the country and someone is putting stones in your wheels all the time, you might realize someday that there is a price for this market and that it's not competitive. The cost of this can be too much. Then you won't do business there.*

I find it logical that culture, corruption and bureaucracy get high scores, as these are areas that may be closely related to each other, and they also shape and influences other areas as well. One respondent emphasized the following, which can be an explanatory factor to why some respondents experience the barriers mentioned above:

*Nordic companies have spent too little time to analyse and understand Russian culture. The knowledge of Russia itself is missing. One barrier is lack of knowledge about Russian society, Russian financial systems, Russian economics, politics, everything. Knowledge about Russia is in general poor.*

This statement shows the complexity of the barriers, but also emphasizes the importance of knowing the business culture and system of the society when entering into Nordic-Russian cooperation on renewable energy. Cultural barriers are often mentioned as barriers to many types of business cooperation, and might sound like a cliché. I believe, however, that the responses leave little doubt as to its importance.

The time aspect was also mentioned as a barrier. From Table 21 we see that *slow progress*, meaning the time it takes to develop projects, is cited as a barrier to Nordic-Russian cooperation on renewable energy. The respondents were quite frank, telling stories about how incredibly long it might take to develop projects, like the one who gave this response:

*I don't know if we had started if we knew it would take such a long time. However, you are always optimistic and look for signs that will tell you that it will change. Now we are looking for the 12<sup>th</sup> sign, hoping that something sustainable will occur.*

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The slow progress is related to bureaucratic obstacles, and to the general Russian view of time, which also can be seen in relation to the culture. One respondent noted the Russian tendency to view time as something that is free, while the Nordic actors believe that time is money.

Regarding other barriers that the respondents have experienced, there also appear to be some challenges related to *legislation* within the field of renewable energy. Many noted the need for a more comprehensive, overall framework. The law seems to be more of a strategic document rather than something concrete, especially when it comes to tariffs for support schemes and other issues related to this. A few mentioned this area of barriers to Nordic-Russian cooperation on renewable energy, but it was also emphasized that the year 2008 could be of great importance, as Russian policy-makers are about to make a new law with concrete support schemes.

From Table 21 we see that *lack of predictability* is another area which two respondents emphasized as barriers in the Russian context. Only two respondents mentioned this explicitly, and here we might note that they are both companies with commercial ambitions. According to one respondent:

*We are still not convinced that Russia is the best place to be, mainly because of the unpredictability.*

The other respondent related this to the risk aspects in the project and said:

*We can deal with the market risk, the price risk, the volume risk and whatever business risk, but whenever the regulatory risk changes rapidly and you can't anticipate what to expect around the next corner, it is tough to do the kind of investment that is needed.*

*Language* was also an area where some respondents had experienced barriers. However, the overall impression from the interviews was that communication between Nordic and Russian partners was solved quite well by using translators and interpreters, communicating in English or by having Russian-speaking staff within their organization.

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Regarding language, one respondent made a point that I think is important to present:

*If you go Denmark and do not speak Danish or English you have a big problem. Same thing with Russia. There are a lot of business areas in Russia where they do not speak English, but it is exactly the same if you go to China, Japan or Congo. This is not Russian specific. If you don't speak the language it is impossible. Try that in Congo. It is common sense.*

This might be common sense, but based on the replies I got through the interviews, language seems to be a barrier that will have to be overcome.

*Problems with the grid* appear to be a more notable barrier, as the lack of a strong grid in Russia influences on the possibility to transport the produced electricity from the north and further south to areas with greater demand. This seems to be a structural barrier in the Russian context. *Russian technical standards* are also a field that two respondents mentioned as a barrier to Nordic-Russian cooperation on renewable energy. The reason for this is that Russia, unlike the countries in the Baltic Sea area, has its own standards on technical equipment instead of following EU standards. This may complicate things a bit, and create delays. As one of the respondents put it:

*It has always been much easier to cooperate with the Baltic countries even long before they became EU members. Russia is much more difficult.*

Another area in which there seem to be barriers concerns *access to information and people*. It seems to be quite difficult to get access to statistics, information and people in state organizations in Russia, and a publicly available overview made in one or several of the Nordic countries is wanted by several respondents.

Even though there seem to be several barriers to Nordic-Russian cooperation on renewable energy, I would like to end this section by quoting one of the respondents and summarizing the challenges and barriers (as set out in Table 21).

