

Elites in Finnish Energy Policy and Biogas as a Motor Vehicle Fuel

Liisa McDermott
Master Thesis
Social and Public Policy
Department of Social
Science and Philosophy
University of Jyväskylä
November 2011

McDermott, Liisa: Elites in Finnish Energy Policy and Biogas as a Motor Vehicle Fuel. Master degree thesis in social and public policy. November 2011. Supervisors: Marja Järvelä and Suvi Huttunen. University of Jyväskylä, Finland, Department of Social Science and Philosophy. 107 pages, appendix 15 pages.

The intent of this research was to find out what is the state of Finnish energy policy when reviewing it from the vantage point of biogas as a motor vehicle fuel. It seemed, according to previous research, that Finnish energy policy is lead by an elite and that there was a lack in transparency of energy policy. Therefore, in addition to researching the question of transparency and the possible elite structure, the research questions were: Who are these elites? Why do they exist and what makes others not members of the elite? Within what context do they exist? The question “Who?” will define the elite structure in Finland. “Why?” will tell us why this elite structure exists, thus giving possible solutions to prevent or keep the elite from becoming too strong. “Within what context they exist?” will tell us what are the prerequisites that make it possible for this elite to exist.

Within what context do the elites exist? The European Union and the market economy define the framework in which the aforementioned members exist. The EU sets the legislation which defines the political prerequisites and barriers in this area. The market economy sets the financial prerequisites and barriers, but what is profitable and what is not is also related to politics and policies. Policy guides what is profitable and what is not. They are interrelated. This leads to the unified political and economic elite.

Who are members of the elite? The power elite of biogas as a motor vehicle fuel consists of the top three ministers and two ministries (Minister and Ministry of Employment and the Economy, Minister and Ministry of Finance and the Prime Minister), the industries which have the biggest effect on the Finnish economy, the interest groups Finnish Energy Industries (ET), the Cabinet, and the political bureaucrats.

The level of influence of different actors is related to personal characteristics, education, experience, and knowledge. The actor trying to affect political outcomes has to be strong, educated, and experienced. Experience can also mean being a part of the networks of relevant actors, because becoming a member requires knowing the members of the network. Power is related to the institutional position of the actor or the institution itself. The institution must also be financially strong or be an important institution in society. The more financial resources the actor has to lobby, the more they have influence. The same matters conversely make others not members of the elite.

Also, the question about which fuel will be dominant in the future was researched. This was not the intention of this thesis; but, the significance of liquid biofuels arose when doing this research. Liquid biofuels were not directly mentioned in the interviews, but when investigating which fuel the dominant companies produce, and what they have invested in, liquid biofuels were discovered.

Keywords: social networks, elite, political leadership, business life, biogas, energy policy, expertise and institutions.

Table of Contents

1. Introduction.....	5
2. Basic knowledge of Biogas, Biogas Production and Policy.....	7
2.1 Environmental effects and energy balance.....	7
2.2. Biogas as a motor vehicle fuel.....	8
2.3 Distribution network of methane in Finland.....	9
2.4. Biogas production in Finland.....	12
2.5 Politics and Taxing on Biogas in Finland	15
2.6 Summary.....	17
3. Research Questions.....	18
4.Theoretical Background.....	20
4.2 Classical Elite Theorists.....	20
4.3 Main Theory - The Power Elite by C. Wright Mills (2000).....	23
4.3.1 Comments and Criticism on Mills' "The Power Elite"	27
4.3.2. Applications of Mills' Power Elite Theory.....	29
5. Research on Elites in Finland.....	31
5.1 The structure of the Energy Elite According to Previous Research.....	35
6. Research Methods.....	37
6.1 Interviews.....	37
6.2 Power Structure Research.....	40
6.3 Content Analysis.....	41
7. Elite Structure in Finnish Biofuel Policy.....	44
7.1 The Framework – The Climate Change Economy.....	48
7.1.1 The Market Economy.....	50
7.1.2 The European Union.....	53
7.2 The Inner Core.....	56
7.3 The Outer Core.....	60
7.4 Why Are Some Members of the Inner Core?.....	62
7.4.1 Money and Liquid Biofuels.....	64
7.4.2 The Unifed Political and Economic Elite.....	69
7.4.3 Institution Size and Expertise.....	74
7.5 Why Are Some Members of the Outer Core?.....	79
7.5.1 The Weak State of Representative Democracy.....	80
7.5.2 Limited Access to Information and Biased Information.....	84
7.5.3 Institution Size.....	86
7.6 Unclear Elite Position – Cities and Towns of Finland.....	89
8. Conclusion.....	91
Bibliography:.....	97
Supporting Research Material.....	105
Appendix.....	108
1. Questionnaire.....	108
2. Appendix Tables on Biogas Production	110
3. Quotes in Finnish.....	113

List of Tables and Pictures

Table 1. Emission reduction per kilometer when buses and cars that use gasoline as a fuel are replaced by biogas cars and buses.....	9
Picture 1. Current Natural Gas Distribution Network.....	10
Picture 2. Natural Gas Network.....	11
Picture 3. GasHighWay.....	11
Appendix Table 1. Biogas production in Community Waste Water Management Facilities in Finland.....	110
Appendix Table 2. Biogas production in Community Waste Water Management Facilities in Finland.....	111
Appendix Table 3. Future Plans of Biogas production in Finland.....	112

Glossary

NMVOC = Non-methane volatile organic compounds

CO = Carbon monoxide

CO₂ = Carbon dioxide

SO₂ = Sulphur dioxide

CH₄ = Methane

N₂O = Nitrous oxide

NO_x = Nitrogen oxides

Biomethane, Biogas = A gas that is produced by anaerobic digestion. This way of producing methane is considered to be a renewable fuel. The component used for energy production is methane.

Fossil methane, Natural gas = A gas which is considered to be a fossil fuel. The gas contains mostly methane. This gas can be found in oil fields and also in coal beds.

When you drive a car there are no domestic energy political actors than the one who refines the oil, Neste Oil. 90% of the oil comes from Russia... (Minister)

When deciding on the fifth nuclear power plant it was like an auction, like a common market place, when they were looking for votes for nuclear power. Biogas was one player in the game and it was promised to a few parliament members with a countryside background: "If you vote for nuclear power let's put biogas on the move and make it a motor vehicle fuel etc.". Despite of the promises it took years until we got to the point in legislation that we are in today. (MP)

"In their constituencies, the Congressmen deal with organized groups, and they are supported or approved according to their attitude toward the interests and programs of these groups. It is the local bailiwick that the plunder groups, who would exchange votes for favors, operate most openly. The politicians are surrounded by the demands and requests of such groups, large and small, local and national. As brokers of power, the politician must compromise one interest by another and, in the process, they are themselves often compromised in to men without any firm line of policy." (Mills 2000, 251)

1. Introduction

The main research interests are to find out what is the role of biogas as a motor vehicle fuel in Finland. Are there elites, groups/people that dominate in political decision making in Finland? Do these elites guide energy use in a certain direction? Is energy policy transparent? If these elites exist who are they, why do they exist and within what context is their power? Biogas is a fuel that is not very common in Finland. One possible reason for the marginal use of biogas as a motor vehicle fuel seems to be the connection between Finnish policy making and the Finnish energy intensive industries, Finnish energy industries and interest groups that prevail in this context (Ruostetsaari, 1998 & 2000). Finnish energy policy is according to Ruostetsaari (1998 & 2010) governed by elites and policy making is not transparent. Why research this topic if this is already clear? The idea was to collect research data collected via interviews to let the voice of actors in the field come forth. To find out what is the opinion of people working in energy policy about the state of Finnish energy policy. The question of biogas seemed interesting to research because using biogas instead of conventional fuels could have beneficial effects on human health, seems to be a good way of treating waste, reduces greenhouse gases and is a source of energy. Biogas production is going on all the time in landfills, waste water management plants and biogas production facilities. The technology appears to be good and fully-developed (Lampinen 2008a, Kuittinen et. al. 2010, page 13). So what is stopping biogas from becoming more commonly used in Finland?

Since it seems according to previous research by Ruostetsaari (1998 & 2010) that there are strong elites guiding Finnish energy policy in a certain direction the elite theory by C. Wright Mills (2000) was chosen because his ideas on elites seemed to be the most useful when an elite structure prevails in society. Mills' research is about a corrupted society so it seems that his research outcomes describe what are the characteristics of a corrupted society. It seemed worth while to use Mills' theory and see if the same characteristics could be in energy policy in Finland. It also seemed interesting to find out if Mills' ideas could be used in the case of Finland because the government structure of Finland and the the United

States are different.

The research has been conducted by interviewing people and by reviewing government documents and annual reports of companies. The data which was collected by interviewing people was the main data. Government documents and annual reports were supporting information. The main research method which was used was power structure research. The data in power structure research is reviewed by content analysis. Power structure has four questions that can be used. The questions are; What organization or class receives the most of what people seek for and value? What organization or class is over-represented in key decision-making positions? What organization or class wins in the arena of decision? Who is thought to be powerful by knowledgeable observers and peers? All questions were used in this thesis.

The thesis consists firstly of an introduction to biogas. What is biogas? How much and where is biogas produced in Finland? There is also a short chapter on policies and politics related to biogas and the history of these policies. Secondly, there is the section of the theoretical background of this thesis. Thirdly, the elite structure in Finnish energy policy is introduced according to Ruostetsaari (1998, 2010). My main source for previous research is Ilkka Ruostetsaari. His research seemed to be the most extensive. Fourthly, is the section that introduces the research methods used in this thesis. Lastly, is the section of analysis where the main results can be read.

Two terms have been used when writing about biogas; biogas and biomethane. The use of the terms depends on what is emphasized. If I am emphasizing that it is a methane based fuel that is biologically produced I have used the term biomethane because as a word it emphasizes that the main component used is methane and the source is renewable. Biogas is the term usually used so it is also used in this thesis. Biomethane and biogas are same fuel. Natural gas and fossil methane are also the same fuel but different from biomethane and biogas. Fossil methane was used when emphasizing that natural gas is a methane based fuel which comes from the carbon reserves of the planet.

2. Basic knowledge of Biogas, Biogas Production and Policy

2.1 Environmental effects and energy balance

According to David Elliot (1997, 117), biofuels are one of the cheapest fuels if environmental costs are taken into account when comparing them to alternative options. Biogas is a biofuel which contains 40-70% of methane and 30-60% of carbon dioxide and very small amounts of sulfur compounds (Deublein & Steinhauser 2008, 49-57). The component that is used for energy production is methane (Massé 2011). To use biogas as a motor vehicle fuel the per cent of methane has to be 97%; this is achieved by removing carbon dioxide and nitrogen from the raw biogas. The most common way to do this is by using water to clean the biogas. When shipping methane, methane can be let into pipes or it can be liquified in -162 Celsius (liquified natural gas, LNG). For example methane is shipped to Japan in a liquified form. (Nylund & Aakko-Saksa 2007, Deublein & Steinhauser 2008, 49-57.)

Biogas production and using biogas as a fuel does not increase the amount of GHGs in the atmosphere (e.g. Massé et al. 2011, Tilche & Galatola 2008). Biogas is a carbon negative fuel according to e.g. Massé et al. (2011) and Tilche & Galatola (2008). Carbon negativity is due to the fact that photosynthesized CO₂ of organic wastes is converted to CH₄ and CO₂ during anaerobic digestion (AD). The CO₂ is returned to the atmosphere when the biogas is converted into electrical or heat energy. Carbon negativity is also achieved because it reduces fugitive greenhouse gases (GHG) that come from stored and land applied manure. Using sludge from anaerobic digestion also reduces the amount of supplementary N (nitrogen) and P (phosphor) chemical fertilizers reducing the need of electricity to produce supplementary chemical fertilizers. (e.g. Massé et al. 2011, Hospido et al. 2010, Weiland 2010 and Sagagi et al. 2009.) AD also reduces nutrient losses to the environment reducing eutrophication because plants are more able to use N and P from the sludge that AD produces (Schulze et al. 1989). The amount of pathogens and toxins are also smaller in

sludge from AD than raw manure. (Massé et. al 2011, Hospido et al. 2010.)

When burning methane the result is carbon dioxide (CO₂), water and energy (Ophard 2003). CO₂ does not block as much infrared radiation from getting into space than methane (CH₄) does (IPPC 2007a). The blockage of infrared radiation from getting into space is one key mechanism behind the claim of climate change. (IPCC 2007b, 94.) Methane's stronger ability to block infrared radiation from getting into space makes CH₄ a “stronger” greenhouse gas than CO₂ (IPPC 2007a).

2.2. Biogas as a motor vehicle fuel

Biogas is a good fuel for biofuel production and it reduces the most greenhouse gases (Tilche & Malatola 2008). According to Lampinen (2008a) and Kuittinen et al. (2010, 17-24), Finland uses some of its biogas for energy production but some is also flamed at landfills without using the energy that it produces. According to Lampinen (2008a) 700 000 cars or 50 000 buses in Finland could be powered by biogas that is made from waste materials. According to e.g. Lampinen (2008a, 2003), Spira-Cohen et al (2011) and Volk et al.(2011) the negative effects of traffic would also be reduced since gas powered vehicles are more silent than diesel/gasoline powered vehicles and the exhaust fumes are much cleaner. The negative effects of exhaust fumes is still under research but the connection between exhaust fumes from internal-combustion engines and asthma is well known (e.g. Spira-Cohen et al., 2011). One study suggests that even autism can be more frequent amongst children whose mothers lived near freeways in their prenatal stage (Volk et al. 2011). Therefore the connection between exhaust fumes and health problems suggest that exhaust fumes are a problem. The reduction in emissions when using biogas instead of fossil fuels can be seen in the table 1.

Table 1. Emission reduction per kilometer when buses and cars that use gasoline as a fuel are replaced by biogas cars and buses (Lampinen. 2003)

Emission	Bus: Diesel → Biogas	Car: Diesel → Biogas	Car: Gasoline → Biogas
CO ₂ , CH ₄ , N ₂ O	> -96%	> -95%	> -96%
Small Particles PM 2,5	-94%	-99,9%	-66%
SO ₂	> -98%	> -99%	> -98%
NO _x	-39%	-88%	-57%
NM VOC	-70%	-33%	-79%
CO	0	+65%	-90%

From Table 1, it can be seen that using biogas as a motor vehicle fuel reduces emissions remarkably. SO₂ (sulphur dioxide) and GHGs (CO₂, CH₄, N₂O) are reduced almost 100%, NMVOC (Non-methane volatile organic compounds) are reduced 30-80%, NO_x (nitrogen oxides) are reduced 40-90% and small particles are reduced 70-100%. CO (carbon monoxide) is increased or reduced depending on the fuel that is replaced by biogas. Methane powered motor vehicles have been used for example in India to reduce the amount of impurities in the air (Bell et al. 2004).

To sum up it seems that according to the information that has been presented previously is that the use of biogas as a motor vehicle fuel has many positive effects. It has very low emissions when being used in combustion engines; it is actually carbon dioxide negative (Tilche & Malatola 2008, Massé 2010). Biogas as a motor vehicle fuel could reduce health issues related to exhaust fumes (e.g. Spira-Cohen et al 2011, Volk et al. 2011) and it seems to be a way to reduce greenhouse gas emissions. Therefore biogas seems to have a connection to successful climate policy.

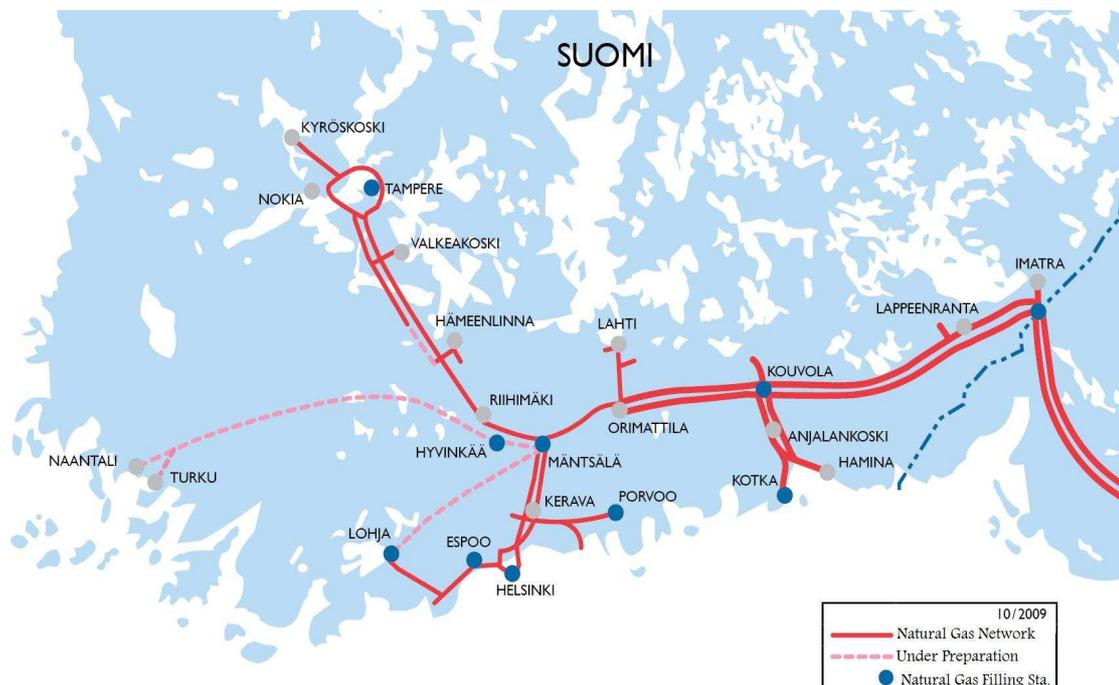
2.3 Distribution network of methane in Finland

One of the biggest problems regarding biogas in Finland is the fact that there is not a distribution network that would cover the whole country (Gasum 2010).

The natural gas distribution network is in the following cities: Helsinki (three filling

stations), Espoo (two filling stations), Hyvinkää, Kotka, Hamina, Kouvola, Lahti, Lappeenranta, Lohja, Porvoo, Riihimäki and Tampere, have one filling station per city. Other filling stations that are not part of the natural gas distribution network owned by Gasum Ltd. are in: Laukaa (Laukaa is the most northern filling station, about 300 km north from Helsinki.), Hamina and Mäntsälä. The filling station in Hamina is owned by Haminan energia Oy and ST1. The one in Mäntsälä is owned by Mäntsälän sähkö Oy and ST1. The station in Laukaa is the only filling station that offers only biogas, not natural gas. (Gasum Oy.)