*Get away from the barrier-thinking and move on to opportunity-thinking. That's where the opportunities are.*

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**Table 21: Challenges and barriers**

What does not work in existing Nordic-Russian cooperation on renewable energy?												
		C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
R U S S I A N	Access to people & information	1									1	2
	Corruption	1	1	1			1	1		1		6
	Bureaucracy	1					1	1			1	4
	Culture	1	1	1	1		1		1	1	1	8
	Lack of predictability	1	1									2
	Language		1				1					2
	Problems with the grid	1									1	2
	Slow progress		1			1	1					3
	Low Russian investment climate on renewable energy									1		1
	Russian technical standards						1			1		2
	Low Russian demand and awareness for renewable energy				1					1		2
N O R D I C	Lack of political focus											
	Cooperation not systematic enough					1						1
	Nordic equipment companies too small						1					1
	Nordic actors lack knowledge and competence on Russian culture and society		1	1							1	3

### 5.2.5 Main challenge

When I asked the respondents to prioritize the challenges within Nordic-Russian cooperation on renewable energy, I got seven different answers, highlighting very different aspects. Seen in the relation to the question about barriers, one could expect that culture would be emphasized here as well. This is however not the case. As can be seen from Table 22 only one respondent considered this to be the main challenge. In the previous question about the barriers, there were no mentions of *the power of Moscow* as a barrier to Nordic-Russian cooperation, while, from the answers presented, this emerges as the main challenge for 3 out of the 10 respondents. The differences in the answers might be explained from the way the questions were posed, and that this section invited the respondents to describe the major challenge in more general terms for Nordic-Russian cooperation on renewable energy. Possibly, the power of Moscow can be seen in relation to the power structures in the Russian energy sector, as earlier described in the context



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chapter. A few respondents stated that the market price of electricity in Russia played an important role, and two noted the lack of cultural knowledge in the Nordic countries as the main challenge. The main challenges are summarized in Table 22.

**Table 22: Main challenges to Nordic-Russian cooperation on renewable energy**

What are the <i>main challenges</i> in Nordic-Russian cooperation in the field of renewable energy (in general)?	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Lack of political will										1	1
Consumers willingness to pay	1								1		2
Culture		1									1
Lack of information sharing					1						1
Lack of culture knowledge in the Nordic companies			1								1
Power of Moscow						1	1	1			3
Realization of the potential				1							1

### 5.3 Structure of cooperation

The purpose of this section is to present the content from the interviews regarding the *structure of cooperation*. Furthermore, I account for the characteristics of the cooperation, forms of cooperation and suggestions for improvement.

#### 5.3.1 Characterization of the cooperation

From the interviews, there did not seem to be a clear way to characterize Nordic-Russian cooperation on renewable energy. Although I focused on business cooperation and this was emphasized, some respondent chose to answer in more general terms of cooperation on renewable energy. From Table 23 we see that three companies and the financial institution emphasized that the cooperation they were involved in was functioning well. On the other hand, two other respondents described Nordic-Russian cooperation on renewable energy in more general terms as more or less “non-existent”, at least when it comes to business cooperation. Even though only two respondents described it in such terms, a general impression from the interviews confirms that there is not much Nordic-Russian business activity within this field – yet.

However, several interviewees mentioned that this is about to change and that their replies could be different in a year or two. From Table 23 we can see that another respondent clearly states that it is not functioning as it is today. However, many

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respondents indicated that this is a field where improvements are needed, like a long-standing interest from the Russians and better synergies and cooperation between the Nordic countries as well as companies.

It was also emphasized that Nordic-Russian cooperation on renewable energy it is an area with rather little political focus compared to other parts of the energy sector like oil and gas. According to one respondent:

*The Nordic countries have technology. They have a long history with deregulated market, and a long history with wind power, like in Denmark. I am puzzled because it should have been more on the agenda.*

But even though there seems to be room for many improvements and an increased focus is wanted, a general impression from the interviews is that interest in this particular area is on the rise. Many mentioned that things are about to change for the better, but as in the business of renewable energy worldwide, this will take time.

**Table 23: Characterizing Nordic-Russian cooperation on renewable energy**

How would you characterize Nordic-Russian cooperation on renewable energy?											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Non-existent				1						1	2
Opportunities for improvement			1		1	1			1		4
Well functioning	1	1	1						1		4
Not sure								1			1
Not functioning					1						1
Lack of political focus		1									1
No reply							1				1

### 5.3.2 Forms of cooperation

As to the *types* of Nordic-Russian cooperation on renewable energy the respondents are involved in, this varies based on the type of organization they represent. The four companies were either involved in joint ventures or strategic alliances, and one had a subsidiary in Russia. The university was involved in project-based university cooperation related to research on renewable energy, while the NGO was actively involved in developments and cooperative groups through initiating an energy forum including a stakeholder perspective. The three authorities are mainly involved in cooperative projects

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on the political level, for instance energy cooperation in the Baltic Sea region or network programmes. The financial institution was involved in environmentally friendly energy investments projects. This is summarized in Table 24.

**Table 24: Forms of cooperation**

Have you been involved in Nordic-Russian cooperation within renewable energy, which type?											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Joint venture	1		1								2
Strategic alliances		1									1
Subsidiary company in Russia				1							1
Cooperation on research projects								1			1
Networks/project political					1	1	1				3
Developments and cooperative groups										1	1
Investments projects									1		1

### 5.3.3 Suggestions for improvements

To my question about the factors that could facilitate Nordic Russian cooperation on renewable energy, the answers diverge. The various recommendations for improvement revealed several suggestions for areas that could have been improved in order to generate more concrete results within the field of Nordic-Russian cooperation on renewable energy. Several mentioned *funding* as an area in need of improvement to facilitate cooperation. Some wanted a renewable energy fund in order to stimulate activities and research and greater possibilities for state-supported funding on Nordic-Russian projects on renewable energy. The second area where there are suggestions for improvements is within *access to information* on Russia. Three respondents emphasized the need for information and wanted this to be publicly provided in the Nordic countries. For instance, one mentioned the importance of having an overview over the laws regulating the various renewable energy sectors, in addition to an overview of comparative regulators and public offices in Russia. I think this is important, as such information could be something that companies in all the Nordic countries could benefit from. Moreover, such publicly provided information could be helpful in overcoming some barriers. The two other areas mentioned by more than one respondent concern *legislation* and exchange of experiences and *more synergies* between the Nordic countries. The main tendencies are shown in Table 25.

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**Table 25: Suggestions for improvements**

Is there anything that could facilitate Nordic-Russian cooperation within the field of renewable energy?											
	C1	C2	C3	C4	A1	A2	A3	U	FI	NGO	Sum
Funding	1			1		1				1	4
Legislation	1									1	2
Better support systems for renewable energy in Russia		1									1
Synergy effects and exchange of experience between Nordic actors.					1	1					2
Long-term strategy									1		1
Increased Nordic willingness to invest in renewable energy				1					1		2
Public access to updated information and regulatory offices		1	1	1							3
More visible commitment by the Russians							1				1
Don't know								1			1

### 5.4 Summary

In this chapter I have presented the Nordic experiences from Nordic-Russian cooperation on renewable energy based on ten qualitative interviews conducted with respondents in Norway, Sweden, Denmark, Finland and Russia.

The main findings from the experience within Nordic-Russian cooperation may be summarized as follows: Regarding *ideas*, renewable energy seems to have different meanings for the various respondents, and Nordic-Russian cooperation seems to be of interest due to the great potential of resources in Russia and the business *opportunity* this creates. The idea seems to be well acknowledged and institutionalized among the respondents, and their experiences show mutuality in the initiation of the cooperation. The reasons for involvement appear dominated by the economic potential, and there seem to be a long-term horizon. Furthermore, the motives and goals for the respondents' involvement in the Nordic-Russian cooperation on renewable energy would appear to depend on the context in which the respondents' organizations operate.

In the *process* of cooperation, partner selection appears dominated by choice and coincidence, and we have noted possible complementarities between Russian local

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knowledge and natural resources and Nordic market and technical competence. Nevertheless, the process of cooperation is disturbed by several different *barriers*, hindering the process of cooperation. The interviews show that the main challenge relates to the power of Moscow.

As to the *structures* of Nordic-Russian cooperation on renewable energy, the various respondents are involved in many different forms of cooperation. Better synergies are wanted among the Nordic actors, and there seem to be a general optimism regarding the future. Some of these main findings and tendencies will be further discussed in the following analysis.

## 6 ANALYSIS AND DISCUSSION OF MAIN FINDINGS

In the empirical chapter we have noted that different respondents focus on different areas of renewable energy. Some things function well in the *process* of cooperation, but this study also shows there are barriers that hinder collaboration and obstacles to be overcome. Regarding the *structure* of cooperation, the various respondents are to a large degree involved in different forms of cooperation.

In the following the emphasized areas will be analysed in relation to the theoretical framework, with a focus on the idea, the process and the structures of Nordic-Russian cooperation on renewable energy. I will also look into how the findings might be of value for Nordic-Russian cooperation on renewable energy.

### 6.1 *Idea: Different contexts give different meanings*

In the initial part of this thesis I covered some theoretical *motives* for being involved in strategic cooperation. Zineldin and Dodourova (2005) refer to four different motives for such cooperation: financial, technological, managerial and strategic motives. The idea of Nordic-Russian cooperation appears to be *interesting* to the respondents, as the renewable energy potential in Russia is large, and because this can create business opportunities. From this perspective, I argue that the answers seem to be strategically motivated. Here, however, we should note that these factors are more relevant for the companies and the authorities than for instance the financial institution, but that strategic motives appear to be a commonly shared motive for involvement in cooperation.

From the interviews there seems to be consensus on the reasoning behind the idea. As mentioned, the word “idea” derives from “to see” in Greek (Czarniawska & Joerges 1995), and connecting this with the result it might be that Nordic actors “see” many of the same ideas based on their reasoning on why Nordic-Russian cooperation on renewable energy could be of interest.

I find the respondents’ reasoning as to their interest in Nordic-Russian cooperation on renewable energy very interesting, since the interviews revealed that a majority of the

## Conclusions, contributions and implications

respondents became involved due to the potential of resources and the business opportunities. This is of relevance because Russia has a large potential in a vast number of areas, not only renewables, and there are many German, Chinese and American actors also interested in the renewable energy market. Surprisingly, no one, neither the companies nor any of the other respondents, focused on their ability to offer the best price, expert competence or technology skills that no one else could provide. There might be a natural explanation to this, but I find it noteworthy that Nordic reasoning for involvement in Nordic-Russian cooperation renewable energy appears to be rather naïve, especially when seen from a company perspective. Even if Russia is a great potential market, it is still like any other market. The focus among the respondents seems to be on the potential at this point, but in order to be able to develop the potential and the opportunities it represents, there might be a need to analyse the market and identify the Nordic competitive edge.