Picture 1. Current Natural Gas Distribution Network (Gasum Ltd. 2011)



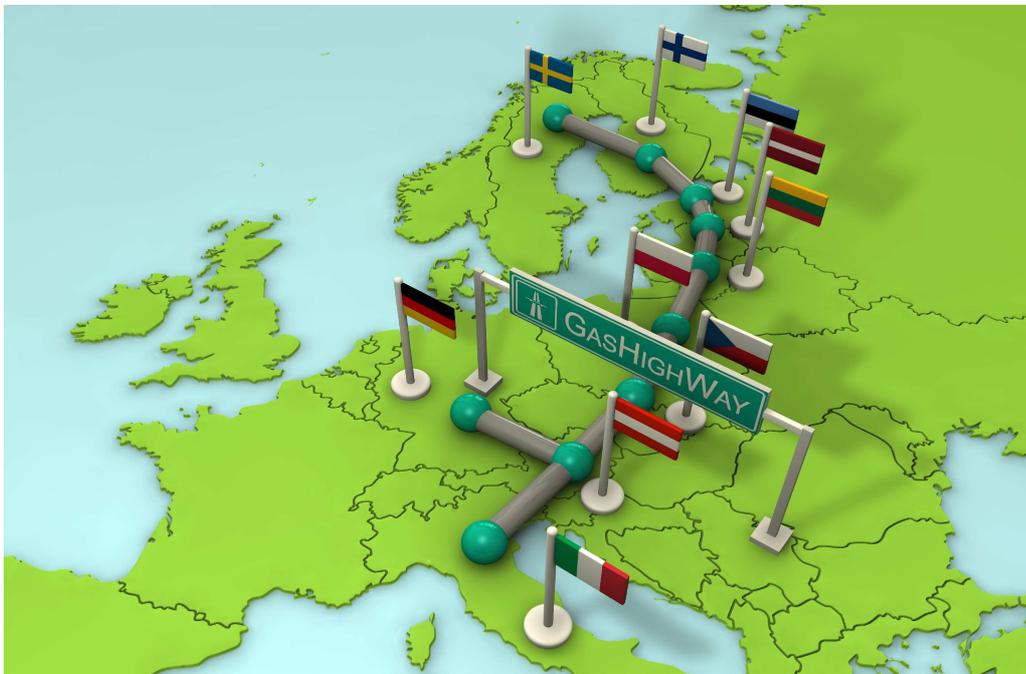
Picture 2. Natural Gas Network (Engdahl 2010)

**From Russia to Western Europe:
Important oil and gas pipelines**



Russia has a dominant role in the distribution of natural gas in Europe (Picture 2). The role of Russia has not been researched in this thesis because it is a massive topic to research. The map implies that Russia could have a role in Finnish energy policy.

Picture 3. GasHighWay (Hänninen 2011)



There are also plans of creating a “gas highway” (Picture 3). This is a project where the aim is to promote the uptake of gaseous fuels, namely biomethane and compressed natural gas (CNG). The aim is to create a “gas highway” in Europe, starting from the north, Finland and Sweden, and ending to the south, Italy. This is a European project with actors from different parts of Europe (Estonia, Sweden, Finland, Poland, Czech Republic, Germany, Austria, Spain and Italy. (GasHighWay 2011a, 2011b.) It seems that this type of gas highway promote the use of gas powered motor vehicles.

The amount of methane powered vehicles is very small in Finland. There 217 cars that run by methane and 448 cars which have bi-fuel engines (Kilpelä 2011). The amount is very small. The bi-fuel car in this case is a car that has an engine that runs on gasoline or methane depending on the situation (Ahonen 2005; Abianeh et al. 2009).

To conclude, one major problem is that the a vast infrastructure to distribute methane based fuels does not exist in Finland. There is the natural gas network that could be used for this purpose. It is also possible to transport biogas in containers, therefore filling stations in Finland could start selling biogas independently without the natural gas network. In addition to the small distribution network, there is also a very small amount of methane powered vehicles in Finland. Therefore, this is not simply a matter of political will; there are many obstacles in the use of biogas as a motor vehicle fuel.

2.4. Biogas production in Finland

The next section will show where and how much biomethane is produced in Finland. The main point of this is to show that there is existing production, but how it is put to use varies. Some places are self-sufficient when it comes to energy. For example Ämmässuo is self-sufficient in energy. The case of Ämmässuo is introduced later in this chapter. (Laita 2010a, Laita 2010b, Hellman 2010, Kuittinen et. al. 2010, 17- 24.) Instead of producing energy from biogas some of it is flamed. Flaming means that it is burnt without using the energy it produces while being burnt. Biogas is flamed because methane burns into CO₂

which does not block as much infrared radiation as methane does, therefore creating a "weaker" greenhouse gas, CO₂ (IPPC 2007a, IPCC 2007b, 94). The loss of energy while flaming methane seems like a relevant question because Finland has the obligation to reduce greenhouse gas emissions set by the European Union (2009/28/EC, European Union 2005). Using biogas more efficiently in energy production could be one way of reducing greenhouse gas emissions and pollution. (e.g. Sagagi et al., 2009, Massé et al. 2011, Tilche & Galatola 2008, Hospido et al. 2010, Weiland 2010.)

In 2009 144,49 million m³ of biogas was produced. The rate of use has decreased from the year 2008 from 72 % to 67%. The minimum rate of use that should be achieved is 75%. Energy production from biogas is the following: 378,3 GWh of heat and 58,1 GWh of electricity. Putting these two figures together, the total produced amount of energy was 436,4 GWh. This is under 1% of the total amount of renewable energy produced in Finland because some of the biogas is flamed without making any use of the energy. This means that 208 GWh of energy was lost. (Kuittinen et. al. 2010, page 13.) More specific information can be found in the tables in the appendix (2.Biogas production appendix tables).

The biggest amount of biogas is produced in areas where the population is big. The biggest landfills in Finland are Ämmässuo, Espoo producing 68257000 m³ of biomethane per year; Rusko, Oulu 7400000 m³; Kujala, Lahti 3370000 m³; Kontiosuo, Joensuu 3284000 m³; Mustankorkea, Jyväskylä producing 3100000 m³ per year. (Kuittinen et. al. 2010, 17- 24.) Landfills "produce" biomethane because the waste that is put underground starts to decompose in anaerobic conditions (Karapidakis et al. 2010). When looking at landfills, Ämmässuo (Espoo) produces the most biomethane. In fact the amount of biodegradable waste is starting to be so great in the metropolitan area of Finland that new options have been used to solve the problem of dealing with the increasing amount of biodegradable waste. At Ämmässuo a new biogas production plant will be built and should be ready in 2012. There are already estimations that the new facility will not be sufficient because the amount of biodegradable waste is very large (Laita 2010a, Hellman 2010). This shows that new ways of handling waste are needed in areas where the population is high.

There is existing use of biogas at Ämmässuo even now, there is an existing power plant using biogas as a fuel. Biogas production and the utilization of it has made Ämmässuo self-sufficient in energy. In the summer only 50% of the biogas was needed for energy production. This is due to the fact that the energy needed for heating is much smaller because of the warmer weather conditions in the Summer. The remaining biogas is flamed without utilizing the energy. (Laita 2010b.)

According to the information given previously it seems that it is possible that biogas could be utilized at other landfills in Finland and that the amounts of waste are increasing. For example, the agricultural biogas production facility owned by Metener Oy in Laukaa, Finland produces only 60 000 m³ of biogas (Kuittinen et. al. 2010, 17- 24). Despite this smaller amount of biogas Metener Oy sells the produced biogas to people who have methane powered motor vehicles. It appears to be that there could be possibilities to sell biomethane to people by others in Finland when reviewing the example of Metener Oy. Metener Oy is still the only place where one can buy only biomethane for gas powered vehicles. (Metener Oy 2010.)

Waste water management facilities are facilities that produce biomethane as a by-product; the main purpose of a waste water management facility is to clean waste water. The three biggest community waste water management facilities are in Viikinmäki, Helsinki 3260000 m³ of biogas; Suomenoja, Espoo 3260000 m³ and Viinikanlahti, Tampere 1940000 m³. (Kuittinen et. al. 2010.) These cities are the ones that have the highest population in Finland.

The biogas facility being built in Nastola by Biovakka Oy (also in coalition with Gasum Oy) will be the first facility where biogas can be put straight into the natural gas network (Biovakka Suomi Oy 2010). New facilities are also being built in Kitee, Jämsänkoski, Nastola, Turku, Forssa, Outokumpu, Virolahti, Kauhava, Lapua, Nykarleby, Kouvola, Kaustinen, Pedersöre, Maalahti, Pietarsaari, Evijärvi, Köyliö and Vampua. More specific information can be found from the tables in the appendix (2. Appendix tables on biogas production in Finland). (Kuittinen et. al. 2010 pages 17- 24.)

The conclusion that can be made according to the information on facilities producing biogas is that biogas use could be relevant in areas where the population is large but also in smaller towns and cities as the example of Metener Oy showed. There is existing production of biogas in landfills and waste water management facilities that could be utilized. According to the information stated so far this could be a way of reducing greenhouse gas emissions in Finland. This could help fulfilling the requirements of the European Union (2009/28/EC, European Union 2005).

2.5 Politics and Taxing on Biogas in Finland

Tariff of Biogas and Wind Energy

The new bill related to biogas is about electricity production from wind and bioenergy. The bill came into force on the 1st of January, 2011 (Finnish law 30.12.2010/1397). The reason why the bill 30.12.2010/1397 is important to biogas as a motor vehicle fuel is that before the passage of the bill, there was no significant policy related to biogas. If electricity production starts from biogas, it could be that production rates will rise and the use of biogas as a motor vehicle fuel will increase. (Finnish Government 2010.)

The goal of the government is to also increase the annual production of wind energy to 6 TWh. The goal of increasing bioenergy and wind energy is to increase the level of energy self-sufficiency in Finland and substitute fossil fuels with bioenergy. The main problem of the proposal for people producing biogas is that the minimum nominal output of the facility has to be 100 kVA (kiloVoltAmpere). This could leave agricultural biogas reactors outside of the tariff. The requirement of large facilities also leads to centralized energy production. The guaranteed price for biogas is 83,50 euros per MWh. The guaranteed price is what the producer is promised to get when selling biogas. (Finnish Government 2010, Finnish law 30.12.2010/1397.)

The History of Taxing on Liquid Motor Vehicle Fuels

According to Lampinen (2008b), taxing of motor vehicles has been very unsustainable in the past. Gasoline, which had the highest negative effects on the environment, had the lowest tax, diesel which was a bit better environmentally had higher taxes than gasoline, and biofuels which are the best environmentally had the highest tax. (Lampinen 2008b.)

The first law, 270/1921, regarding motor vehicles was in 1921 when a stamp tax law was set; taxes were collected from all motor vehicle fuels. The first law on motor vehicle fuels was in 1929 (Finnish law 22/1929). This law granted a tax free position for fuels that were domestically produced (Finnish law 22/1929). The first indications according to Lampinen (2008b) on favoring gasoline as a primary motor vehicle fuel was in 1939 when it was decided that cars which use another fuel than gasoline must pay an additional tax. (Finnish law 410/1938, Lampinen 2008b.). The law 410/1938 was changed during the same year and domestic fuels were granted a tax free position (Finnish law 327/1939).

According to Lapminen (2008) the legislation was basically the same the passing years until the situation changed in 1964. Benzyl, which has no more than 30% of ethanol, was totally tax free. Gasoline was also tax free. All other domestic fuels except benzyl got a high additional tax. (Finnish law 655/1964) The idea of this law was to prevent the use of fuel oil as a motor vehicle fuel in the place of diesel. This additional tax became permanent. (Lampinen 2008b.) In the beginning of 1967 the law 722/1966 (Finnish law 722/1966) became effective. This law was effective for 37 years and according to Lampinen (2008b) is unique when considering laws of motor vehicle fuels globally. This new law created an additional tax for the use of any fuel that is not gasoline or benzyl. In 2003 the amount that had to be paid if biomethane or methane was used was 10 000 euros per year. The tax on methane and biomethane has been so high that it could be possibly seen as a way to prevent the use of methane and biomethane. The law was finally changed at the end of the year 2003. It took the majority of the parliament, three directives from the European Union (EU) and the pressure of the EU commission to change this law. (Lampinen 2008b.) Now the situation is that cars that use fuel based on methane are free of tax (Finnish law 30.12.2003/1281 & 30.12.2003/1280).

The current situation is that biomethane and methane are tax free fuels meaning that the fuel itself does not have an additional tax. The owner of the biogas powered motor vehicle on the other hand must pay the same tax other automobile owners pay, meaning that the vehicle itself has an annual tax. The tax is CO₂ based or according to the mass of the vehicle. This also depends on how old the car is. Newer cars whose manufacturer has published the CO₂ emissions of the vehicle are part of the CO₂ taxing; older cars that do not have the CO₂ emission published by the manufacturer are taxed according to the total mass of the vehicle. (TraFi 2011.)

To sum up the question is why favor a fuel that is not a domestic resource, thus reducing the level of self-sufficiency of the state? Why favor something that has to be bought from abroad creating dependence on other states? To answer this question more research would be required so this is just presented as something the readers can consider. The strong interference by the EU had a great influence on increasing the use of environmentally sound vehicles which makes it seem that there is not a great interest in climate policy in Finland.

2.6 Summary

After reviewing the presented information it seems that promoting the use of methane and biomethane has been very difficult on the level of policy. The technology to use biogas exists, also the technology to produce it (Lampinen 2008a). There is also existing production of biogas and some of it is put to waste by flaming it without utilizing the energy it produces. It is an environmentally sound fuel and could reduce pollution of the environment and reduce the health effects that fossil fuels have on people. Who benefits by keeping the use of biofuels marginal in Finland?

3. Research Questions

After all the selected technical information presented in the previous chapters, there arises a question: why is biomethane not used more extensively if it has such beneficial effects? The technology exists and it seems to be an environmentally sound fuel but still its use is marginal. Biogas could have a meaning when considering climate policy. The problem seems to be related to political or financial matters.

There are strong obligations from the European Union (EU) that Finland should increase the use of biofuels. In addition, energy efficiency should be improved. (COM/2010/0639 final, 2009/28/EC.) The obligations from the EU are that the use of biofuels should increase to 5,75% by 2010 and to 10% in 2020 (2003/30/EC, 2009/28/EC).(The directive 2009/28/EC repeals the former directive 2003/30/EC. The directive 2009/28/EC is effective 1st of January, 2012.) Therefore the obligations set by the EU are clear. But when reviewing previous research, there is a lack of transparency in policy making resulting from the existence of an elite in decision making (Ruostetsaari 1998, 2010). Elites in decision making lead to a lack of transparency, this has been discovered by other researchers too e.g. De Ferranti et al. (2009, 96-97).

Mills's power elite theory (2000) was used as a theoretical framework because of its clarity and political radicalism. Mills (2000) theory also deals with problems resulting from a strong elite, His theory on institutional power is according to Wozniak (2008) very good. It also seemed interesting to test a theory which is about the elite structure of the United States of America and see how it fits in the case of Finland. Mills' theory is very useful when adapted to the situation analyzed herein.

As stated earlier, Ruostetsaari (1998, 2010) states in his research that Finnish energy policy has an elite structure and governance is not transparent in Finland. Therefore in addition to researching the question of transparency and defining elite structure in energy policy related to biogas as a motor vehicle fuel three questions are reviewed. These questions are.

1. Within what context do or do not the elites exist?
2. Who are these elites?
3. Why do they exist and why, nevertheless, some of the actors become a part of the impotent elite?

These questions will lead to possible ways of making corrections to the current state of policy making. The question concerning in what context do they have power gives us information of how the structure of society enables their influential position. Finding out why they exist can lead to possible solutions which could increase transparency in decision making.

4.Theoretical Background

4.1 The Elite Theory in General and the Concept of Power

Power in the view of elite theorists is power over the masses. The elite theorists define the characteristics of people in power, the means of power and the underlying structure that gives someone/something power. In the following chapter, it is explained how elite theorists defined power.

The elite theory is simply a theory where it is believed that societies, organizations, states etc. are governed by an elite, a group of people or institutions. This elite governs the means of power, the symbols of power and what comes with power. They also control who has access to power. Therefore, the position of the elite is very strong. Different theorists have different views on this matter but the key statement is for all the same; that there is an elite who controls. How these elites become elites, why elites are formed and how powerful they are varies according to the elite theorists.

The elite theory has evolved from the days of Mosca, Pareto, Michels and Mills. In the thesis newer elite theories will not be reviewed because the theory by C. Wright Mills is part of the older elite theory (Higley, 220). In other words, an older theory is being used as the main theory so including the newer elite theorists does not seem necessary.

4.2 Classical Elite Theorists

Classical elite theorists are Gaetano Mosca, Vilfredo Pareto and Robert Michels. C. Wright Mills is often also categorized as a classic elite theorist even though his writings are more recent than the ones by Mosca, Pareto and Michels. (Higley, 220.)

The classical elite theory has three key statements. First, elites are an inevitable outcome of every society. Second, variations in elite structures and functioning affect political decisions. The third statement is that even though elites have a major role in political

outcomes, they are not omnipotent. The relationship between the elite and the non-elite is interdependent. (Higley, 220.)

Gaetano Mosca (1858-1941)

Mosca's most influential work was "The Ruling Class," written in 1896. The inevitability of elites is due to the superior organizing capabilities of the elites (Higley, 220, Mosca 1939). Elites exist simply because it's easier to govern in concert in a small group over the masses. An individual always needs the support of a group to govern large masses. Elites are formed by people who have material, intellectual and possibly moral superiority. They can also be heirs of people who have the aforementioned characteristics. (Mosca 1939, 53.) An example, according to Mosca on intellectual superiority, are ancient Egyptian priests. The ability to write was proof of long and patient studies, and therefore they were an elite. (Mosca 1939, 59.) Mosca also states that the elite is divided into two groups; the very top governing elite and the second level of elites. Governing the masses depends not only on the top stratum of the elites but also on this second level. The very top governing elite alone cannot rule the state. The moral, intelligence and activity of the second class of elites is crucial for maintaining power. The moral, intelligence and activity of the second class of elites is also important in creating stability. The reason why the second level is important is because it creates a pool from which new leaders can be chosen from. The moral, intelligence and activity of the second level is also important because they have the strongest connection to the masses. (Mosca 1939.)

Vilfredo Pareto (1848-1923)

Pareto emphasized the psychological and intellectual qualities of the elites. Therefore, elites are the highest achievers in every aspect of intelligence (character, abilities, skillfulness etc.); this is the reason for their success. (Pareto 1963, 1423.) According to Pareto there were two types of elites; the governing elites and the non-governing elites. The non-governing elite consists of members who do not affect political decision making, and the governing elite of members who have political power directly or indirectly. (Pareto 1963, 1423-1427.)

Pareto also stated that elites circulate from the non-governing elite to the governing elite and vice versa. This makes it possible to replace the whole elite. The mechanism behind this circulation of elites is based on the skillfulness of the members; this mechanism ensures that members with the best qualities of intelligence are chosen. This rules out from the elite members that are not competent anymore. This mechanism also makes the non-elite and the elite dependent of each other. There can be no elite without the non-elite because the top elite is formed from the non-elite. The top elite must also humor the non-elite because its power is due to the support of the non-elite. (Pareto 1963, 1423-1427.) Pareto later noticed that only in conditions of perfect competition does this mechanism work; for example, wealth, social class and corruption can limit individuals' possibilities to rise into the elite. Pareto then changed his model that the elite is comprised of people in high rank positions, in contrast, personal skillfulness has not such a great meaning. (Pareto 1963, 1423-1427.)

Robert Michels (1876-1936)

Michels called his theory the iron law of oligarchy. He believed that all organizations were elitist. This is meant to describe that most social and political organizations are run by a few individuals who make most of the decisions. These individuals act under self-interest and carefully control the outsiders' access to power. Positions of power are passed on to chosen members as well as access to resources.

Even when there is no clear form of government, the formation of an oligarchical group of leaders cannot be avoided. When people are in big groups, the rules of group psychology prevail. People do not think sensibly in large groups, and they can be even more vulnerable to the affect of powerful leaders stating matters that people would not give their approval to if they were in a small group. So, decision making of large groups usually always leads to the need of representatives because mass meetings are not always possible for various reasons. The reasons can be related to climate (for example, too cold), mass meetings can be forbidden in some countries or the apparent difficulty of every member stating their opinion and being heard if the group becomes very large. The most simple form of

leadership in the political system is when leaders create a political party; the leader is the primary element and the masses the secondary element. In a nutshell, oligarchy arises out of complexity and size of organization – the organizational form - where there is a delegation of power in terms of specialized expertise, initially for efficiency and stability, but transformed into a self-serving conservative elite. (Michels 1986, 44-48.) The combination of apathy within the non-elite, lack of expertise, and need for guidance of the masses and the natural greed for power of the elites lead to the oligarchical structure of leadership. Social organization and division of labor are key variables. Michels' key statements on elite formulation in bureaucratic political organizations are the following: first, the need for specialized staff, facilities, and above all leaders; secondly, the utilization of such specialized facilities by leaders within these organizations; and last the psychological attributes of the leaders (for example, charisma). (Michels, 1986.)

4.3 Main Theory - The Power Elite by C. Wright Mills (2000)

Mills theory has been highly criticized but Mills's book also helped create power structure research to the point it is in today, contributed to conflict theory, and attacked on social theories that viewed the world as harmonious and peaceful. The previous statements are reviewed later in the chapter. The fact also remains that the book was highly successful; it has been translated into seventeen languages, including Catalan and Serbo-Croatian, and is still in print today (Brewer 2003, 27).

The power elite by Mills (Mills, 2000) is the main theory of this thesis. Mills' theory has been chosen because Mills offers very good tools for defining an elite; what makes an elite an elite? Also it seemed interesting to test a theory based on the society of the United States of America and see if it fits the case of Finland. Also, the unity of the three elites seemed interesting. Are the major institutions in Finland interconnected by a common goal that is based on the benefits of these actors of the elite? In Addition Mills' view on institutional power has been noted as being the best approach to reviewing institutional power (Wozniak 2008).

Mills' main claim was that there was a small, but reasonably cohesive elite that dominated the national levels of power in the United States in major bureaucratic organizations. Mills (2000, 276-277, 1-30) main claim is that because of the cold war, the economy turned into a war economy where the members of the three elite groups (political, economic and military) shifted back and forth to different elite groups. Therefore the military became the main ruler of the United States. (Mills, 2000.)

Mills (Horowitz, 1983, pages 256-280; Mills, 2000, 16) divided the elite into the omnipotent elite and impotent elite and he stated that there is the inner and the outer core in the elite. The elites of the inner core can move between different institutions (army, economy, administration / politics) interconnecting these institutions to each other. The outer core consists of people who are not part of decision making but their views are taken into account. They do not move between institutions. Mills states that people in the inner core are able to circulate between the three domains of power; military, political and economic. Actors in the outer core are actors who have to be taken into account when decisions are being made but they do not have the power of the inner core. (Mills 2000, 11, 289, 228, 233.) The power of the omnipotent elite is said to be of hidden design. Mills uses examples of the Nazis and the conspiracy of Jewish people and the American thought of the hidden force of Communist spies. The omnipotent elite is hidden and it has remarkable power. (Horowitz, 1983, pages 256-280; Mills, 2000, 16.)

The impotent elite consisted of people of power but who have no congruence. They are check-mated by other men of power which makes them scattered and powerless. These people of power may have visibility but lack power because they have no unity. (Mills, 2000, 16-17.)

In a nutshell Mills' claims are the following. Power was in different levels. There was one power elite which was unified. In other words the major institutions of the economic, political and military domain had a common interest and formed one unified elite in the United States and this made the elite very powerful. This elite prevailed and made all

national policies, especially foreign policy. Interest groups were diversified and balanced. The citizens (the mass society) were unorganized and therefore had no control over the power elite. The power structure in the United States became increasingly concentrated which made power in the United States almost as centralized as in the Soviet Union. Policy was based on the interests of the elite. This led to policy not being a matter of public debate anymore. Also the responsibility and accountability of power was lost which led to lost democracy. (Kornhauser 1968, 48, 50.)

Mills' ideas have received a lot of criticism. First, he does not have an economic theory to give base to his conclusions. He avoided using any economic theory because he wanted to be clear-cut from Marxists. Mills has been also criticized for his populist way of writing; some say he was just trying to become popular. Also his idea that the three elites he mentions are unified has also been criticized. (Sweezy 1968, page 121; Aptheker 1960 page 22; Domhoff 1968, 251-257.)

What Justifies the Idea of a Power Elite?

Mills states that elites exist because without them there would be no hierarchy of power. The same statement is relevant also if one would claim that there is a very powerful top elite. This would lead to a situation where there would only be a powerless mass of people governed by a small elite. Therefore, Mills (2000) stresses that there is a clear hierarchy of power when it comes to governance of the state and by this he dismisses the need of an economic theory. Mills also states that to claim that there is a gradation of power does not automatically mean that the elite is unified. (Mills 2000, 18.)

What Makes the Power Elite an Elite?

According to Mills (2000, 9), the elite are people who first, have the most of everything that is considered to bring a person wealth and power (money, prestige etc.). He noticed in his research that the ones with the most power were large companies. (Mills 2000, 1-30.)

Second, the elite member has a good position in a powerful institution because power is in the institution (Mills 2000, 9). The power elite might be seen as people who have the most

of everything, but they are not in power just because of their personal characteristics and what they have; they have the power because of the institutions they belong to. For example, rich families have power not because of their money, but the institutions, big corporations they are connected to, which is the source of their wealth. Therefore, if bureaucrats are stripped of their institutional position, they are left with only themselves; their source of power is gone. (Mills 2000, 10-11.) Institutions are bases of power, wealth and prestige. Institutions also offer possibilities to exercise power and of acquiring and retaining wealth and getting the advantage of being a member of people with high status. Mills' claim is that institutions are very strong. He states that those who command the institutions have the highest level of authority because they have power over the institution; this ensures the continuity and importance of their power. (Mills 2000, 9-10.) The significance of the individual cannot be totally superseded by the institutions they belong to; these individuals are people who want to excel leading to high positions in society. (Mills 2000, 13.)

Third, they are members of the “higher circles”, the top level of society. Mills (2000, e.g . 11) therefore says that the elite consists of people who are a part of a social clique and whose decisions are effective on at least a national level. (Mills 2000, 18.) Mills says that the elite consists of people networking with each other. The elite consists of people who are trained, selected and permitted access to circles in which the institutions are governed. (Mills 2000, 15.) Mills (2000, 11) states that the top circle of the upper social class communicates and works together; this means networking with each other, acting in a certain way towards one another and creating friendships, etc., with each other. The aforementioned statement can be compared to the so called “old boy networks.” “Old boy networks” are social cliques that communicate, have power and network with each other. The word fratricide has also been used to describe this type of power. This type of power can be described as brotherly groups or as alliances of people. (Soikkeli 1996, Veijola & Jokinen, 2001.)

Last, Mills (2000, 13) states from a humanist point of view that the elite could be seen as people who supersede themselves. From this point of view, one could say that the elite

consists of people who are of superior character and energy. This is very much the same type of statement that Mosca (1939, 59) has made when he said that Egyptian priests were an elite because they had the ability to read and write; long and patient study lead to an elite position. Although one of Mills' main claims was that power is related to important institutions. Mills did not emphasize personal characteristics that much.

The Role of Knowledge

Knowledge is according to Mills (2000, 351) often perceived by the common citizen as a pathway leading to power and wealth or that knowledge automatically brings with it wealth and power. Therefore he states that knowledge is no longer seen as an ideal, it is an instrument. Mills (2000) quotes John Adams (1856) “*Bad men increase in knowledge as fast as good men; and science, arts, taste, sense, and letters, are employed for the purposes of injustice and tyranny, as well as those of law and liberty; for corruption, as well as for virtue.*”

Mills (2000, 352-353) continues by saying that people with knowledge are often not people with power. He also says that the government and Universities are far away from each other and if their paths do cross, “the man of knowledge” is seen as an expert. Mills' states that issues are not debated to justify them. Mills states that even the man of knowledge is tied to his livelihood which makes him dependent on the people in control. (Mills 2000, 352-353.)

4.3.1 Comments and Criticism on Mills' “The Power Elite”

According to Domhoff (1968, 251-278), Mills has been criticized very much by many people in the field. Mills' analysis was overlooked before, but when looking at issues in the 1950's today, his analysis seems very accurate. The situation in the United States now is very much as Mills described it to be (Domhoff 2006). The benefactors today in American capitalism are the chief executives of large corporations who are clearly driving forces in the power elite. Mills' conclusion on the political domain circulating between the corporations, corporate law and government positions also seems very accurate when

looking at the power elite today. According to research done now, it seems that the political domain is in cooperation with academic experts who are unified by the corporate-financed network of foundations, think tanks and policy-discussion groups. The power structure Mills researched was based on a strong corporate grip on power in the legislative area. (Domhoff, 2006.) Domhoff (2006) writes, though, that Mills was wrong to say that the military domain was at the same level of power as the economic and political domain. The military chiefs are dismissed if they disagree with their civilian bosses.

The criticism Mills got goes as follows. Firstly, there is the question of Mills not having an economic theory. Mills did not have a clear economic theory that would explain the background of power of the economic elites. Marxists stated that elitism can only be based on production and property relations in society. An economic theory would have given depth to the analysis and the unity would have not been so much criticized. Marxists therefore ask a theoretical question: how the elites are in fact unified? This undermines the unity of the elite Mills claimed there to be. (Aptheker, 1960, 22; Sweezy 1968, 121, Domhoff 1968, 251-257.)

Secondly, there is the question of the methodology Mills used. This type of study can be done only by studying government documents that are about decisions that have actually been made. The unity of the three elites cannot be proven by other methods. (Domhoff 1968, 255.) To the statement questioning Mills' methodology, Domhoff (1968, 255) says that using government documents for finding out how things really are can be withheld by the government, making research on documents unreliable. Domhoff stresses that it is possible that we know very little of the backgrounds of decision making and what is really happening behind the decisions that are made. Therefore government documents are not always reliable. (Domhoff 1968, 251- 278.)

Dahl (1968, 28-30) makes the statement that one cannot say that one group is an elite over everyone else. Dahl (1968, 28-30) continues that the observed group must be well defined and must have a common interest. By having a common interest it is meant that one cannot say that there is a ruling elite over every aspect of society; every group in the elite has

different interests and the level of power varies according to this. (Dahl 1968, 28-30.) This is very true when reviewing Mills' statement that there is a ruling elite which governed The United States of America in the in the 1950s. Dahl (1968, 31) continues that to assert that an elite exists, the following three conditions must be met. Firstly, The ruling elite is a well defined group. Secondly, there is a fair sample of cases involving political decisions where it is clear the will of another group rules over another group. Thirdly, the will of the elite prevails regularly. (Dahl 1968, 28 - 31.)

Some of the criticism is old and some new but the criticism seems relevant. The criticism has been used in the thesis in the following way.

Firstly, the elite described in the analysis is not an elite over every aspect of Finnish society. The elite is the elite only when considering energy policy related to biofuels. Secondly, the government documents were only supporting information taking into account that official documents are not totally reliable. That is why interviews were used to collect the main data. Also the will of the elite seems to prevail according to the interviews of this thesis. And last, the question about the economic background. The economic background is relevant because it seems to be one major element of the society today. Therefore the effect of the market economy has been considered but not in depth. This would have made the thesis too broad.

4.3.2. Applications of Mills' Power Elite Theory

Mills has been used in elite research, criminology, to research unethical practices of institutions and various issues related to policies and politics. In a study by Zweigenhaft (2007) the structure of the current elite in the United States has been researched. He asks the question if the elite in the United States was based on principles of equality and diversity as it seems on first glance. He studied the situation of Jews, Latinos, women, African-Americans, Asian-Americans and homosexuals. It appears to be according to Zweigenhaft (2007) that these groups may join the elite but they must not rock the boat too much or be too different from the prevailing elite. They often have a privileged background and good education. African Americans who are members of the elite have a lighter skin

color than African Americans who are not in the elite. Women and African Americans have a better education than white males. (Zweigenhaft 2007.) According to this it seems that the ideas presented by C. Wright Mills are more relevant than it was thought to be when the book was published in 2000.

Mills' power elite theory has also been used in criminology. In Wozniak's research, differentiating from this research, three of Mills' books are used; "The Power Elite", "Sociological Imagination" and "Character and Social Structure". He also used a criminological theory called peacemaking criminology. Wozniak's research was about institutional sources of illegal behavior. Wozniak asks the question how crime is related to social structure and what type of social structure prevails in the United States today. He also explored in his article how the Millsian perspective can broaden the understanding of the declining sense of ethics in leading American industries, governmental agencies and the justice system. Wozniak's conclusion is that unbalanced sets of institutions which are dominant or subordinate has seen to be the reason for crime and unethical practice. Therefore he states that social institutions must be balanced. His other end conclusion is related to peacemaking criminology. Wozniak states from the view peacemaking criminology that the policy goal is to apply alternatives, such as restorative justice and alternatives to violence, to lessen suffering of crime that arise from social inequality.

To sum up, when reviewing how Mills' theory has been used in research it seems that his theory is often used in cases related to corruption and injustices. It seems that this is an area where Mills' theory is very useful. Therefore Mills' theory seems still to be relevant and worth using. It seems that the most common way to use the elite theory is to use a combination of the writings of different elite theorists. Using the writings of just one theorist is not so common when using the elite theory but it seems to work. For example when reviewing the research of Ruostetsaari in the next chapter one can see the influence of many theorists.

5. Research on Elites in Finland

The best idea when writing about previous research seemed to be to use only Ruostetsaari. His research is the most extensive. Ruostetsaari's view and the very extensive review on the elite theory in the previous chapters seems to be enough to review the topic of elites in energy policy. This is especially the case when considering that this is just master thesis.

Preparation of Energy Policy

Ruostetsaari starts his debate with a statement that is clearly related to the classical elite theory. He says that the structure of “the political preparation machinery” effects the outcome of political decisions, therefore researching the structure is relevant (Ruostetsaari 1998, 173). This same statement was one of Mosca's statements where he says that the variations in the elite structure and functioning are decisive for certain social and political outcomes (Mosca 1939, 51). Most of the background work for preparing the bills was done in committees before the 1990s. In the 1990s it became more common that preparation in energy policy was done by working groups. Ruostetsaari continues saying that committees and possibly also working groups were replaced by bureaucratic preparation. Ruostetsaari (1998 173-178, 180, 200) states that this leads to the situation where possibly most of the legislative and political power is in the hands of a small group of government bureaucrats. It is possible that only one bureaucrat (an one man committee) is preparing parts of the bills but this is only in the case of very technical matters. Power is not totally in the hands of bureaucrats, Ruostetsaari states that the party in power has influence on the bureaucrats. But bureaucrats have filled a void that has been created because parliament members do not seem to have interest in energy issues even though energy related decisions can have a very great financial effect compared to other decisions that are much less relevant financially. (Ruostetsaari, 1998, 180, 200.)

Is Sustainable Energy Production the Main Target in Energy Policy?

Ruostetsaari (1998, 200) states that in the 1990s it is not clear if there existed unified energy policy in Finland. Policy is related to employment goals, environmental issues and

economical guidelines. The same critique can be placed when considering the EU. The standing point for EU policy is the market economy and keeping trade free of limitations. He also says that if taxation changes very much it makes it difficult for companies to plan the future and forces them to create their own energy policy. The EU has a great influence when it comes to energy policy. In the days when this research was done the EU did not have power over energy policy in the member states. (Ruostetsaari 1998, 173-206.)

Ruostetsaari (1998, 176-177) states that a strong political elite in decision making does not fit the days of deregulation and control of the market. Removing committees, working groups etc. that used to make the decisions has made decision making a lot easier when it comes to matters that create a mess between conflicting interests. Conflicting interests have been opinions on building more nuclear reactors, environmental emissions and taxes as an energy political tool. For example Ruostetsaari (1998, 173 - 206) states that the energy strategy goes to the energy political ministerial committee after it is drafted by the bureaucrats. The process is basically the same as before but the ministerial group handling the climate and energy strategy is the climate and energy political ministerial working group. The end result is that only the political parties that are the member of the Cabinet can have a major impact on issues – parties in the opposition can be bypassed by ministerial groups. This makes decision making swift and easier than before because it prevents the opposition from affecting the preparation of the bill. (Ruostetsaari 1998, 176-178.)