Regarding the *opportunities* for Nordic-Russian cooperation, there seem to be three areas with great potential to the respondents: within the *hydropower*, *wind* and *bioenergy* sector. Interestingly, these three sectors are fields dominated by fairly highly developed technology, compared to for instance tidal and wave. This might indicate that efforts may be put into the process of commercializing these already well-known technologies in order to achieve further development of the cooperation between Nordic and Russian actors.

Such a development also appears quite natural seen in relation to Nordic-Russian *complementarities*. These relate mainly to the Russian potential on one hand, and Nordic knowledge and competence on the other hand. The overall impression is still that there are many opportunities to be further explored before further cooperation can materialize.

When asked about *where* the ideas to Nordic-Russian cooperation on renewables come from, most respondents answered that they either didn't know or that that it was something that had been there for a long time. Forsell and Jansson (1996) claim that forms of organization are institutionalized when they can be understood as phenomena

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that describe common knowledge on widely acknowledged organizations. However, as we can recall from the theory chapter, the degree of which a form of organization is institutionalized or not depends on whether or not it is broadly acknowledged among the organizational actors in the field. The more recognized among the actors, the more institutionalized is the form of organization (Forsell & Jansson 1996). From the responses in this study, it may seem as Nordic-Russian cooperation on renewable energy to a certain extent is “taken for granted”, or widely acknowledged among the respondents in this study. Seen in relation to Forsell and Jansson’s (1996) definition, it may appear that the idea of Nordic-Russian cooperation on renewable energy is *well institutionalized* among the respondents in this study. Nevertheless, the struggle to identify companies within this type of cooperation proves that the sector as a whole not has come so far.

In the theory framework, I presented a theory discussion regarding *renewable energy*. Bull and Billmann (2000) use the term “renewable energy” to apply to “a broad spectrum of technologies based on self-renewing energy sources such as sun, wind, flowing water, the earth’s internal heat and biomass”. Finally, I presented a model of renewable energy in a value-chain perspective, illustrating that renewable energy aims to contribute to sustainable development through the use of renewable energy sources and through transformation into electricity facilitated by technology, and distributed and commercialized at the market. Other aspects related to renewable energy were also covered, and the findings from the interviews indicated that the *idea* of what renewable energy shows considerable variation among the respondents.

The NGO emphasizes *sustainable development*, while the companies and the financial institution focus more on *resources* and the *use* and *harvesting* of the renewable energy sources. This might be related to the market for renewable energy. The university tends to pay attention to the renewable energy *technologies*, while the authorities’ main focus is on the *sources* of renewable energy.

This indicates that there are quite different perceptions of what renewable energy is. One reason could be that there are different ideas within the different contexts. Relating this to



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the theoretical discussion about renewable energy in a value-chain perspective, it appears that the different actors may be focusing on different areas in the value chain. Through such an understanding, renewable energy seems to have different meanings depending on the context within which the respondents in this study are operating.

But how does Nordic-Russian cooperation work? What elements dominate the cooperation process? The analysis of this will be covered in the next section.

### **6.2 Process of cooperation: Culture, bureaucracy and barriers**

Some elements and issues emerge as having high importance to the cooperative process. In the following, this will be accounted for and analysed in relation to the theoretical viewpoints.

The literature stresses the importance of *partner selection* in relation to international cooperation through a strategic alliance, because a wrong choice of cooperative partner may cause economic losses, failure and a lack of results for companies (Gulati 1998; Supphellen et al. 2002). The results from this study indicate that the partner selection within Nordic-Russian cooperation on renewable energy is a combination of active search and coincidence. On the other hand, the selection process is also determined by the availability of partners (Gulati 1998; Supphellen et al. 2002). Through the experience of organizational cooperation we saw that the respondents felt that they had quite good, suitable partners. In relation to the partner selection process, the combination of complementarities on resources and strategic goals among the Nordic actors and their Russian partners appears evident. Bierly and Gallagher (2007) refer to such complementarities as *strategic fit*, and this might show us that Nordic actors in this study have been able to connect with partners that are strategic fit for their purposes. Relating this to the opportunities for Nordic-Russian cooperation, Nielsen (2007) emphasizes the role of *experience* from cooperation with the same partner, and that this common story might lead to relational advantages. I emphasize this as another factor that might serve to create future opportunities for the respondents in this study.

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But even though the choice of partner appears basically successful, the respondents' answers show that there remains a wide range of *challenges and barriers* related to the process of Nordic-Russian cooperation on renewable energy. Through the empirical results we also noted how the respondents underlined that there were quite few concrete results of business cooperation as yet. Why is it so? Why don't we see more concrete business results within Nordic-Russian cooperation on renewable energy when so many believe in business opportunities in relation to one of the world's biggest potential for renewables?