Also according to Ruostetsaari (1998, 176-177) there are many ministries involved in energy political matters. Firstly, there is the Ministry of the Environment which mainly considers environmental issues. Secondly, the Ministry of Finance's main concern is economic matters, i.e getting tax revenue from matters that are related to energy policy even though the most expertise is in the key responsible ministry, the Ministry of Employment and the Economy. Thirdly, the Ministry of Agriculture and Forestry has its interests in increasing the use of biofuels and bioenergy. Fourthly, the Ministry of Employment uses energy policy as an instrument to reach goals in employment and regional policy. The job of the Ministry of Employment and the Economy is to somehow

coordinate all these interests and channel energy taxing in a direction that it will fulfill the demands of the energy strategy. The Minister of Employment and the Economy has traditionally been more in concert with the industries of Finland than the Ministry of the Environment. This creates a certain conflict of interest if one would like energy matters to be considered in a objective way. There is no institution to coordinate or make decisions that would be solely from the viewpoint of energy policy. This creates a situation that there are many actors in the energy policy field whom all have their own interests. (Ruostetsaari 1998, 176-177.)

The Use of Information

Ruostetsaari (1998, 181-182) also states that information is used to keep people out of discussions regarding energy and limiting the group of people actually making or preparing the decision to experts and others who have a technical education. Mathematical and highly technical research methods reduce critique on the research outcome because to understand the research result one would need a technical education. Uncertainties and problems related to the research outcome disappear in the eyes of someone who does not have enough technical understanding or understanding of the nature of research; the result is that authority and political problems become technical problems. Ruostetsaari (1998, 182) concludes that this strengthens the position and authority of the expert. Discussion of energy related issues can be limited to what is mentioned by experts, therefore excluding other options and opinions.(Ruostetsaari 1998, 181-182.)

Similarity of the Elite

Ruostetsaari (1998, 182) continues by saying that channels of influence are created between researchers, designers of policy and decision makers; they have the similar education and social networks provided by the institution. Power is also maintained because the bureaucrats and the researchers share the same education and professional background and a positive attitude towards modern instruments planning which has possibly created unified language and values. (Ruostetsaari 1998, 182.)

Information as a Mean of Power

Using information as the means of power can be done in many ways. For example different actors in the field of energy policy can try to get consultants and experts who support the view of certain actors to present their case at hearings where a specific energy political matter is being heard. Ruostetsaari mentions two key producers of information for the government in the 1990s; the VTT (Technical research center of Finland) and consulting office Ekono (Konsulttitoimisto Ekono). Ekono went bankrupt in the 1990s and was taken over by Pöyry which created the affiliated company Ramse. (Ruostetsaari 1998, 183-184.) Ruostetsaari (1998, 185) continues saying that because of limited funding some options can be left out of the research which obviously affects the outcome of the research.

The way research is done by consultants (limited options taken into account in the research, the view of person who is paying for the research etc.) is not problematic for people in the administration of ministries or companies because they know this is the name of the game, that the research outcome may not be objective. Parliament members may think the research is produced in an objective way and therefore not realizing the specific nature of research done by consultants. The way research is manipulated is because research which sets clear guidelines and scenarios does not fit the requirements of deregulation and market-based decision making. Ruostetsaari concludes that in a nutshell this is about the connections between the entity producing the information and the interests of the actors in the field of energy issues. He also says that to ensure the quality and objectivity of information it should be produced in the view of numerous fields of science and by many research institutions. (Ruostetsaari 1998, 185-186.)

It seems that energy policy is not transparent when it comes to making decisions. This makes researching this topic very interesting. It is also remarkable to see how little climate related issues seem to matter when energy policy is being prepared. According to the research by Ruostetsaari (1998, 2010) the elite theory has significance when reviewing energy policy. There seems to be an elite structure in Finnish energy policy. This of course raises the question if this topic needs to be researched but reviewing the topic from the view of biofuels is interesting.

5.1 The structure of the Energy Elite According to Previous Research

According to Ruostetsaari (1998) the energy elite consisted of the following in 1987-1988:

- the leading cabinet parties
 - the Social Democrats and the Center Party
- three public authorities
 - the Minister of Trade and Industry, Finance and the Environment
- two state owned energy producers
 - Electricity: Imatran Voima Ltd., Natural Gas: Neste Ltd.
- And one privately owned electricity producer
 - Pohjolan Voima Ltd.

Another private industry was Nokia Ltd. Organizations in this elite were the Cooperation Delegation of Electricity Producers (STYV), the Central Association of Finnish Industry (TKL) and the Central Association of Finnish Forest Industry (SMKL). Among research institutions were state-owned Research Center of Finland (VTT) and privately owned Ekono Ltd. (Ruostetsaari 1998.)

The difference between the current situation and the previous situation is the following. The role of the European Union is stronger, the role of the Ministry of Employment and the Economy is stronger and the composition of the composition of the Cabinet has changed. Otherwise the elite structure is the same in Finland today.

Composition of the Energy Elite in 2010 (Ruostetsaari 2010, 149-152):

The elite according to Ruostetsaari (Ruostetsaari 2010) is:

- The European Union
- The Cabinet and the two leading Cabinet Parties (The Center Party and the National Coalition Party)

- The Ministry of Employment and the Economy, The Ministry of the Environment, Ministry of Employment and the Economy,
- Government owned energy companies Neste Oil Ltd. and Fortum Ltd., Pohjolan Voima Ltd. which is owned by the forest industry
- Interest groups
 - Confederation of Finnish Industries (EK), Finnish Energy Industries (ET)
- The Technical Research Center of Finland (VTT).

In a decade the elite composition changed only a little. The Center party was replaced by the Coalition party, as was also the case in the Cabinet coalition. Ruostetsaari also states that one major change was also the role of the EU getting stronger. This led to the situation that energy policy became dominated by the Cabinet here in Finland. Also the role of the Ministry of Employment and the Economy has become massive with the lead of this ministry's Minister Mauri Pekkarinen and how the EU changes the role of national actors. Further, Neste Oil Ltd. and Fortum Ltd. have power because of the ownership of the government and the board of directors which is politically chosen because of the government ownership. The interest groups related to energy have merged and made their power even stronger. The inner core of power has the two major interest groups ET and EK. EK was created by merging major energy organizations and EK was also an outcome of merging interest groups. This has made the influence of these two interest groups (EK and ET) quite massive. Otherwise the elite structure is the same. (Ruostetsaari 2010, 149-152.)

6. Research Methods

Interviews and questionnaire

According to Silverman (2005, 7) qualitative research methods are appropriate if you want to research something in detail. One reason for not using quantitative methods was that filling out a structured questionnaire can be very non-motivating and the topic needed in depth research. Conducting power structure research according to Domhoff (2007) should be based on a combination of “membership network analysis” and content analysis. According to the possible unreliability of government documents stated by Domhoff (1968, 251- 278) it seems that interviewing people could be a reliable way to collect research data.

6.1 Interviews

To research this topic thoroughly, massive data collection would have been required, because Finnish energy policy is not purely national – it is global. The actors that should have been interviewed to make this research thorough would have been: OPEC, Russia, all major companies and countries importing oil, biodiesel producers, Ministries, parliament members, NGOs, researchers and consultants and cities and towns. This is too massive and not expedient in this case. In the national context results can be obtained without interviewing every possible actor. It seems that people who are part of the process of making decisions know who are the salient actors in the field.

The main data of this research, the interviews, were collected by using a questionnaire that can be found in the appendix. The original questionnaire was in Finnish. A semi structured questionnaire was used for the interviews because some of the topics that were explored are things that people might not want to talk about and because some of the interviews were conducted as phone interviews the questionnaire helped keeping the interview on track. Using a semi structured questionnaire is according to McIntyre (2005) good when doing phone interviews because questions must be straight forward. In the questionnaire areas related to political, financial and technological issues were asked. Technological and

financial questions were useful because they often revealed possible elites that were not mentioned when asking about the power of influence of different actors directly. First during the interview there was a short introduction part which was “a warm up” to help the interviewee get into the subject. Secondly, there were the questions related to power of influence and how decisions are made in the view of the interviewee. Thirdly, there was the section related to technical and financial issues. The questions were not asked in the same order as they are in the questionnaire. The interviewee was given the freedom to set the pace.

The interviews were conducted in Finnish. The quotes have been translated to English, the original quotes can be found in the appendix. The translations were done so that they were as close to the original way of expressing the matter as possible. In some cases the sentences had to be changed a bit because some ways of expressing matters in Finnish make no sense in English.

As a post graduate student it was sometimes difficult getting interviews stating that I am working on my master thesis, so in this point of my studies this has been a limiting factor. Maybe someone working on their doctoral thesis would have more credibility. But I did get a very good reception from many people.

13 people were interviewed whose occupation and position varied. There were five politicians, one activist and expert in energy matters, three experts in energy matters, two civil servants and two business representatives in the field of methane and biomethane as a motor vehicle fuel. The politicians were from different parties and of different rank. To protect the anonymity of the interviewees, I will not distinguish who was of what level; Finland is small country – it's too easy to guess who was who. Neste Oil Ltd. was asked for an interview but they declined saying they have no interest in biogas. Five interviews were done face-to-face and the rest were done by phone. Face-to-face interviews were conducted with two politicians, two experts and the one expert and activist in energy issues. The interviews lasted between a bit over one hour to 15 minutes. The amount of transcribed pages were per interview between 3-10 pages. Phone interviews have been

done because traveling would have consumed too much time and money. The limiting factor was mostly related to money, traveling would have been too expensive. All the interviews were taped and transcribed after taping. According to McIntyre interviews should be taped because it is possible to miss things during the interview; sometimes context, sometimes just meaningful pauses (McIntyre 2005).

The interviewed people were from different groups, so the group was heterogeneous but when it came to biogas and political elites they said the same things so it appears to be that the amount of interviews was enough. (Mäkelä 1990, 52.). I chose the people to be interviewed by asking researchers and people who act in the field who should be interviewed; this is called snowball sampling. I tried continuing the interview process by interviewing people who were mentioned to be influential. This didn't work in all cases. One actor (Neste Oil Ltd.) refused to give an interview. Institutional actors were researched by interviewing government bureaucrats. But I managed to proceed in the elite structure to the point that I started getting the same answers.

There was one interview in which the interviewee was clearly exhausted and this made it very difficult to conduct the interview. This interview was done by phone and the person being interviewed was on a train. Also another interview was done when the person being interviewed was on the train. This interview was very short and matters were not discussed in depth. One interview was done on the phone when the interviewee was having their morning coffee in a cafeteria. It seems that when people are out of their office or their home the interviews are very short. This is something that could have been avoided but just getting in contact with these people was often very difficult so complaining did not seem to be an option, it was clear that their schedule was very busy. Other phone interviews were done when the interviewees were in their office or at home. These interviews lasted for almost one hour or even a little bit over one hour. Five phone interviews were in depth. Interviews done face-to-face were very good. Matters were discussed in depth but this happened in the best phone interviews also. One was very reluctant to name any specific actor by name but they were mentioned indirectly. I managed to get an interview from a very high level politician. Politicians and business representatives were very

knowledgeable. They seem to have the best idea on how power is structured in Finland.

6.2 Power Structure Research

In this research, the method of power structure research was used as a method of analysis. Power structure research can be conducted by content analysis of interviews. According to Kadushin (1968) this was called “the reputational method” where some matter is studied beforehand and the most important decision makers defined. Then the people are interviewed and asked to rank the most important decision makers in their opinion and then in turn interviewing the people nominated. (Kadushin 1968.) Today the “reputational method” is called social network analysis. Social network analysis has turned out to be very efficient in uncovering networks of power (Domhoff 2007). According to Domhoff (2007) there are indications that the method is sensitive to cross-national differences which gives it more credibility even though it was very much criticized by pluralists.

According to Domhoff (2006), the four power indicators in power structure research are:

- What organization or class receives the most of what people seek for and value?
- What organization or class is over-represented in key decision-making positions?
- What organization or class wins in the arena of decision?
- Who is thought to be powerful by knowledgeable observers and peers?

The word class is mentioned in the questions above. I have left out the question of class. It seems that this just shows how versatile this method is if it can be used when researching classes too. Mills used a methodology where he did not study any decisions made by the elite he called the power elite. He studied two of the power indicators that Domhoff mentions in the list above; Who governs? Who benefits? (Domhoff 2007)

The existence of an elite appears to be the situation in almost every modern day society (Birch, 2001, p.186). According to Meisel (1958, 361) there are the three Cs that are the characteristics of the existence of an elite. These are: group consciousness, coherence,

conspiracy. Conspiracy is used in the sense meaning a common will to act, not secrecy. (Parry 1969, 2-31.)

I used the indicator “Who is thought to be powerful by knowledgeable observers and peers?” and “What organization wins in the arena of decision?” by interviewing people. It seems that people in key positions know who are the most influential institutions and people. Also the question “What organization receives the most of what people seek for and value?” has been researched when considering what company seems to be the most beneficial to the government. This was done by using information from the website Talouselämä (2011a, 2011b, Lähteenmäki 2010). The issue should have been researched by going through the annual reports and financial information of the companies but it seemed that Talouselämä (2011a, 2011b, Lähteenmäki 2010) was reliable and could be used to save time and keeping the research from becoming too massive. The government documents (Finnish Biogas Association 2009, Ministry of employment and the economy 2009, West Finland Regional Environment Centre 2006, Ministry of the Environment 2009a & b, Maa- ja metsätalousvaliokunnan lausunto 21/2010 vp, Finnish Government 2010) were not really part of my research data; they were just supporting data for the researcher to give ideas on what other actors could have meaning. When reviewing the government documents, the question of policy made by political bureaucrats is difficult when studying documents because policy by bureaucrats is a hidden type of policy. The interviews and the documents were coherent but the interviews produced much more in depth information which cannot be found in government documents. This method seems to be very efficient as stated by Domhoff (2007).

6.3 Content Analysis

It was stated in the chapter on power structure research that power structure research is a combination of content analysis and social network analysis, so content analysis is within the chosen method. Wilkinson (1997, 182 – 183) states that content analysis is a relatively systematic and comprehensive summary or overview of the research data as a whole. In

content analysis the idea is to look for recurrent instances in the research data which are grouped together by coding. The unit of analysis provides the basis for deciding on how the research data is coded and then these codes are applied to the whole document.

According to Alasuutari (1994, 30- 31), qualitative research consists of two stages; reducing the amount of findings and solving the mystery. First, the research material is strained through the research theory to keep the research data “in control”. After that, the findings are put into bigger categories reducing the amount of separate data. (Alasuutari 1994, 30- 31)

According to Tuomi & Sarajärvi (2009, 95-99) research can be analyzed by a method that is based on the theory, lead by a theory or it can be lead by the research data. In a research where the analysis starts from the research data the intent is to create a theory. When the analysis is based on the theory it is used to test the data in a theoretical context. In the research where the theory leads the analysis the groups to be analyzed are chosen from the research data but previous information guides the research. When generalizations are used to create a single observation which creates a conclusion the term deductive reasoning is used. Inductive reasoning is when single observations creates a generalization or theory. There is also abductive reasoning where observations are also lead by an idea. Abductive reasoning leads often to the best possible explanation. (Tuomi & Sarajärvi 2009, 95-99.) In this research abductive reasoning is used. The analysis is based not only on the theory but also on previous information and hints from the research data.

With content analysis any type of communication which describe social behavior can be researched. According to Chadwick et al. (1984), content analysis can be used for example in studies of the context of TV shows, how a TV show effects the viewers, counting negative stereotypes from literature etc. Content analysis can be used to test a hypothesis which is not the purpose of, for example, discourse analysis. In this case it seems that content analysis is best for this research. The downside of content analysis is that it can be difficult to find messages relevant to the research question and finding in the same medium

a combination of the desired variables. (Chadwick et al. 1984.)

According to McIntyre (2005, 192-204), there is also a question of inter-rater reliability which basically means that different people interpret things differently; content analysis is thus subjective, it is only one interpretation of reality. An interview is also an obtrusive method meaning that the interviewer may cause the interviewee to react or answer in ways that are different from “normal” reactions. This is especially relevant in this research since transparency and possible corruption in energy political decision-making is being researched. It required a lot of thinking on how to conduct the interviews and analysis without putting words in the interviewees’ mouths.

7. Elite Structure in Finnish Biofuel Policy

The elite structure has been theoretically divided into two groups, the inner and the outer core. The terms inner core and outer core were originally used by Mills (2000, 288-290). He says that the inner core consists of people who can interchange roles, e.g., a banker who is also a parliament member. The entities of the inner core are in leading positions when considering the institutions which give them power, in addition to the dual role they have in decision making. Mills continues to say that the inner core can also include people who are able to mingle with all elite groups. An example would be a lawyer who handles the legal matters of investment bankers. The lawyer is in contact with elite members even if he stays in his appropriate legal professional role. (Mills 2000, 288-290.)

The outer core consists of people whose opinions do not count so much. They must be considered when making decisions; but, they lack any significant influence. Mills also uses a third category, middle category of power which includes the Congress and pressure groups who are important when the power elite needs to lobby something through.

The use of the two terms, the inner core and the outer core, (Mills2000, 288-290) is different in this thesis. Here, the inner core consists of actors who are in contact with salient elite members and their views serve as the main guidelines for policies. The outer core consists of actors who are invited to hearings; but, their views are not the main guidelines for policy. The members of the outer core can also be members who are needed when something needs to be lobbied through. In this sense, the term outer core is a combination of Mills' (2000, 288-290) definition of the outer core and the middle levels of power. The outer core is not part of the elite; but, they have some contact to the salient elite members which makes them more powerful than other actors in society.

Three questions have been answered in this thesis when reviewing the inner core and outer core of Finnish energy policy on biogas as a motor vehicle fuel. First, the question: “In what context are they elites?” In other words, what creates the framework in which they are members of the elite? Second, “Who are members of the elite?” And third, “why or

how are they members of the elite and what makes others not members of the elite?” What are the characteristics and the prerequisites of being a member of the elite or not to a member? The context is explained only once because it defines the framework in which both the outer core and the inner core exist in.

The following pages discuss the members of the elite who seem to be the most relevant actors when ascertaining and studying who are the energy political elites of biogas as a motor vehicle fuel. The elites are not necessarily in favor of biogas. These actors are elites in the sense that they have the most power when considering the possible future of biogas as a motor vehicle fuel. Their position in an important institution and connections with other elite members make them a part of the inner core. The market economy and the EU set the boundaries for these actors to work in. The EU is like the central administration of the federal state; it sets the goals of policy. The specific content of policies is still in the hands of national decision making. This elite structure is based on everything presented in this thesis and is therefore one of the main conclusions.

The question about what fuels will be dominant in the future was also researched. This was not the intention of this thesis; but, the significance of liquid biofuels arose when doing this work. Liquid biofuels were not directly mentioned in the interviews; but, when investigating what fuel the dominant companies produce and what they have invested in, liquid biofuels were discovered. Also, the role of government-owned companies came up when deciding what could be the dominant fuel in the future. These matters and how they were researched are discussed later in the chapter where the characteristics of the elite are described and discussed.

The Climate Change Economy

- The Market Economy
- The European Union (EU)
- The Decay of Representative Democracy

The Inner Core

- Companies with interests in liquid biofuels: Fortum (energy production), Neste Oil Ltd. (liquid motor vehicle fuels), Vapo (energy production), paper companies with interests in liquid biofuels: Metso and UPM Kymmene. The forest industry: Metsäliitto
- Research institution: VTT
- Interest group in the field of energy: Finnish Energy Industries
- The Cabinet in 2007-2011: The Center Party (Keskusta) and the National Coalition Party (Kokoomus)
- The Minister and Ministry of Employment and Energy
- The Minister and Ministry of Finance
- The Prime Minister
- Political Bureaucrats

The Outer Core

- The Parliament
- Small and Medium Sized Companies (SMEs)
- NGOs

Unclear Elite Position

- Cities and Towns of Finland

In this research the indicators of power are according to Domhoff (2006): “Who is thought to be powerful by knowledgeable observers and peers?”, “What organization wins in the

arena of decision?” and “What organization receives the most of what people seek for and value?” It seems that these are the key questions and they seem to give an accurate view on the situation. The first question, “Who is thought to be powerful by knowledgeable observers and peers?”, was researched by using content analysis, i.e, the transcribed interviews were reviewed to find out who is mentioned as being a influential actor. The second question, “What organization wins in the arena of decision?” was more difficult to research and required the use of government documents (Ministry of the Environment 2009 a & b, Finnish Biogas Association 2009, Ministry of employment and the economy 2009, West Finland Regional Environment Centre 2006, Ministry of the Environment 2009 a & b, Finnish Government 2010, Maa- ja metsätalousvaliokunnan lausunto 21/2010 vp), and the interviews. The third question, “What organization receives the most of what people seek for and value?”, was researched by combining interviews, financial information from the website of Talouselämä (2011a, 2011b and Lähteenmäki 2010), and government documents (Ministry of the Environment 2009 a & b, Finnish Biogas Association 2009, Ministry of employment and the economy 2009, West Finland Regional Environment Centre 2006, Finnish Government 2010, Maa- ja metsätalousvaliokunnan lausunto 21/2010 vp) annual reports of companies (Metso 2010, UPM.Kymmene 2010, Stora Enso 2010, Neste Oil Ltd. 2010). Having resources was, according to Mills, (2000) one feature of the elite. This makes financial information important. Using a website like Talouselämä (2011a, 2011b and Lähteenmäki 2010) is questionable because it is a secondary source of information but it seemed that it could give a tentative view on who is the most powerful actor financially when comparing businesses. The website of Talouselämä(2010) seemed reliable. The research data was becoming too massive considering this is only a master thesis; so, a secondary source was used. Going through financial reports of companies dealing in energy would have been very time consuming and it would have made the research data too massive.

This last part of the thesis is structured as follows. First, the context in which the two groups are powerful or not powerful are reviewed. Second, who are the members of the two groups? Third, what are the characteristics of these two groups? What makes them an elite or not an elite?

7.1 The Framework – The Climate Change Economy

According to power structure research, the analytical tools applied to find out the answer to the question of the framework are: “Who is thought to be powerful by knowledgeable observers and peers?”, “What organization wins in the arena of decision?” and “What organization receives the most of what people seek for and value?”

The European Union (EU) was said to be powerful by all interviewees, which answer the question: “Who is thought to be powerful by knowledgeable observers and peers?” The directives by the EU (COM/2010/0639 final, 2009/28/EC) which are related to biofuels, are the answer to the question: “What organization wins in the arena of decision?” The question: “What organization receives the most of what people seek for and value?” is important when reviewing the situation of the market economy. Profit is what the members of the elite seek. The market economy and the European Union (EU) are therefore the answers to the question: Within what context? The EU sets the legislation which defines the political prerequisites and boundaries in the context of the climate change economy. The market economy sets the financial prerequisites and boundaries. In other words, what is profitable and what is not is related to politics and policies and the mechanisms of the market economy. Policy can guide what is profitable and what is not by setting, for example, taxes and subsidies but the market economy sets the demand that the policies must be profitable. Therefore, the context in which the climate change economy prevails consists of the institutions; the EU and the market economy.

Mills did not have an economic aspect in his theory which seems to be a matter that should have been taken into account. The lack of an economic background seems to be relevant. (Aptheker, 1960, 22; Sweezy 1968, 121.) As explained previously, things seem to be at least partly related to how the market works. The economic reality of this world cannot be disregarded. Therefore, the market economy has been mentioned in this thesis even though Mills did not have an economic theory. Mills (2000) did mention economic actors and that their goal is to make money but he did not mention any type of economic theory. Money

comes up many times in his book when speaking of the strength of an entity's influence. When considering if an economic theory is needed, one could think that the real rulers are the members of the elite, making the economy its servant. From this point of view, an economic theory is not needed in Mills' (2000) case.

The climate change economy is based on Mills' (2000, 276-277, 1-30) idea of the war economy which combined the economic, political and military elites. In Finland's case, the political and economic elite are dependent on each other. The climate change economy is created by the EU by legislation which sets the goals for the member states of the EU (COM/2010/0639 final, 2009/28/EC). Legislation by the EU (COM/2010/0639 final, 2009/28/EC) creates a situation where, according to the interviews, businesses and politicians of the member states must try to work in the framework set by the EU and the market economy. Climate change combined with policies set by the EU have created a new situation which creates new business opportunities and obliges companies and states to fulfill the EU's requirements. Without the demands of the EU and climate change, the companies' business interests would not be relevant. The climate change economy was not mentioned as such during the interviews. It is, instead, an analytical result based on the interviews, additional research data, and Mills' (2000) theory; and, it is one of the main conclusions of this thesis. Therefore the situation is the same as Mills stated when speaking of the war economy (2000, 293-294). In this thesis, climate change combines the political and economic elite in the same way the war economy combined the political, military and economic elite in Mills' (2000) research.

The climate change economy is also a solution to Dahl's (1968, 28-30) critique that the elite must be well defined, and that the elite cannot be powerful over every aspect of society. Thus, the elite has been limited to the topic of the thesis, biogas as a motor vehicle fuel. Biogas seems to mitigate climate change when reviewing the information that was presented in the first chapters, therefore the term climate change economy can be used. Dahl says that there must be a fair case made from samples where another group prevails over another. (Dahl 1968, 28-30.) In this thesis, there is a fair case of statements in which certain groups came up.

7.1.1 The Market Economy

The market economy is a powerful institution; but, it is not omnipotent. Mills (2000, 120) writes that there was a committee in government-level decision-making populated by representatives of the industries. He states that this outcome is inevitable. The matter at stake is too important to be decided by the market and there is no single company making the decisions. (Mills 2000, 120.) This shows that the market economy does not always rule and could justify leaving out an economic theory because political methods are used to succeed. But, it also seems that the market economy sets certain rules which the elite members must follow and fulfill. When reviewing the question: “What organization receives the most of what people seek for and value?”, the market economy forces actors to seek profits; and, therefore sets additional goals for policies which are related to climate change. Profit is what leads to success.

As stated earlier, the market economy is an institution that defines the framework even if it can be superseded by powerful actors. The market economy is relevant because, without it, the way society works could be very different. The idea that the market economy is just one way society could have formed has been mentioned also by Polanyi (2009). Foucault (2000) also mentions the same in his book “Discipline and Punish” that, for example, the current way of punishing criminals is just one way the penal system could have evolved. Therefore, it seems that the market economy is also just one of several possible ways that could have governed and guided society. Thus, the market economy is an institution created by people, not the absolute truth of how things could be.

In quote 1, one can see that companies are using political demands to create profitable businesses that have become important when the state of the environment became more important. This connects the environment to the market economy because the methods of the market economy are used.

1. *“...many things have been resisted by other quarters and matters have advanced in a positive way. Matters that used be resisted by, e.g., businesses, are now matters to be proud of, for example, waste water management. There was great resistance in the 80’s that waste water will not be treated; it’s not possible in Finland. Now the environment and sustainability are areas of business which .” (Expert)*

Businesses are utilizing the new situation that climate change, environmental protection laws and the EU have created. Waste water management is not really a part of climate policy, it reduces the amount of harmful substances that would otherwise be dumped into the environment. The quote on waste water management was used as an example by the interviewee to say that the new environment has created new areas of business.

According to quote 2 and 3, it seems that some actors have a strong belief in the market economy solving the current situation, even though what is needed, according to the interviews, are strong political efforts. The overall feeling that arose during the interviews was that politicians seem to somehow feel that they are overpowered by companies who are freer to make independent decisions or have more influence. The explanation, according to the interviews on how businesses are free, was that businesses are the ones who have the freedom of the market, making the market economy a relevant factor that gives the companies great political and economic influence. According to the interviews, the companies' main intent was to make profits; they do not have the responsibilities of the national state. The role of companies in governmental decision making was something that Mills (2000, 120) wrote about too. Mills (2000, 120) wrote that the economic actors start to join forces with the political elite when it comes to decisions regarding the future because leaving things to be decided by the market would be stupid. This shows that the political and economic elite can be unified. It seems, although, that methods related to the market economy are not able to solve the current situation. This could be related to what Perrings (1987) said about the market economy being designed to fit a infinite world. Therefore, in the current situation, the market economy could be obsolete because it cannot solve the current problem with limited resources and the situation with climate change. That desired

goal, dealing with climate change, seems to require a unified global will if mitigation of climate change is the true goal of policy.

2. There is enough experience on how the market takes care of the situation. The experience has come by the experiences of the financial crisis and the depression. Once again, to those who believe in the market and the beneficial side-effects of avarice, which is able to run society, this is not how things really are. And has not been. And it can be seen in these situations in which the global crisis is in now. Of course, mandatory regulations to control the situation are needed; so, we can proceed in mitigating climate change. Biogas is one relevant part of this and we are late; actually the time to act was already a while ago. (MP)

3. I've heard constantly that businesses have too much of a say on it (energy policy). The companies can make decisions freely; we need some type of regulation. The energy market in Finland is already one of the freest markets in Europe. (Minister)

In quote 4 and 5, the role of the political elite and the economic elite can be seen. They are interdependent. It was said in the interview (Quote 4) by an expert in energy and climate issues that Swedish politicians have been able to make decisions despite the resistance from other actors. The fact that Finland has environmental legislation seems to be proof of the political elite having power despite the influential power of the economic elite. It seems, according to the researcher's conclusion, that if the economic elite would be totally dominant, and the politicians powerless, we would not have any type of environmental legislation. Further, if the political elite would be powerless, there would be no need to lobby when political decisions are made. Quote 5 shows how parliament members are lobbied. Quote 5 also shows that issues related to fiscal policy are the most important issues interconnecting the political and economic elite.

4. "...for example, the law that obliges filling stations to sell biofuels. If we would go and ask the filling stations if this ok with them, none of them would say yes. This is clear, if you go and ask the filling station chains if they want this type of forced law which will oblige one to sell biofuels, it is clear that none of the chains want it. The same in Finland, none of

the filling station chains wanted it. In Sweden the law was made despite the resistance.”
(Expert and Activist)

5. *”...to us politicians, it is said that Finland and its industries will lose its ability to compete. Then we will not have income from export; these are scary questions. Therefore, politicians cannot disregard what they (the industries) say. And this is scary. I think that in expert hearings and in the committee of the economy the only view that is stressed is the view of the economy and export. The view on where the world is going to is missing; this would create different types of comments.”* (MP)

It seems that fiscal policy is what dominates when energy policy is designed. Energy policy does not seem to be a truly separate agenda; it is connected to economic goals. The reason for this is because market methods are used, i.e., the market economy prevails. It is questionable if sustainable energy policy can coexist with the market economy.

7.1.2 The European Union

The European Union (EU) seems to have a role when further defining in what context does the presented elite structure prevail. It appears to be, according to the interviews, and directives set by the EU (COM/2010/0639 final, 2009/28/EC) that the European Union has great influence and seems to be one actor in addition to the market economy when researching the question of biomethane as a motor vehicle fuel. The indicators of power that were used when reviewing the situation of the EU were: “Who is thought to be powerful by knowledgeable observers and peers?” and “What organization wins in the arena of decision?” These questions were researched by reviewing the interviews and going through the legislation of the EU respectively. Since the purpose is to concentrate on national actors, the EU has been placed in the framework because it defines the field different elites work in. Everyone said that Finland has been against renewable energy, and that without the demands from the EU on increasing renewable energy options when producing energy, Finland would have not had the motivation to increase the use of renewable energy. The person who did not think the EU was the major elite stated that the

energy industries are the most influential elite because they have the freedom of the market (Quote 3 and 30). The European Union has, according to the interviews, legislation of the EU and conclusions made by the researcher, the power to overcome the strong influence that the Finnish industries have over Finnish policy. Therefore the European Union is in the framework.

The EU is a very strong actor and has the power to set goals for member states through directives which the member states can carry out with the means of their own choice (COM/2010/0639 final, 2009/28/EC, Raunio 2008). This is also the case when it comes to energy policy (COM/2010/0639 final, 2009/28/EC). Some say that the resistance of Finland, when it comes to renewable energy, has been so strong that the objectives set by the EU (2009/28/EC) would have never went through if the EU would have not pressured Finland (see quote 6 and 7). The EU also seems to be the actor which sets the rules when it comes to the power of the energy industry because it seems that, according to the interviews, it can force member states to make decisions that are against the will of the large industries (see quote 6).

6. *“Our obligations to make our energy use more efficient and increase the share of renewable energy and reduce emissions, this is what affects energy policy the most right now...before these forced and mandatory obligations from the EU, nothing happened in this country. Politics is very EU-led, only when the EU forces Finland to do something, Finland has reacted. For example before this goal from the EU there was under one per mil of biofuels in Finland. But now Finland is forced to increase the share of biofuels to 5,75% and after that 10%.” (MP)*

7. *“The EU could enable a better state of energy policy than what Finland has now; but, the EU's possibilities to force Finland are limited. Of course, it has the power of force when it comes to motor vehicle biofuels. First, Finland didn't want to do anything which can be seen in the example mentioned before when producers of motor vehicle biofuels were asked if they want that these types of laws to be designed, obliging the use of biofuels. The producers of fossil fuels said no; so, Finland said to the EU no. We will not start carrying out the directive of motor vehicle biofuels; but, when the Commission threatened*

Finland with the EU court of justice Finland, was forced to do something.” (Expert and Activist)

According to quote 6, the amount of biofuels as a motor vehicle fuel was only about one per mil before the objectives set by the EU. So, when reviewing the following documents (Ministry of the Environment 2009 a & b) and directives set by the EU, the role of the EU seems to be significant in increasing the use of renewable energy and energy efficiency. According to the Ministry of the Environment (2009), the goal for Finland is that by the year 2020, 20% of energy production must be carried out by renewable energy sources. By 2020, energy efficiency should increase by 20%, and the amount of biofuels as a motor vehicle fuel should increase to 10%. (Ministry of the Environment 2009b.) These objectives have all been set by the EU (COM/2010/0639 final, 2009/28/EC).

So, when observing this from the viewpoint of biogas, the EU is a strong elite, which in this case is part of the framework. What is also remarkable is that Finland has been very much against renewable energy according to the interviews. From this view and when reviewing quote 5 which implies that climate and energy policy is an extension of financial policy, it seems that Finland probably would not have had great interests in increasing the use of biogas without the obligations set by the EU. The EU has had the power to push these objectives through despite the resistance.

The power of the EU makes it seem that the EU is very close to the federal government of the United States, making Mills' (2000) statement of centralized decision making relevant. In the United States' Constitution, it is stated that the federal government can supersede the individual states when it comes to interstate commerce. Anything going across the boundaries between two or more of the fifty states of the United States can be seen as a form of interstate commerce. Also, the federal government can do anything for “the common good,” such as health care. A lawyer (McDermott 2011) from the United States was consulted about this matter. This is also one key idea of the EU; freedom of commerce. The EU has also power to enforce common goals of the EU on the member states. (U.S. Constitution, [KOM(2007) 724, European Union.] Saying that the EU is a

federal state is, of course, not true but it has the features of a federal state. Mills (2000, 7-9) stated that policy making became centralized increasing the impact of decisions. Differing from Mills' statement, this is a beneficial feature of the EU, if environmental issues are considered. He saw centralized decision making as a negative feature. Centralized decision making is a negative feature because this situation existed due to a strong unified elite. (Mills 2000, 7-9) When reviewing this from the view of the unified elite, centralized decision making is a negative feature. The unified elite is discussed later in this thesis.

To conclude, the climate change economy exists in the economic and the social structure of the area of the European Union. The market economy and the EU set the context that different actors exist in. Therefore, it would seem that to change the situation, the whole economic and social structure must be changed. This leads to the thought that successful climate policy might not be possible if drastic changes are not made.

7.2 The Inner Core

The inner core and the economic elite of biogas as a motor vehicle fuel consists of companies with interests in liquid biofuels and which companies could have a strategical meaning when considering the GDP of Finland. These are: Fortum (energy production), Neste Oil Ltd. (liquid motor vehicle fuels), Vapo (energy production), paper companies with interests in liquid biofuels: Metso and UPM Kymmene, and a company in the forest industry because of interests in biofuels: Metsäliitto. Research institution VTT also came up when reviewing projects related to biofuels. An interest group in the field of energy was also mentioned: Finnish Energy Industries (ET). Political elites were: The Minister and Ministry of Employment and Energy, The Minister and Ministry of Finance and The Prime Minister and the political bureaucrats of these aforementioned political institutions. The Cabinet in 2007-2011 seems to also be one elite member. The two largest parties in the Cabinet were: The Center Party (Keskusta) and The National Coalition Party (Kokoomus). One member of parliament also mentioned the trade unions as having very much power (quote 26).

One thing to note when interpreting research results is that no interviews from the rival companies of methane and biomethane (when used as a motor vehicle fuel) were obtained. Companies of liquid biofuels and their representatives did not want to comment on this topic. They simply stated that they have no interest in biogas as a motor vehicle fuel. This, of course, is one type of result. They stated that they have no interest in biogas which seems to lower the possibilities of biogas becoming a dominant fuel. Also, when speaking with experts in energy, it was said that biogas does not have the potential to be a dominant fuel. So, this also rules biogas out. These matters are discussed in more detail later.

The indicators of power structure, when researching what the elite structure is like, were: “Who is thought to be powerful by knowledgeable observers and peers?” and “What organization receives the most of what people seek for and value?” The large companies and the lobbying group, Finnish Energy Industries, have great power in Finland which is stated in quote 8 and 9.