The "Uppsala model" stresses the importance of cultural distance as the main reason for great uncertainties in the internationalization process (Johanson & Valne 1977, 1999; Fink & Kraus 2007). The empirical results confirm this, as *culture* was the barrier mentioned by 8 out of the 10 respondents. This confirms that the cultural distance within an international cooperation seems to be of significant importance, as also stressed by Luo (2002). The respondents in this study represent different organizations that are subject to regulative structures at the local or the general level. The barriers experienced among the respondents may show that there are some challenges related to what Dillard et al. (2004) call "interaction with the institutional environment", as *corruption* and *bureaucratic barriers* also seem to be faced to a large degree. This is further emphasized as the respondents cited "the power of Moscow" as the main challenge for Nordic-Russian cooperation on renewable energy. The barriers may from this point be explained by the fact that there exist roughly two different institutional environments that meet, the Nordic and the Russian, and in this interaction there seems to be some cultural clash.

### **6.3 Structure of cooperation reflects nature of organizations involved**

In the theoretical framework I referred to Todeva and Knoke (2005), who state that many types of inter-organizational formations emerge when organizations search for cooperative partners in order to establish cooperation. This is also the case for Nordic-Russian cooperation on renewable energy. Companies, authorities, the university and the NGO seem to prefer different forms of cooperation.

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In this study the *companies* tended to involve in forms of cooperation like joint ventures, strategic alliances or through a subsidiary in Russia. As may be recalled from Table 2 (Todeva & Knoke 2005; Bessant et al. 2005) in the theory chapter, a joint venture is a type of cooperation that is legally owned by two or more cooperative partners. This is a form of organization that involves sharing both risk and responsibility (Friedmann & Kalmanoff 1961; Pesämaa 2007). According to Bessant (2005), the typical duration of a joint venture is long-term. An advantage of this form of organization is that two companies may have complementary know-how and share the risk. The disadvantage of a joint venture is that there could be a strategic drift or cultural mismatch. From the interviews I got the impression that the companies involved in joint ventures seemed more aware of what they were to cooperate on, while those in strategic alliances had to some extent “loser” plans with their cooperative partner. This confirms the postulates of management theory that hold that a strategic alliance might be viewed as a “loser” form of inter-organizational cooperation, sharing strategic goals, market development and so forth. One main difference between the companies within a joint venture and those cooperating through a strategic alliance seems to be the degree of commitment and the degree of formality.

We noted that the *university* cooperates on research, knowledge and technology sharing through projects, while the *NGO* is involved in Nordic-Russian cooperation through forums, *networks* and more voluntary organization that meet to share costs and ideas for development of renewables and sustainability. The *authorities* seem more involved in forms of cooperation related to political networks and cooperative groups. From this it is evident that the companies in this study prefer one type of cooperation, while the other respondents prefer other types. I regard the latter to be involved in developments of cooperative groups (Pesämaa 2007) which do not involve the same obligation as joint ventures. Nevertheless, all these developments and cooperative groups seem to be of importance to Nordic-Russian cooperation on renewable energy because they all bring various actors together. This is of importance to the opportunities that might evolve from cooperation. Secondly, the forms of cooperation carried out by the NGO, the university and the authorities might be important in helping the business actors interpret the Russian

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context and overcome the barriers experienced .

The university and the NGO, as well as the financial institution, seem to be active in bringing actors together. The NGO and the university do this through workshops and conferences, while the financial institution is more concrete, bringing together partners through a more direct matchmaking. The authorities are involved in networks and cooperative groups at the political level, but some also showed great interest in facilitation for improved business results.

I believe all these types of cooperation are important for Nordic-Russian cooperation and the development of opportunities, and most of them seem to function quite well. However, the challenge, as I see it, is the risk of becoming preoccupied with one's own context and “interpretation” of the Nordic-Russian cooperation on renewable energy. This might indicate the need for a broader communication between the same actors in order to create better synergy effects and increase the awareness of exchange of information and communication between the different actors. In relation to this, the NGO, the university and the authorities might play a big role in creating a common arena.