8. *“The large industries and big energy producers have great power. Fortum has great power; Vapo, Neste; these types of actors in the energy sector. And, also the forest industry and metal industry.” (MP)*

9. *“...Finnish Energy Industries has large energy producers and big energy users as members and they use this organization to push their interests through.” (Expert)*

Companies and organizations mentioned in quote 8 and 9 were Finnish energy industries (ET), Fortum Ltd; Neste Ltd., the forest industry, the metal industry and Vapo Ltd. Finnish energy industries (ET) is a lobbying organization for the large energy producers and energy users. Neste Oil Oy is a oil refining company that traditionally has been selling diesel and gasoline on the Finnish market. Neste Oil Ltd. is also a company with interests in biodiesel (Neste Oil Ltd. 2010). Vapo is a company that supplies customers with biofuels, produces heat from biofuels, has waste treatment plants and sawmill holdings (Vapo 2010). Fortum is a large energy producer in the area of hydroelectric power, nuclear power, combined heat

and power (CHP), condensing power and wind power (Fortum 2010). The mention of the forest industry could be related to the finding of Metsäliitto when reviewing liquid biofuel projects. The metal industry was not mentioned by other interviewees.

Mills also noticed in his research that large companies had great power. He also stated that rich families are powerful, not because of their wealth alone. They have power because of the institution they belong to; in this case, Mills meant big corporations. Wealth combined with a position in an important institution gives the actor a powerful position. (Mills 2000, 1-30.) Finland's situation seems to be similar. It cannot be said, though, if a certain family is powerful in Finland as Mills did. In this research, it can only be said that the large energy companies are wealthy which gives them a strong position as an important institution. Mills' idea on institutional power is therefore important. Mills stated that institutions have power because of the importance of the institution and the power, wealth and prestige that institutions have. (Mills 2000, 9-13.)

When reviewing the topic of institutional power (Mills 2000, 9-13) and political institutions of Finland, the people interviewed spoke mostly about the Ministry of Finance and the Ministry of Employment and the Economy when asked about power in preparation of energy policy. In quote 10 the role of the Ministry of Agriculture and Forestry was mentioned when subsidies are being prepared for biofuels. The role of the Ministry of Agriculture and Forestry seems a bit unclear because only one person interviewed mentioned it (see quote 10). Also, the role of the Ministry of the Environment is unclear because it was not mentioned. The Ministry of Agriculture and Forestry seems to have importance; but, it is difficult to determine its role according to one quote. This question could have been answered by adding more government documents; but, as stated earlier the research data was already massive enough. The Ministry of Finance and the Ministry of Employment and the Economy seem to have the most influential role because they are the ones that were mentioned in almost every interview. In quote 11, the power and the significance of the big three, meaning the top three ministers, the Prime Minister, the Minister of Employment and the Economy and the Minister of Finance, have been mentioned which further implies that the institutions they lead are the most important ones.

10. *“...motor vehicle biofuels are connected to many ministries, it is not the exclusive right of the Ministry of Employment and the Economy. There is the Ministry of Transport and Communication, the Ministry of Agriculture and Forestry and the Ministry of Finance which has a role in every matter. So, when considering biogas, and if we consider production, and if it is produced on farms and production on that level, then it would be the responsibility of the Ministry of Agriculture and Forestry. Subsidies and things like that are the responsibility of the Ministry of Agriculture and Forestry.” (Bureaucrat)*

11. *“Power of influence in energy policy?...The most important ministers have it always, no matter what the Cabinet consists of. It is the Prime minister, Minister of Finance and the Minister of Employment and the Economy; they are very powerful.” (MP)*

There was one statement in particular that also shows how strong The Ministry of Finance is, including the personnel of the ministry. The statement reads that if the Minister of Finance and people in the Ministry of Finance are against something, even the Cabinet has problems getting their will through. (Quote 12) This further implies that, in addition to the Ministry of Employment and the Economy, the Ministry of Finance has a very powerful role.

12. *“...some key actors, The Ministry of Finance, people of the ministry are against even the Cabinet has problems get things quickly through.” (MP)*

When reviewing the role of the political bureaucrats, the power of the political bureaucrats was said to be very strong. This matter is reviewed in more detail in the section where the features of the elite are mentioned. But quotes 13 and 14 suggest that the political bureaucrats have a great role.

13. *“It does not matter who is in the Cabinet, politics is always the same. This is because in reality, the members of parliament do not have that much power; it's the political bureaucrats who have a lot of power. The more inexperienced the minister is, the more he/she lets the political bureaucrats decide on issues....I would say that this would be the opinion of many members of parliament.” (MP)*

14. *Of course, they are the ones who prepare all proposals. (MP)*

So, the essential part of the political elite seems to be the Ministers and the bureaucrats of the ministries. The leading ministers are: The Minister of Employment and the Economy, the Minister of Finance and the Prime Minister. The leading political institutions are: The Ministry of Employment and the Economy and The Ministry of Finance. Also, the political bureaucrats of these ministries seem to have a great role. The economic elite consists of the large energy producers and users who also seem also to have great importance. The matter is reviewed in more detail in the section describing the characteristics of the inner core.

7.3 The Outer Core

The members of the outer core are small companies and projects, the Parliament of Finland and NGOs. Companies dealing in biogas are Biovakka which sold a minority share of stock of their company to Gasum Ltd (BIOvakka 2009). The Energy Institute of Vaasa had a project called biomode which was about building a gas distribution network in the area of Vaasa and Seinäjoki (Biomode 2011). In addition, there is also the company Metenor Ltd. in Central-Finland. Metenor Ltd. which sells small quantities of biogas as a motor vehicle fuel (Metenor Ltd. 2010). In addition to these actors, there are some projects going on which are run by Jyväskylä Innovation (Vilkkilä, 2009). There is also a project going on in North Karelia, called the North Karelian traffic biogas project (Liikennebiokaasu.fi 2011). Another project called BioG is in Northern Ostrobothnia and is run by the Oulu University of Applied Sciences. The intent of the project run by the Oulu University of Applied Sciences is to improve the production rate of agricultural biogas production. (BioG 2010.)

The last project is called Biokaasua Keuruulle. Keuruu is a town in Middle Finland. The main intent of the project is to make biogas known and to make it possible to build a filling station providing biogas in Keuruu. (Biokaasua Keuruulle 2011.)

Biokaasu Keuruulle project is not related to Metenor Ltd. which is in the same area. When reviewing these projects, it seems that everything is still in a project phase or the production is small scale. So right now, it seems that the dominant actors are the actors in liquid biofuels and this makes producers and projects in the field of biogas a part of the outer core. According to the research data, companies dealing in liquid biofuels have large scale projects and production facilities which gives them a head start when compared to biogas. According to the interviews, these small projects lack credibility when compared to massive lobbying done by large companies.

Here again, Mills' statement on institutional power is relevant. The small companies are members of smaller institutions. These smaller institutions are not strong enough to give them power over larger institutions and make their claims meaningful on the level of government policy. (Mills 2000, e.g. 9-13)

When asking on the how non-governmental organizations (NGOs) affect decision making, there were many opinions. The effect they have on decision making was said to be small by the majority of the interviewed people. This question did not really start any grand conversations. It was said by many who were interviewed that NGOs can shape public opinion; but, in addition to that, the power of influence of the NGOs is not strong. NGOs are invited to the hearings where different opinions are heard when preparation work regarding new laws and proposals are made but in reality their level of influence is small. Mills (2000, 4) also noticed that pressure groups are not part of the elite. The pressure group's role is related to lobbying (Mills 2000, 247). According to the interviews and when viewed through the theory and power structure research, NGOs are members of the outer core. Thus, they do not seem to have a elite position. The role NGOs play can be seen in quotes 15 and 16.

15. *"The role of the NGOs is giving information and bringing different opinions to decision makers. Also bringing people together and creating exchange of information, keeping things up post and providing information could be their role."* (Expert)

16. *"Well, I don't see that it is that high (power of influence of NGOs). They can shape opinions but their work in this area is often exaggerated."* (MP)

To sum up, the members of the outer core are: the Non-governmental organizations, small and medium-sized organizations and the parliament. The matter of the parliament is discussed in more detail in the chapter describing the features of the outer core.

7.4 Why Are Some Members of the Inner Core?

The prerequisites of power in this analysis are based on Mills' theory. He speaks of social networks, institutions and the role and nature of knowledge (Mills 2000, 351-353, 9-15). He (2000, 13) also wrote that people who supersede themselves are members of the elite, and that certain kinds of individuals are selected and others rejected when elite candidates attempt to rise into an elite position. This statement (Mills 2000, 13) can be interpreted that people who have certain personal characteristics are elite members. Mills did not emphasize personal characteristics in his theory; but, his writings seem to be open to various interpretations. Mills' view was very negative, which should be acknowledged when using his theory. He seemed to see the world as a place of corruption and personal favors; but, this could have been intentional. Mills' goal was to wake up people on how things were in the United States in the 1950s (Horowitz, 1983, 256-280).

The elite member has a good position in a powerful institution because power is in the institution (Mills 2000, 9). First, large companies are important if their business is large enough to have significance when considering the GDP of a state. Second, large companies have a lot of resources which gives them a powerful position in society, maintains their

power and gives them the prerequisites of power, for example, when producing information for decision makers. Third, old boy networks dominate and members of large companies are part of these networks. Fourth, when reviewing the specific topic of this thesis, companies which deal in liquid biofuels were placed in the elite; but, they had to also have the advantage of financial wealthiness and size behind them. Ministries and Ministers had the advantage of being a major institution or a part of a major institution and having connections to social networks within the elite. The ministries have also the advantage of expertise in the form of educated political bureaucrats.

The issue of experience also came up during the interviews. Experience was not directly mentioned by Mills (2000). First, the actor trying to effect political outcomes has to be strong, educated and experienced. The Minister has to be experienced to be able to lead policy in Finland because political bureaucrats are the ones who will fill in the power gap which is created if the Minister is inexperienced. Second, experience seems to mean knowledge on how the society, decision making, and how its actors act. One could say that experience can be partly obtained by education, i.e. long and patient study. Long and patient study again requires persistence and other personal characteristics. Thus, personal qualities play a role when one is trying to achieve an elite position when interpreting Mills' writings (Mills 2000, 13). Third, experience could also mean being a part of the networks consisting of relevant actors because becoming a member requires knowing the members of the network, i.e., experience of being in the system. The importance of social networks and cliques were mentioned by Mills (2000, e.g. 15, 18).

Financial and institutional factors are elements which are features of the elite members. First, power is related to the institutional position of the actor or the institution itself. The institution behind single actors brings them power as Mills (2000, 9-13) stated. It seems that the institution must also be financially strong, or have a strong position in the society. Not every institution in society has power. Second, the more financial resources the actor has to produce information and to hire people to speak in favor of them, the more they have influence. Third, another factor related to influence and financial issues is masking

the information in a form that makes it seem more credible than information from other actors, i.e., brochures made of good quality paper, massive research, etc. which requires resources. Therefore, the market economy defines the influence of the actors here, too, when financial issues are emphasized. The more that actors have resources, the more credible they are (Mills, e.g. 9-13, 355). To get resources, one must be able to utilize the market economy. This is, of course, not enough one must also be able deal with political leaders to make the environment beneficial for the area of business of the company. The diminishing role of representative democracy which has been suggested in this thesis, based on the interviews, further strengthens the market economy and the EU, making policy to be defined by the leading politicians in Finland and making actors of the market economy, i.e., companies important. Ruostetsaari (2010, 150) mentioned that the EU has made the role of the Parliament smaller because policies are discussed between the leading politicians and the representatives of the EU. The statement in this thesis is slightly different from Ruostetsaari's (2010, 150). In this thesis, the strong unified elite is what diminishes the role of the Parliament.

To sum up, to be an elite member one must be experienced, a member of a vast institution with a powerful position in society, and/or financially strong. The actor must also be able to utilize social networks because it seems that decisions are prepared within these power networks. Also, when reviewing what makes someone able to utilize social networks, personal characteristics are important because it requires experience and, for example, knowledge on how the system works. In addition, the single elite member must be a certain kind of person to rise within the outer and inner cores of decision making.

7.4.1 Money and Liquid Biofuels

The strength of companies' influence was researched by reviewing interviews to answer the question: "Who is thought to be powerful by knowledgeable observers and peers?" The website of Talouselämä (2011a, 2011b and Lähtenmäki 2010) was used to find out what are the wealthiest companies in Finland, and by information from the Prime minister's

office (Prime minister's office 2011), answering to the question: “What organization receives the most of what people seek for and value?” Using the question: “What organization receives the most of what people seek for and value?” was based on the assumption that companies which are large and wealthy enough could have a strategic relationship to the Finnish economy. Annual reports (Metso 2010, UPM.Kymmene 2010, Stora Enso 2010, Neste Oil Ltd. 2010) of companies were also used to see what are the companies' plans for the future. The question: “What organization wins in the arena of decision?” was researched by reviewing interviews. Mills states that the elite consists of members who have all of what there is to have (Mills 2000). Therefore, it seems that the large energy companies and energy intense industries in Finland are the ones with the truly great influence because they are the major industries in Finland.

First, financial issues are dominant when considering future options implying that there is a coincidence of interest between the political elite and economic elite, as Mills stated (Mills 2000). Politicians are afraid to risk the economy of Finland. This seems to make liquid fuels dominant because liquid biofuels are what the big energy companies in Finland produce, and these companies seem to be considered important when reviewing the interviews. In quotes 17 and 18, it is mentioned that if a decision is against the will of the industries of Finland, the decision is not made which implies that the large companies are important. In addition, in quote 17, countries are said to be struggling to make profits and compete against each other. This further implicates the rules of the market economy and that global cooperation is missing. When reviewing the matter from the view of climate policy, successful climate policy would seem to require strong global cooperation. It also seems that fiscal policy is the most important sector of policy in Finland.

*17 . “...this world is run by the market. Prosperity can be shared only after financial success. And this is achieved by the industries, financial life, by increasing the GDP. It is the goal of every decision maker that there is as much profit as possible, making it possible to share this profit. If the numbers clearly show that a decision is against the interests of the industries then this decision is not made. Or, if these decisions are made, they are done in the same pace as they are done in other **rival** countries. Then, it doesn't matter if the industries are burdened with payments, if the situation is the same everywhere. Then,*

the consumers is the one who pays the bill. (MP)

18. "...to us politicians, it is said that Finland and its industries will lose its ability to compete. Then, we will not have income from export; these are scary questions. Therefore, politicians cannot disregard what they (the industries) say. And this is scary. I think that in expert hearings and in the committee of the economy, the only view that is stressed is the view of the economy and export. The view on where the world is going to is missing; this would create different types of comments." (MP)

When considering that Finland is obliged by the EU (2009/28/EC) to increase the amount of renewable motor vehicle fuels, and that there are energy companies and other large industries in Finland which dominate as an elite according to the interviews, it became interesting to investigate what fuel could become dominant. This could show what companies are important when considering biofuels. This can also give an answer if biogas is a matter of interest to the government or large industries. Electricity was left out because it would have required more research; but, there are indications that nuclear power has a role when considering Finnish energy policy. Therefore, we will now review what companies could be significant when considering the GDP of Finland.

When researching what fuel could be dominant in the future the indication of power, "What organization receives the most of what people seek for and value?" was used. According to the previous quotes 17 and 18, it seems that fiscal policy is the most important area of policy. So, what are the most wealthy companies who deal in liquid biofuels and/or have the government as shareholder? The role of the company is even stronger if the government is a majority shareholder; but, companies who do not have the government as a shareholder have also been included because it seems that when reviewing biogas the main question is who is producing liquid biofuels? Companies that deal in liquid biofuels and in which the government has at least 50% ownership of the shares are: Vapo Ltd. (50%) and Neste Oil Ltd. (50,1%). Companies where the amount of owned shares by the government is under 50% and in which there is also interests in liquid biofuel production are: Stora Enso Ltd (shares owned by the government: 12,3%) and Metso (shares owned by the government: 10,4%). There is only one company dealing in

methane based fuels in which the government owns shares: Gasum Ltd. (shares owned by the government: 24%). (Prime minister's office 2011.) This could imply that these companies have a strategic relationship to the GDP of Finland. The strategic relationship of especially Neste Ltd. seems relevant because the government owns a majority of its stock. Gasum was left out of the elite because, despite the fact that the government owns shares of it, its area of business in motor vehicle fuels is still marginal compared to liquid biofuels.

The top ten companies in Finland, according to their exports in 2010, were: UPM-Kymmene Ltd., Stora Enso Ltd., Wärtsilä Ltd., Outokumpu Ltd., Metsäliitto, Metso Ltd., ABB Ltd., Rautaruukki Ltd., and Rolls-Royce Ltd. (Talouselämä 2011a). In 2009 the biggest exporters were: Nokia Ltd., Wärtsilä Ltd., Stora Enso Ltd., Metsäliitto, ABB Ltd., Metso Ltd., Outokumpu Ltd., Finnair Ltd. and Rautaruukki Ltd. (Lähtenmäki 2010). The largest companies according to net revenue in 2010 were: Nokia Ltd., Neste Oil Ltd., Stora Enso Ltd., SOK, UPM-Kymmene Ltd., Kesko Ltd., Sampo Ltd., Fortum Ltd., OP-Pohjola Group and Metso Ltd. (Talouselämä 2011b). It was stated in quote 18 that the export industries are very important when making decisions on energy policy. So, knowing what are the largest export industries, and industries with the largest net revenue is important. Some of the largest exporting companies in Finland have interests related to liquid biofuels. Metsäliitto as well as Vapo have a joint venture in biodiesel (Forest Btl 2011). In addition, Metso, Fortum, UPM Kymmene, and the VTT have a joint project in bio-oil (Upm-kymmene 2009). The VTT Group is a non-profit research institution which falls under the domain of the Ministry of Employment and the Economy. This could be seen as an indication that the Ministry of Employment and the Economy also has interests in liquid biofuels. UPM-kymmene Ltd. has traditionally been working in paper production, but has interests in renewable energy, especially bio-oil and bioenergy based power plants. UPM Kymmene also states that they are planning to become a major producer of biodiesel. Their biodiesel is called BTL-biodiesel (UPM Kymmene 2010). Metso, UPM, Fortum and VTT have jointly started a project in domestic bio oil (UPM 2009). There seems to be a connection between these four according to their cooperation in this project. Metso and Wärtsilä started a joint project in 2008 in the production of medium- and small-scale power

and heating plants, focusing on renewable fuel solutions (Vaartimo 2008). The interests of these two companies are mainly limited to supplying power and heating plants for the use of all forms of bioenergy.