### **6.4 Cooperation - lost in translation?**

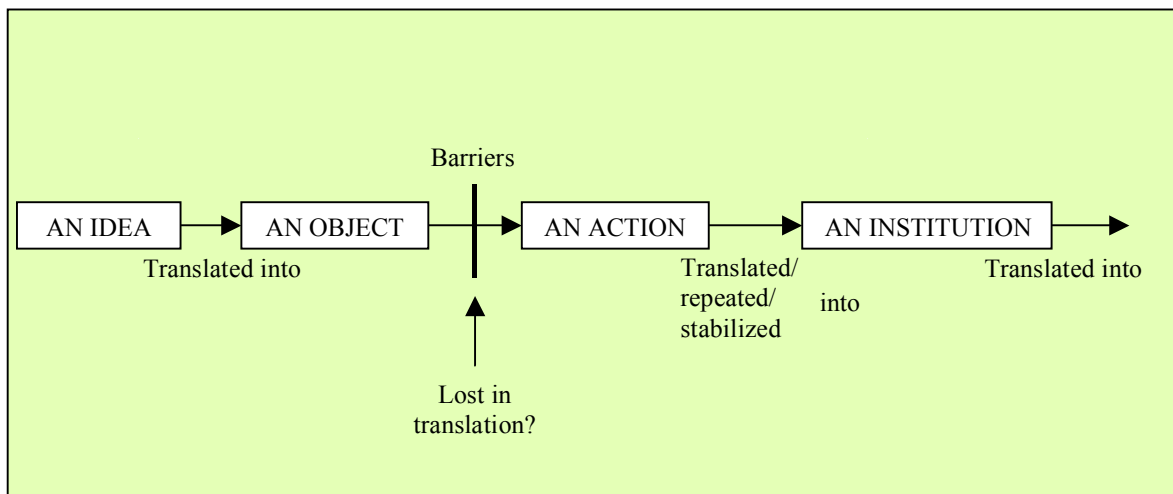
The interviews from this study have been carried out among actors located in five countries: Norway, Sweden, Denmark, Finland and Russia. Related to Czarniawska and Joerges' (1995) “translation model”, it might appear that the idea of Nordic-Russian cooperation on renewable energy has been translated into an object (text, picture etc) and travelled from one place or country to another. We do not know precisely how or where it all began, but it is there and it seems evident in the various locations.

There might be additional explanations to the challenges and barriers experienced in Nordic-Russian cooperation on renewable energy. In relation to Czarniawska and Joerges' (1995) *translation model*, we saw in the theory framework how these authors viewed ideas as something that could be translated into new stages in order to move on from ideas to object, and through translation materialize into action. The authors refer to

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*translation* as essential in order to create links that did not exist before, and it is a key concept for understanding organizational change. If we relate this to Nordic-Russian cooperation on renewable energy and what has emerged from the findings, Nordic-Russian cooperation appears well institutionalized, as it seems to be a well-acknowledged idea among the respondents in the various countries. Nevertheless, the long list of barriers, together with the lack of materialized action in forms of business cooperation, would indicate that the creation of links between the object and action is still missing.

Could it be that even though there are many business opportunities, Nordic-Russian business cooperation faces so many barriers, and gets lost in translation? This could be almost the case almost in the literal sense, as there seem to be some communication problems and language difficulties. Even more importantly, the creation of new links appears to be hindered by the various obstacles and barriers. I have sought to illustrate this within the translation model shown in Figure 13.



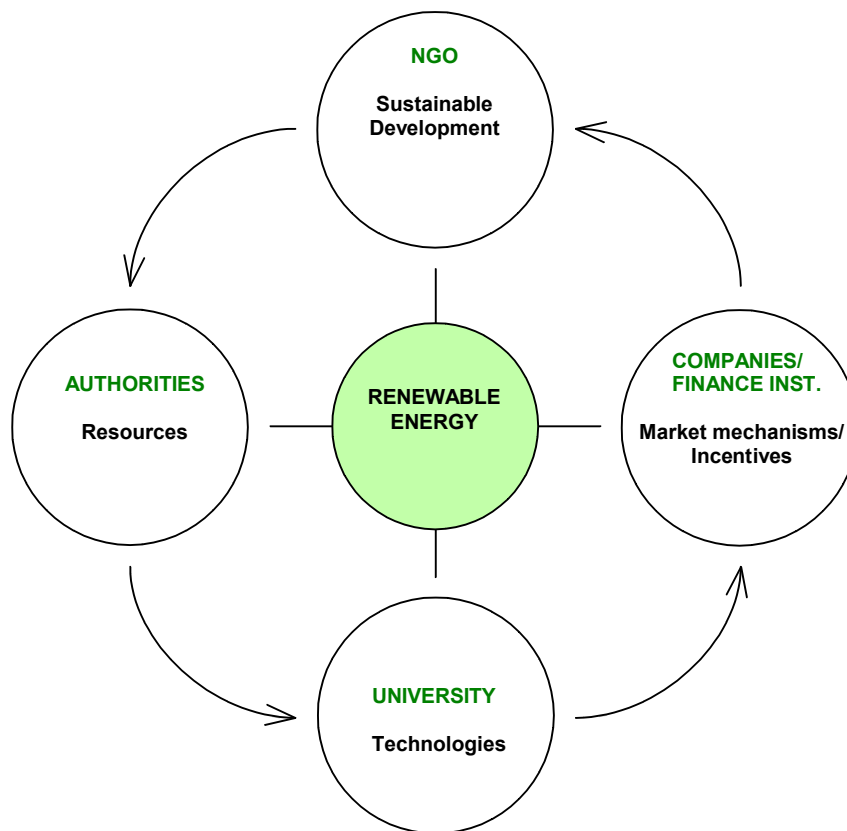
**Figure 13: Translation model. Lost in translation?**

We see that it is not only important for the companies to translate the idea in a right way, but also that there is a need for translation of the idea between the companies and the authorities and the various other groups, as they seem to have different ways of interpreting both the meaning of renewable energy and the forms of cooperation. This may be a challenge for Nordic-Russian cooperation on renewable energy, which

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consequently may result in a poor materialization of concrete action and business results.