Neste Oil Ltd. has also major interests in biodiesel and many production facilities producing biodiesel. Their biodiesel is called NexBTL. (Neste Oil Ltd. 2010.) Matti Lievonen (2011) who is the CEO of Neste Oil Ltd. states that the company's main interest is still fossil fuels because legislation on biofuels is not sufficient. The legislation is not in the spirit of the free market. But, it was also said that the price of oil is getting high which might have an effect on the demand of oil in the future. (Lievonen 2011.) Altia Ltd. had interests to produce bioethanol in the past, but did not start production because the price of barley can change and make production too expensive. Also, the investment costs were said to be too expensive. (West Finland Regional Environmental Center 2006, Ilkka 2009.) According to this background information, it appears to be that interest in liquid biofuels are strong in many big companies in Finland. There are not enough large companies who deal in biogas to make it significant.

When reviewing the situation of biogas, it does not seem to be the dominant fuel in the future. A person representing the natural gas and biogas industry said, in quote 19, that, realistically, they are not trying to get a big share of the market. So, this further implies that another fuel other than biogas will be dominant in the future. This conclusion was reinforced in quote 20 by a statement from a parliament member when asking what the future of biogas seems to be.

19. "Realistically, we are not trying to get a big share of the market; but, we will bring an addition to the market." (Business Representative)

20. "Well, overall it seems quite fine; but, we need to get the feed-in tariff first. It will help in the long run. And when considering matters in the long run, all biogas will have to be put to use. The obligations on emissions and renewable energy will increase so much that it cannot be fulfilled if all energy sources are not used. But, when looking at the situation of motor vehicle fuels things do not seem very good. We do not have many natural

gas filling stations or filling stations of biogas. And, it does not seem that there are decisions that will change the situation in the near future. (MP)

To summarize, liquid biofuels are produced by large companies, and some of these companies have the state of Finland as a shareholder. It seems that the large companies have significance when considering the GDP of Finland which further strengthens their role. Large companies and industries in Finland are also specially considered when decisions are made because of their significance for the GDP of Finland. This gives large companies a very strong elite role. But at the end, everything boils down to money which makes the claim of the climate change economy relevant. Money is what dictates policy, but since there is the EU and the directives of the EU, economic actors must fit their business interests into the framework of the climate change economy and make their profit within the guidelines of the market economy and the EU. This also applies to governments because they are in competition with other governments.

7.4.2 The Unifed Political and Economic Elite

Next, the unity of the political and economic elite is reviewed. This is related to Mills' (2000) claim that the political and economic elites need each other. Why the situation is like this is because of intertwined relationships and common interests of the elite and because money talks. The indicator of power, "Who is thought to be powerful by knowledgeable observers and peers?" was used. This matter was researched only by using the interviews because official documents do not show what is going on behind the scenes (Domhoff 1968, 251- 278).

Mills states that the economic, military and political elite are in close contact with each other (Mills 2000, 1-30). Mills (Mills 2000, 7) continues later on saying that the economic elite is dominated by a few big corporations. The role of big companies seems important when it comes to biofuels. This was also shown in Section 7.4.1 *supra*, "Money and Liquid Biofuels". In quote 21 it can be seen that actors in political life speak of the energy elite when asking about powerful actors in energy policy. It seems that there has been a strong

political elite in energy policy before and it still prevails. Also, decisions are made behind the scenes which undermines democracy. The lack of transparency can be seen in quotes 21 and 22 which states that decisions can change after the viewpoint of the industries is consulted.

21. *“...the power of the energy elite has become stronger. Its power started to increase at the end of the 1990s. At the end of the 1990s, it got hit when the vote on nuclear energy did not go as they planned in 1993. After that, it stayed in power at the end of the 1990s, they have increased their level of influence; they have made their own strategies; they got their fifth nuclear power plant by lobbying.” (MP)*

22. *“But when actors behind the scene are asked, what the industry thinks, and they say that it's not profitable, different decisions are made...” (MP)*

In quotes 23 and 24, the interviewees were asked what is their opinion when it comes to how political decisions are made. It seems according to the interviews that the large industries and the Ministry of Employment and the Economy are part of the inner core. The people who were interviewed in these two quotes were both members of parliament. The political and economic elite are unified and have a common goal which makes them strong. The indication of a common goal can be seen in quote 24. It is stated that the bureaucrats of the Ministry of Employment and the Economy are on the side of the large industries. It also seems that the energy industries and the energy intense industries have good connections when it comes to affecting decision making. They are in contact with the three most powerful Ministers. The three ministers in quote 15 are the Prime minister, the Minister of Employment and the Economy and the Minister of Finance. This makes policy making in Finland seem less transparent and run more by inside actors.

23. *The bureaucrats of the ministries have power of influence, and in the case of the Ministry of Employment and the Economy, its view has always been the view of the large industries. (MP)*

24. *“The experts of the industries express their views and wishes to these three ministers.*

Then, we have to tackle in the field set by the wishes of the industries, what is possible and the requirements of the EU.” (MP)

It can be seen in quotes 25 and 26 that Mills' (2000, 347-348) claim that one can trace a persons career and see a history of loyalties to other strong actors seems to be accurate. This means that everyone in powerful positions have memberships to cliques, in addition to personal qualities and expertise. Further, Mills (2000, 15) states that a certain type of person is chosen and shaped within these social cliques to enable the power of the elite. Quote 25 below shows that to be in power, one must be similar, and there seems to be significance when considering the issue of cliques (Mills 2000, 347-348). The members of parliament realize that the people who are their benefactors are in favor of “traditional energy”; therefore, others must be in favor of it too. This could also be related to Mills' claim that decisions are not a matter of intellectual decision making and debate (Mills 2000, 353-355). By this, he stresses the meaning of public relations and lobbying (Mills 2000, 353-355). To make this clearer, Mills (2000) means debate in the sense of academic debate. He (2000) means that decisions should be debated the same way academicians must defend their claims. (Mills2000, 18, 353-355, 347-348.) Mills’s claim seems relevant because if decisions would be debated the same way academicians defend their claims, it could supersede a strong elite because it would be the facts that matter. Social cliques, similarity between elite members and, for example, institution size would not matter so much. This would also require that funding for research would not be limited to certain people.

25. ”...there are probably many reasons, but when studying the composition of the Parliament, it is dominated by men and with good incomes. Men with good incomes are in favor of conservative energy policy where everything is based on constant growth and building more energy production facilities. Secondly, the Parliament members identify themselves with this political elite project, and feel that networks and benefactors who are close to them are in favor of traditional energy policy, and this is why Parliament members feel they should think this way too. ” (MP)

26. “...the elite interacts with the elite and adopts its manners, beliefs and goals. If a

Parliament members hangs around with business leaders and leaders from the trade unions, the parliament member will start to identify with their goals.” (MP)

According to quote 27, one reason why sustainable energy policy is so difficult is because the structure of the parliament is dominated by well-paid males. This is an interesting comment because this is exactly how Mills (2000, 248) described the situation to be. Mills (2000, 248) wrote that the senators and representatives were people who had succeeded in entrepreneurial and/or professional life. “Older men of privileged white, native born of native parents, Protestant American.” (Mills 2000, 248.) In quote 26 it was said in more detail that if parliament members communicate and work with business leaders most of the time, they easily start thinking the same way as the business leaders. Quotes 25 and 26 emphasize similarity social of social status and background which was stated by Mills (2000, 248). There are intertwined relations and shared interests according to the interviews. The best way to become a winner is being a member of the winners. When considering that we are examining two separate countries and the similarities are at this level, it seems that the nature of politics is cross cultural. Therefore, Mills' theory seems to be very useful even when researching the situation in countries other than the United States of America.

27. ”...the political and economic elite are very interconnected. The industries and the trade unions have unanimously together, with the political and media elite, advocated a policy which can be seen in this nuclear energy centered energy policy and neglecting alternatives. And this consensus of elites has made sustainable energy policy very difficult.” (MP)

What is the result of this strong political and economic elite? According to quote 29, it seems that Finland is in a transition phase where the future of the old industries is becoming more uncertain. This could be a reason why biofuels seem to be considered as an area of commerce in the future by these companies. Metsäliitto, Vapo Ltd., Metso Ltd., Fortum Ltd., UPM Kymmene Ltd., research institution VTT Group, Wärtsilä Ltd. and Neste Oil Ltd all have interests in liquid biofuels (Forest Btl 2011, UPM Kymmene 2010, Kymmene 2009, Vaartimo 2008, Neste Oil 2010). According to quote 28, the goal of

policies is to keep, for example, the paper industry in Finland. This seems to increase the level of influence of the paper companies. But, is this sensible when considering the future? The interviewee in quote 28 was speculative about the fact that the paper industries will stay in Finland even if they get the energy they need inexpensively enough. Also, the interviewee in quote 29 said that supporting these old industries is a disservice to society because their lifespan is going down. It was also stated in quote 28 that the energy industry is dominant when it comes to public relations.

28. "It seems that the energy intense industries are dominant when it comes to the media. It cannot be offended, so it will not start going down hill again and jeopardize its ability to compete...Now it is said that even cheaper energy needs to be provided for them, so that the paper companies will stay here but they won't stay with that. The price of energy is a marginal expense to them" (MP₂)

29. "We have created industries and kept for example, the forest and metal industry in Finland with cheap energy. But, I think that we are not aware of the change that is coming, these industries whose lifespan is going down. If we keep on supporting them the way we have done, and do not let new actors into the market; those who have more innovative ideas, who could open the way to the global market, we are making a great disservice to this society." (MP)

According to the presented information social cliques, a common goal and a similarity among elite members are important. According to the interviews, it appears to be that Finnish energy policy is concentrating on centralized energy production, because to gain political power, it is better to be in connection with the industrial economic elite and vice versa. It was also stated that white males are more in favor of conservative energy policies. Other parliament members identify themselves with the visibly strong and unified elite that consists of, according to the interviews, of the trade union movement, the Finnish industries, the media and the political elite. It is a self-strengthening circle. The trade unions have not been included in the final elite structure because it was mentioned by only one person. The trade unions are not mentioned by the Ruostetsaari (2010) either; so, this group could be a new elite group. This once again makes Mills' (2000, 9-16, 18) statements

very relevant when considering that the elite consists of people from the same social cliques, and who are all similar and have a similar social background.

It also seems that now is the time for new trends on energy production to surface. It seems that this period of time is very important when considering the future of energy production in Finland and other profitable industries. Therefore, it seems that giving the old industries in Finland an advantage when policy is designed is short sighted policy.

This can be found in Mills' analysis, too. He states that if the unified elite is irresponsible when making decisions and if the access to power is limited, the consequences of these decisions is massive. In this sense, a strong elite in policy making is very harmful. (Mills 2000, 18-27.)

7.4.3 Institution Size and Expertise

To answer the research question “Why do the power elites exist?” this chapter explains how institutions and expertise bring power to an actor in society. Mills's (2000, 9-14) idea on institutional power was used in this section. Mills states that power is in the institution because institutions have the power of size, expertise, and continuity. He also states that the one who commands the institution has the highest authority (Mills 2000, 9-10). The chapter is based on the indicators of power “Who is thought to be powerful by knowledgeable observers and peers?” and “What organization wins in the arena of decision?” These questions were researched by reviewing the interviews.

According to the interviews, the Ministry of Employment and Economy is said to be an important actor in addition to the companies that work in the field of energy and the Ministry of Finance. According to the interviews, the businesses have the freedom to work in the market environment when the government must consider many other goals and responsibilities such as education and healthcare, i.e., taking care of its citizens. According to quote 31, Mauri Pekkarinen, who was the Minister of the Ministry of Employment and the Economy in the years 2007-2011, was said to be an active and powerful minister who defined very much what bureaucrats were doing. Although, when reviewing the data, it seems that the large companies in Finland have a very powerful role. (Quote 30).

30. *"In the ministries the most important decisions are made by the Ministry of Employment and the Economy because energy political decision making is its responsibility but....in practice the biggest actors are the companies because they work in the market within the boundaries of regulation..." (Minister)*

31. *"The Minister of Employment and Energy is salient when it comes to preparation. Things are done in the Ministry of Employment and the Economy and the current minister (Mauri Pekkarinen) has been active in energy policy and influences what political bureaucrats do." (MP)*

All the interviewees except one agreed that the Ministry of Employment and the Economy is very important. The one who did not totally agree on this was a Minister who said the Ministry and Minister of Employment and the Economy has very much influence and is important; but the greatest influence is that of the large energy companies. (Quote 30).

The role of the Ministry of Finance is related to institutional power as Mills (2000, 9-10) stated. According to quote 32, the Ministry of Finance has a major role when it comes to biogas, as it has the power of ending the use of methane based fuels because of its institutional position. The Ministry of Finance has the power to make something unprofitable which shows how much power the Ministry of Finance has when biofuels are considered. According to the interviews, zero taxing has been one factor that has given hope to actors in the field that methane could someday become more common. Methane is still a tax free fuel (TraFi 2011). Since methane is still in such an early stage, taxing it the same way as other motor vehicle fuels could, according to interviewees, be the end of methane as a motor vehicle fuel.

32. *"What type of tax is set on natural gas? Will biogas have a tax? It seems that if natural gas's ability to compete is killed by taxation, the natural gas distribution network will not expand, and the basis for biomethane as a motor vehicle fuel will not develop." (Business Representative₁)*

The role of being one of the major political institutions in Finland, when considering matters that have a financial dimension, places the Ministry of Finance into the inner core.

When reviewing the situation of political bureaucrats, the influence of political bureaucrats was said to be strong in the interviews. The indicator of power used was “Who is thought to be powerful by knowledgeable observers and peers?” and was researched by reviewing the interviews. The power of the bureaucrats seems to be based on the following matters. First, they are members a major institution, and second, they have the most expertise. Institutions and expertise were mentioned by Mills (2000, e.g. 10-11, 13). Mills calls these types of bureaucrats “political bureaucrats” (Mills, 2000, 228). The party politician spends his career in a specific political organization; but, the political bureaucrat rises over the civil-service routines to a policy making level. The individual is not powerful by himself, but through the institution he/she belongs to (Mills, 2000).

There is one major problem here when using Mills' theory in Finland's case. In the United States, the political bureaucrats change after the elections, and the key bureaucrats are chosen by the president. (Mills 2000, 240-241, 228-229.) In Finland, there are the same bureaucrats despite who is the president (Finnish law 19.8.1994/750). So, in this sense, this analysis is not totally coherent with Mills' theory. It seems that this could make the power of the political bureaucrats in Finland stronger than in the United States. This seems to be a very fundamental difference in decision power between Finland and the United States, according to the researchers' thoughts, Mills' theory and the research data. This is why Mills states that the United States is not a true bureaucracy because the bureaucrat's first objective is to work for the policies that are chosen to be reinforced (Mills 2000, 235-238). Whereas in the United States, the bureaucrats change after every election and according to Mills (2000, 235-238) are more faithful to people who chose him/her for their jobs than the policies. From this point of view, Finland seems to be a true bureaucracy in the sense Mills (2000, 235-238) meant. So, the bureaucrats should be, according to this theory, faithful to the policies they are set to fulfill by giving counsel and preparing proposals. According to the interviews, it seems that Mills' idea of how a true bureaucracy should be is not true in Finland. Political bureaucrats are said to lead Finnish policy, not serve Finnish policy.

According to the research data, it seems that the amount of information is so massive that, for example, Ministers rely on the political bureaucrats.

It is stated in the interviews by some, that the bureaucrats are true leaders of policy quote 33. It was stated that one indication of this is that politics are the same from year to year even if the parties in the Cabinet change (Quote 33). This depends on how experienced the top ministers are; the less experience they have, the more the political bureaucrats take over the power vacuum that the inexperienced minister causes (Quote 33). It was also stated that the amount of information ministers and parliament members have to try to cope with is so massive that they let the political bureaucrats take care of things because handling all the information is impossible (Quote 34).

33 . “It does not matter who is in the Cabinet, politics is always the same. This is because in reality the parliament members do not have that much power, it's the political bureaucrats who have a lot of power. The more inexperienced the minister is the more he/she lets the political bureaucrats decide on issues....I would say that this would be the opinion of many parliament members.” (MP)

34. ”...the amount of information is so massive that they rely on political bureaucrats.” (MP)

There was one opinion where it was stated that political bureaucrats in Finland cancel decisions made by the parliament. This is something that would require extra research because this seems to affect very much the transparency of decision making. The claim was not researched in more detail because it could have been a separate research topic. This is merely stated as an suggestion how things could be. (Quote 35.) In quote 36, it is stated that political bureaucrats educate political leaders. When reviewing quote 36, it is seen that this is one interpretation of how things could be. If there really is a massive amount of information and matters to be decided on, it could be that political bureaucrats educate political leaders because it seems that it is impossible for a political leader to be an expert on every matter that comes up.

35. *“In this matter of motor vehicle fuel, many initiatives have been made (by the parliament) and most of them have been declined, and the parliament itself has declined very few of them. They have been declined by the political bureaucrats. This is the true power of political bureaucrats over parliament members and minister;; this is a very strange feature in this system.” (Expert and Activist)*

36. *“It (energy policy) is dominated by bureaucrats when it is compared to, for example, Sweden. The power of the bureaucrats supersedes the power of the politicians. The key ministers are always of like mind with the bureaucrats. The political bureaucrats educate the politicians to support their policies, bureaucrat policy.” (Expert and Activist)*

The following statement is interesting when viewed in the light of the two aforementioned quotes. A member of parliament stated that the quality of decision making is better if it is done by the Ministry of Employment and the Economy, i.e., bureaucrats of this ministry. Therefore, the role of knowledge and expertise is emphasized which could be one reason why bureaucrats have power. Maybe the reason policy is said to be run by bureaucrats is because politicians rely on the expertise of the bureaucrats. The statement also shows great distrust towards the Finnish Parliament which is interesting. (quote 37)

37. *“If you compare decisions made by the parliament, and the decisions that are made by the Ministry of Employment and the Economy, I am more confident in the decisions that are made by the Ministry of Employment and the Economy, than what happens to come out when the parliament makes decisions.” (MP)*

To summarize, it seems that the role of the political bureaucrats is very strong, and some rely on the quality of the decisions made by political bureaucrats, and see that their role should be strong to ensure the quality of decisions. When reviewed through the theory of Mills, the political bureaucrats' power seems to be based on the institution they belong to, their expertise, and the position they have within the institution. Mills wrote about institutional power (2000, 9-11). Without the institution of the ministry, these people would have no power. Their role is also strong because of the amount of information that people

on top levels of decision-making have to handle.