Relating this to the value-chain perspective of renewable energy, the respondents in this study seem to view Nordic-Russian cooperation on renewable energy with different eyes, and they appear to be positioned within different areas of the value-chain of renewables. Opportunities and challenges might well be influenced by the differences in focus among the actors, and thereby represent a challenge. Figure 14 illustrates this.



**Figure 14: Renewable energy in a value-chain perspective, modified.**

The various actors in Nordic-Russian cooperation on renewable energy will often be involved in more than one of these areas. Nevertheless, this study has shown that there are tendencies arguing for a picture as presented above, and that this can be representative of those interviewed in this study. The NGO tends to focus on sustainable development, authorities are interested in the resources, and the university is placed in the field of technologies, while the companies and the financial institution belong more in the

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market context. Of course there are nuances, but broadly speaking, this appears to be the general picture.

What consequences might this approach have for the opportunities and challenges within Nordic-Russian cooperation on renewable energy? As presented in the theory chapter, a value-chain perspective depends on all four parts in order to take an advantage of renewable energy. When the various organizations focus on different parts of renewable energy, this could create both opportunities and challenges within Nordic-Russian cooperation on renewable energy. It creates possible opportunities as all the parts in the value-chain seem to be looked after and focused on by one or more of the groups, but there might be a challenge to generate synergies if the respondents mainly concentrate on their own context. This perspective can also illustrate the interdependence between the various areas and actors: if one of these four areas is missing, this hampers the utilization of renewable energy and possibly all the respondents' abilities to reach their goals for the cooperation, be they related to sustainable development or economic results.

## 7 CONCLUSIONS, CONTRIBUTIONS AND IMPLICATIONS

### 7.1 Conclusion

This research has studied opportunities and challenges within Nordic-Russian cooperation on renewable energy, and accounts for the dynamics of this by linking the opportunities and challenges to the ideas, process and structure of cooperation. The main findings relate to the following five areas:

1. Different organizational contexts give different meanings of renewable energy, and this might represent a challenge for Nordic-Russian cooperation on renewable energy.
2. The idea seems to be well institutionalized among respondents, which might represent an opportunity for further cooperation on renewable energy.
3. The considerable potential of renewable energy resources in Russia represents opportunities.
4. The cultural and bureaucratic barriers seem to be a challenge to the process of cooperation.
5. The structure of cooperation reflects the organizations involved and may represent a challenge.

Through the empirical findings and the analysis, we have seen that the main *opportunities* for Nordic-Russian cooperation on renewable energy relate to the sizeable potential of renewable resources, especially in the field of hydro, wind and bioenergy. The *idea* of Nordic-Russian cooperation on renewable energy appears well institutionalized and also well acknowledged among the respondents, who seem to take the idea for granted. Nevertheless, this is not the case for the field as a whole. From the results of this study, the *process* of Nordic-Russian cooperation on renewable energy seems motivated by the business opportunities and appears to be mutual regarding partner selection and initiatives.



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The respondents face a number of *barriers* in the process of cooperation, which seem to be hindering the idea of Nordic-Russian cooperation from materializing into concrete business results and commercial activities. The main barriers identified in this study relate to the context under which the cooperation operates. The power of Moscow, culture, corruption and bureaucratic barriers emerged as dominant. These four areas might sound like old news, but nevertheless this confirms the statement from Luo (2002), that cultural distance within an international cooperation between organizations is of significant importance. It points up the importance of taking this seriously, and also holds an encouragement to the companies. Knowledge of the Russian language, economy and society might sound like a cliché, but the results from this study show that culture cannot be ignored when participating in Nordic-Russian cooperation on renewable energy. These barriers might be the reason why Nordic-Russian cooperation seems to “get lost in translation”. They make it difficult to establish new links and bring the idea of cooperation to practical fruition.

In looking at renewable energy in a value-chain perspective, I have outlined the importance of each and every one of the respondents in this study. Nordic-Russian cooperation on renewable energy seems to depend on both NGOs working for sustainability, authorities promoting Russian resources and possibilities, universities searching for new knowledge and technologies, and last but not least, companies and financial institutions succeeding in making projects profitable and commercially viable. The variety of actors cooperating on different areas through various forms of cooperation appears as a necessity for Nordic-Russian cooperation on renewable energy, so in order to exploit and bring about concrete action out of the massive opportunities linked to the Russian potential for hydropower, wind power and bioenergy.

The number of Nordic companies cooperating with Russian partners on renewable energy is still rather limited. It is to be hoped that there will be changes, led by Nordic and Russian companies striving to spread the idea of cooperation within a field. And maybe by joining the Nordic forces this can be done. Through more knowledge and experience sharing, Nordic companies can become better prepared for the Russian adventure – without getting lost in translation.

## **7.2 Contributions**

### **7.2.1 Practical contributions**

It is first of all the practical contribution of this thesis I would like to emphasize. Since research on Nordic-Russian cooperation on renewable energy is quite limited, I will argue that the originality of this thesis represents an important practical contribution as this work contributes to greater knowledge within this field.

Second, I believe the empirical results from this thesis could make a contribution to Nordic companies wanting to “crack the Russian code” into the market of renewables.

Third, I believe the factors mentioned for facilitation of Nordic-Russian cooperation could be valuable for policy-makers in the Nordic countries or national organizations with offices and presence in Russia.

### **7.2.2 Theoretical contributions**

Whetten (1989) states that a theoretical contribution will involve an improvement of the already existing knowledge. This includes linking new elements together or making new connections. In relation to the term “renewable energy”, I have in this thesis discussed and showed the complexity of the term, and sought to link together many aspects that may impinge on the term by illustrating how renewable energy depends on other factors in order to be utilized and further developed. The development of renewable energy in a value-chain perspective might make a theoretical contribution. However, my main theoretical contribution lies in the sociological approach of “travel of ideas” on management, and linking this to Nordic-Russian cooperation on renewable energy.

### **7.2.3 Practical implications**

This study may indicate a need for funding based on multidisciplinary projects. I also feel it is important to create common and interdisciplinary arenas for exchange of information and ideas between Nordic and Russian actors and between Nordic actors representing different areas of cooperation, such as NGOs, companies, universities and the authorities. To create common arenas for experience, sharing is often required. Researchers and

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universities might play an active role as promoters of cooperation as they often collaborate in certain areas a long time before it becomes commercially interesting. This means that they can also serve as interpreters for others in other types of cooperation.

### **7.2.4 Suggestions for further research**

From the previous chapters, the attentive reader should be able to identify several areas for further research. I have specifically looked into renewable energy and forms of cooperation. This thesis has been carried out through qualitative research and hopefully it has made a foundation for creating possibilities for a more quantitative approach to opportunities and barriers within Nordic-Russian cooperation of renewable energy. It would also be relevant to conduct a similar study of the Russian side, or to undertake a comparative study between the Nordic countries and Russia. It would have been interesting to see how far the idea of Nordic-Russian cooperation has “travelled” in Russia, and which opportunities and challenges the Russians experience cooperating with Nordic actors. Furthermore, it would have been valuable to gather responses from a greater number of companies in the various Nordic countries, perhaps through a quantitative approach based on these findings, in order to be able to offer generalizations.

I have in this thesis not paid much attention to the role of support schemes and financial structures for renewable energy in the various countries, but there is no doubt that this is an area of considerable importance and should be examined further.

Another area in which there has been relatively little research is cooperative studies between the various Nordic countries on renewable energy. There could be a need for descriptive research that could provide a better overview of this important field.

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## 9 ATTACHMENTS

### ***Attachment 1 – Interview guide***

<p style="text-align: center;">Opportunities and challenges for Nordic-Russian Cooperation – Renewable Energy INTERVIEW GUIDE</p>
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#### **1: Renewable energy**

- What is your perception of RE, what is it?
- What do you think of when discussing renewable energy?

#### **2: Idea of Nordic-Russian Cooperation**

- From your perspective, *why* is Nordic-Russian cooperation and renewable energy interesting?
- Where do you think the ideas to Nordic-Russian cooperation on renewable energy come from?
- How would you characterize the Nordic-Russian cooperation within the field of renewable energy?
- Why Nordic cooperation in renewable energy towards Russia?
- What *opportunities* exist?
- What are the *main reasons* for involving/ wanting to be involved in Nordic-Russian cooperation within renewable energy? (For your organization/ for the companies)

#### **3: Institutionalization**

- What institutions are important in providing guidance for the cooperation your company/institute/organization is involved in?
- Who initiated the cooperation?

## Attachments

### **4: Cooperation**

- Why cooperate?
- Which type of Nordic-Russian cooperation are you involved in?
- How is the cooperation realized? (Organizational form, ect)
- What do you cooperate about? (Resources, knowledge, technology...ect)
- How does it work?

### **Motivation/Goal**

- What do you believe is the motivation behind the Nordic-Russian cooperation on renewable energy?
- What is the goal/ objective of the cooperation?

### **Partner selection (If relevant)**

- How was the cooperative partner found?
- What determined/ influenced on the selection?

### **5: What are the challenges/ barriers?**

- What does, and what does not work in the existing Nordic-Russian cooperation your organization is involved in?/for the companies?
- What are the main challenges in Nordic-Russian cooperation in the field of renewable energy (in general)?

### **6: Future of Nordic-Russian cooperation in RE**

- What is the time horizon for your involvement in Nordic-Russian cooperation, renewable energy?
- Is there anything that could facilitate the Nordic-Russian cooperation within the field of renewable energy?

### **7: Future of RE in general**

- Renewable energy as a substitute to non-renewable sources?

## Attachments

### Background information

	Company	Research Institute
	NGO	University
<b>Company size</b>		
Turnover		
Number of employees		
Man-labor year		
<b>Most important cooperation partner(s)</b>		
<b>What does the cooperation aim at?</b>		
<b>Type of cooperation</b>		
<b>Years of experience in Nordic-Russian cooperation?</b>		

### CONTACT DATA

Name: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone: \_\_\_\_\_

Name of the company/Organization: \_\_\_\_\_