In addition, the role of the two leading ministers in the matters of energy policy also seems salient. The Minister of Finance has responsibility over fiscal policy; and, the Ministry of Employment and the Economy has responsibility over energy matters. This is not how things are when reviewing the role of the Ministry of Employment and the Economy. The Ministry of Employment and the Economy seems to be more interested in designing policy that is in line with the hopes and wishes of the large industries in Finland. Energy policy itself does not seem to be the main interest of this ministry.

7.5 Why Are Some Members of the Outer Core?

This section answers the research question concerning what makes some actors parts of the outer core. The questions used to review this part are “Who is thought to be powerful by knowledgeable observers and peers?”, “What organization wins in the arena of decision?” and “What organization receives the most of what people seek for and value?” It has already been stated that large companies have a great deal of power when it comes to energy policy, and they are the ones with the most financial wealth. Therefore, it seems that the more profits that can be made, the more powerful is the actor. Large scale production is believed to bring cost efficiency. One could conclude from this that climate policy is a tool for making profits when reviewing the situation with biofuels which was presented earlier. This again implies the existence of a climate change economy. When reviewing the situation of companies and projects which are related to biogas, it seems that everything is still in a project phase, or the production is small scale or smaller than what the large companies can offer. So right now, it seems that the dominant actors are the actors in liquid biofuels because their projects are large scale which gives them a head start when compared to biogas. According to the interviews, the lobbying done by people in small projects lack credibility when compared to massive lobbying done by large companies. The chapter on the unified elite in Finnish energy policy is also relevant when reviewing what reduces the power of influence of the outer core. The existence of a strong elite structure

undermines transparency and limits the power of other actors. The chapter on the unified elite in energy policy should be therefore considered when reviewing the characteristics of the outer core.

In addition, the condition representative democracy is in gives the unified elite power. It is difficult to say if the elite has undermined the power of influence of representative democracy, or if the state of representative democracy has been low before the elite came in power, and this led to the existence of a strong elite. This cannot be answered in this thesis. It would require more research.

The following chapters are short because what makes some actors members of the outer core is related to why others are members of the inner core. So, some of the information has already been presented in the previous chapters thus making the following chapters short.

7.5.1 The Weak State of Representative Democracy

The weak state of representative democracy is a key prerequisite when considering how the elite maintains their power, and is also a feature of the outer core. The weak state of representative democracy gives other actors power and places those actors in the elite. This analytical conclusion is supported by Ruostetsaari (2010, 150) who says that the EU is the reason for the impotent role of the parliament. Because of centralized political decision making, political guidelines in energy policy are prepared by the cabinet of Finland and the EU (Ruostetsaari 2010, 150). This of course includes the assumption that there are, for example, many members of parliament who are in favor of biogas as a motor vehicle fuel, but their power is undermined. This assumption cannot be proven in this thesis. So, it cannot be proven without doubt if the reason for the marginal use of biogas is really because of the small role of democracy; but, there are strong indications that the parliament's role is small according to the interviews. When reviewing what was said earlier, that there is a unified elite among members of parliament, it seems that the situation

which prevails is a sum of many issues: the small role of representative democracy and the elite within the parliament. Does that unified elite exist because of the small role democracy, or has the existence of the elite lead to the diminishing role of the parliament? Or is it as Ruostetsaari (2010, 150) states, that the EU has made decision making more centralized and this has made the role of parliament smaller? When reviewing the quotes that will be presented, proposals presented by single members of parliament are not taken seriously, even if the proposal has the support of the majority of the parliament. This is a very worrisome feature of Finnish decision making, and makes it seem that the parliament truly lacks power. It cannot be explained simply by the strong role of the EU. The parliament is overlooked by national actors who have power of influence. The EU has significance in the context in which the climate change exists; but, it does not fully explain why national actors overlook other national actors.

When reviewing the situation of the Parliament, their potential power is in the institutions (Mills 2000, e.g. 9-11). The institution is representative democracy. The parliament members have power in unity, i.e., in the institution and because of the power that law gives them as decision makers (Mills 2000, e.g. 9-11, Finnish law 94/1919). The single member of parliament has very little power. Their role in preparation work is also affected by manipulating the preparation process by overlooking proposals made by members of parliament. The effect of the aforementioned problems can be defused by expertise, persistence and experience. Over all, the role of the parliament is very small when it comes to preparation of policies related to energy. These matters seems to strengthen the power of influence of the unified elite in Finland which was presented earlier. It was stated in quotes 38 and 39 that the proposals which are from the Cabinet, ministry, or from a minister are the ones that have the possibility to be approved. This seems to undermine democracy and transparency because this leads to decisions being made by someone other than the Parliament, and decision making is prepared behind seemingly closed doors. The Parliament has, of course, the final say on matters; but, it seems that the elite within the Parliament ensures that policies stay the same from year to year, unless there is a strong outside pressure from, for example, an actor like the EU.

38. *"I got over 200 signatures on it (a proposed bill) so that it had to be taken before the committee. It was discussed very superficially. It seems that the proposals by the cabinet are those that are discussed in the parliament. Therefore affecting legislation is very difficult unless the proposal comes from the ministry. It is easy to add something to a proposed law, especially if one is a member of the parties in the cabinet. But when it comes to totally new proposals, one has to wait until the next government platform or get the support of the ministry of the Minister in question."* (MP)

39. *"Well, in practice it is small with the exception of a few things. Bigger matters are the decision on nuclear power, the Parliament had power in that. But overall, in energy policy it is the Cabinet that decides."* (MP)

There is a clear lack of transparency in decision making which should be dealt with. This leads to certain people having too much power and making the consequences of decisions massive if something goes wrong (Mills 2000, 7-9). In addition, this situation keeps all new actors and proposals out unless they are very persistent. A strong elite structure seems to result in a lack of innovative policies because there is a certain line of policy that prevails when supported by the elite. Nevertheless, the role of persistence and perseverance, when introducing new proposals, can be seen in the following quote where it is stated that some policies have been made by single members of parliament.

40. *"Goals have been reached with perseverant and determined work..Biogas powered motor vehicles were freed of the fuel fee which required six years of work and the making of two laws. On the second time, the signatures of over 150 members of parliament were needed."* (MP)

The situation and problems related to the Finnish parliament are given in quote 41 where it is stated that Finnish politicians are too faithful to the politics and the authorities who create the political guidelines. It seems that the parliament could have great power if there would be a strong unified will and less commitment to the policies set for the four year

period (Quotes 41 and 42). The reason why members of parliament do not have power could be an indication of Mills' (2000) thought that the political and economic elite are unified and have a common goal. Only people who support the ideas of the elite have power.

41. *“The parliament here is too committed to the four year period and its politics.” (MP)*

42. *“Representatives of the parliament want to increase the amount of renewable energy, but the will to make concrete decisions seems to be too small. Someday, but not now.” (MP)*

The significance of institutional factors can be seen quote 41 and 42 when reviewed through the theory (Mills 2000, e.g. 10-11). Unity gives the Parliament the advantage of institutional power. There is not a unified will to support biofuels like biogas which seems to be not in the interest of the large industries according to the quotes presented so far. Therefore, in a nutshell, it seems that the parliament is too faithful to political guidelines which could be policies favoring large industries when considering the strong connection between the salient political leaders and the industries and the unified elite within the Parliament. This of course partly cancels the result of the parliament not having a unified will. Maybe the parliament is not in favor of renewable energy. In this case they have a unified will, but are in favor of the traditional industries in Finland. But then again, there is quote 42 in which it is stated that there is a will to increase the amount of renewable energy within the parliament. So, the statement of a lack of a unified will and a strong belief in authorities could be valid.

To make a difference, the actor must be perseverant. Thus, it seems that even in a system where representative democracy does not have that much meaning, members of parliament can be powerful, but that requires a lot of work. The majority of the interviewed people said that the parliament does not have that much power; therefore, it seems that the overall role the parliament's is not strong when political guidelines are being prepared. This is due to the lack of the unified will and how the actors in the preparation process overlook

proposals made by single members of parliament. There are exceptions (Quote 40); but, the reason why some members of parliament have power and some do not is not totally clear. To figure out why some members of parliament have power and some not would have required once again a totally separate research project.

7.5.2 Limited Access to Information and Biased Information

The indicator of power structure research: “Who is thought to be powerful by knowledgeable observers and peers?” was used in this chapter. Mills emphasizes that social cliques, personal qualities, and institutions are key features when defining the elite. He also says that the elite has the most of what there is to have. (Mills 2000, 9) When reviewing the situation of SME’s, the following results were obtained. According to quotes 43 and 44, businesses can sometimes affect decisions if they are invited to the hearings when a matter is being discussed. If they are not invited, they do not always get information on what the current situation is. This has an effect on new projects because predicting how profitable an investment will be becomes difficult. Therefore, as it was stated during the interviews, that perseverance is needed for decision making, so businesses can make long-term plans. Also, the issue of transparency is visible in quote 43, when considering who is invited to the hearings when new proposals are made by the government.

43. “There is a lot of decision making where there are discussions and it is prepared by a committee, there are then possibilities to have power of influence. But one must remember that not all are invited to these meetings, only certain groups. And those who are invited are more influential than those who were not at the meeting.” (Business Representative)

44. “...the energy tax was a surprise to all actors, what happened there. There came no information beforehand making possibilities to affect decision making zero. So, we just have to live with the fact that the business environment can suddenly change....perseverance is what is needed for decision making.” (Business Representative)

When reviewing what was said during the interviews, it seems that increased transparency

could make starting new projects easier because companies would have more information on what the current situation is. Increased transparency would be achieved by making decision making more open to small and medium size actors. This conclusion gives rise to a question as to who decides on which actors will be the participants in the working groups? The ministry who is responsible for the matter in question is the one who makes the decision, according to quote 45. In this matter, the ministry or minister in question is the Ministry and Minister of Employment and the Economy. This makes the role of the ministers and ministries even more salient. And, when considering that some said that the large industries have a straight connection to these ministers and ministries, the role of the large companies and ministries seem to have the position to define the content of energy policy. The following statement was an answer to a question: “Who decides who is invited to hearings?”.

45. “The leader of the ministry, the minister. It is the minister, and of course, it is so that there are so many things going on that he/she (the minister) can't concentrate on everything. The political bureaucrats have very much power, and in this case it is the Ministry of Employment and the Economy, and its view has always been the view of the large industries. And, then when considering what there is at stake, even if one does not consider them as bought people, but the view that they think it (taking sides with the large industries) is best when considering the future of Finland. That the export industry will be profitable in the future also.” (MP)

When reviewing the issue of information, members of parliament who lack experience in politics do not seem to have that much power. They do not always understand the nature of politics and information. This is where we can see the power of the experts as Mills (2000, 353) stated. Mills wrote that the experts were consultants, representatives of companies etc. Mills (2000, 344 – 355, 248) wrote that decisions are not debated which would give them justification. According to Mills (2000, 248), the reason that decisions were not debated is because too many bills were being prepared at the same session. Because of this there was no time to even read the proposals. (Mills, 2000, 248.) Mills (2000, 355) states that manipulation and uncontested information are what prevailed in the days of Mills. In quotes 46 and 47, the situation in the Finnish Parliament seems to be similar. It seems that

the Parliament members are being bombarded by contradicting information from different actors which makes it very challenging to know what information is reliable. Objective information was something that was requested in one interview.

46. "When an expert is asked to give information, some are so naive that, of course, this is objective information. It is clear that if you are an expert from the bank of Sampo or Nordea or Osuuspankki you will tell what is best for the company you represent. It is the same in energy policy." (MP)

47. "It could be good if foreign experts would be used. If bringing them here would be wasting money, then we could ask for statements from them. What have been for example in Sweden the pros and cons in building the biomethane network?" (MP)

In a nutshell, according to the interviews, decision making was requested to be more transparent and to get more information of what is going on when decisions are being made or prepared. This would help SMEs when planning future financial investments. It seems that to increase transparency, objective information should be provided to the members of parliament or parliament members should be more aware of the nature of information. It seems that being a politician is like any other type of job; experience is important. But, the issue of objective information is also relevant. Objective and reliable information should be available. Biased information and limited access to information makes an actor a member of the outer core. The one who defined the nature of information controls the access to having great influence.

7.5.3 Institution Size

The lack of resources and a small institution size were also seen as limiting factors. This is also how Mills saw the situation to be (Mills 2000, e.g. 9-15) Bigger actors in the field, for example, Neste Oil Ltd. and Fortum Ltd., were seen to be powerful because they have a vast organization behind them, and they have resources to hire people to speak for them, do research, produce high quality brochures, etc. In other words, the Neste Oil Ltd. and Fortum Ltd have more resources for lobbying. Conversely, the same features are

significant when reviewing the situation of smaller actors. In quote 48, it was asked what type of information Parliament members get to make decisions. The member of parliament who was interviewed said that information and lobbying are very much dominated by large companies which can produce research which seems to be more credible than information produced by, for example, NGOs.

48. "It (information) is very much dominated by information coming from them who have money and power of influence. Every Fortum type of actor has people who specialize in lobbying. They make nice looking brochures, good arguments and then again NGOs work during their free time....So their (NGOs') resources to present information are so small that it easily seems when compared to Neste Oil, when Neste Oil is speaking of their biodiesel, that has been produced in the rainforests, that the other has tons of research and the other has used X hours of their free time."(MP)

Mills (2000) did not really discuss the case of small and medium sized businesses (SMEs). He did mention that having a company can lead to wealth, and this can lead to an influential position (Mills 2000). To define the position of SME's, Mills's (2000, e.g. 9-10, 18, 15) idea that the elite has the most of everything, is in close contact with the other elite members, and has vast and strong institution behind them was used.

When asking businesses about their possibilities to affect decision making and how the environment they work in affects their business interests, the views were very much the same. It was stated that long term planning is needed to make sensible decisions in businesses. In quote 49, a business representative said that it is hard to plan things if decisions, for example, on taxing change constantly. According to the interviews, a company's task is to produce profits for the shareholders; therefore, long term planning and sensible decisions are needed because profit is what dictates the future of a company. The role of political decision making was emphasized during the interviews in the case of biogas because the number of motor vehicles that run by methane is still very small, increasing the repayment period of an investment. Therefore, according to the interviews, policies regarding subsidies or tax reliefs are needed to increase the amount of gas powered vehicles so as to reduce the repayment period of biogas projects. When reviewing the

information from the interviews, overall it seems that the environment for SMEs to work in is challenging.

49. “Of course, one has to remember that in the beginning, the amount of vehicles are very low. Sales from the filling stations (natural gas) are very moderate making the repayment period very long. And from this point of view, perseverance is required from decision making. We would then know what are the chances for crating a business so that different actors would be less afraid to take part in these biogas investments.” (Business Representative)

When reviewing the issue of SMEs, it seems that to promote the use and production of alternative energy sources, long term planning from political decision makers is needed. It seems, according to previous information, that for a company's interest to be considered when making long-term political decisions, it seems that the company would have to be a large company making it significant when considering, for example, the fiscal policy of Finland. This conclusion is based on everything presented so far. But, when considering that there is the feed-in tariff for biogas, it seems that everything is not decided according to the interests of the large industries. However, when reviewing the interviews that have been presented in the form of quotes, it seems that the will of the large industries dominate making institution size and the unified elite the best possible answers to the question.

To summarize on the issue of NGOs, it seems, according to the interviews, that smaller actors, for example NGOs, are checkmated by other strong actors in the field. The current field is dominated by actors representing the “old and traditional” energy industries and the NGOs are the ones bringing in new information on innovative energy production. NGOs have limited resources which could be interpreted as an indication of not being a powerful institution. It once again seems that to make a difference in policy one must have a vast institution behind them as Mills stated (Mills 2000, e.g. 9-15). The field of information is dominated by wealthy and powerful actors who have the advantage of a large company creating a large and important institution.

7.6 Unclear Elite Position – Cities and Towns of Finland

When studying the question of the role of towns and cities, it is not possible to state why they have not been more active when considering biogas as a motor vehicle fuel. This would have required a separate research limited to interviewing decision makers of towns and cities. The only thing that can be said is that towns and cities have the potential to be powerful; but, they haven't been active when it comes to biogas as a motor vehicle fuel (Quote 50 and 51). Mills's (2000, 9-14) idea on institutional power was used in this chapter. Also, the indicator of power structure research "What organization wins in the arena of decision?" and "Who is thought to be powerful by knowledgeable observers and peers?" Cities and towns have the right to make their own decisions according to law and the interviews (Finnish law 17.3.1995/365). According to the interviews, the cities and towns were also mentioned as being powerful.

50. "Therefore, there is nothing in the way to do what tens of towns in Sweden have done; the state and the provinces do not need to do anything. Towns and cities, they can do everything. In principle it's easy, but in practice difficult." (Expert and Activist)

According to quotes 50 and 51, towns and cities in Finland have all the potential power to use biogas as a motor vehicle fuel and produce the needed biogas. According to the interviews, towns and cities could be omnipotent in making decisions on how waste management could be arranged and what could be done with the waste. Finnish cities and towns are semi-independent from the state to make their own decisions (Finnish law 17.3.1995/365). The role of waste management companies in this matter is also important, because waste management has been outsourced to private waste management companies and to state-owned companies (Kohtamäki, 2010). So, when viewing this through the elite theory, the municipal decision makers could be a member of the inner core; but, this would require more research. Towns and cities could be seen as an institution giving them institutional power that Mills wrote about (Mills 2000, 9-14).

According to the interview, Helsinki seems to have a good possibility to decide on how

energy is produced (Quote 51). Helsinki has made initiatives when it comes to biogas production. Helsinki's actions have been explained in more detail in chapter 2.4.

51. "From my view, towns have not used it very much (biogas). For example, when it comes to traffic, towns would have the possibility to do something. For example, in Sweden, these environmental cars and biofuels have been promoted very much by towns. So, one could think that Finnish towns could have more possibilities to increase the usage of these technologies than what they have been doing so far. If one would think of this matter in a broader sense, towns which have energy production in their own grasp, like in Helsinki, could have a great influence on how energy is produced in towns." (Expert)

So, as stated earlier, it seems that the Finnish towns and cities could have a big role in increasing the use of new energy sources. To answer this question fully, a totally separate research project would be needed where people from different cities and towns would be interviewed and ongoing projects reviewed.

8. Conclusion

Conducting research like this has turned out to be a very broad endeavor. The broadness of the research implied that the study of every actor would have required a separate research project. Afterwards, it seems that the research could have been less extensive; but then, it would have been impossible to define the elite. This seemed to be the only way to get even tentative results. Being a member of the elite is a sum of many factors and still leaves questions that cannot be fully answered. In addition, researching this topic from the view of biogas was challenging because energy political decisions are all interrelated to each other. Energy policy is a matter where there are many actors globally and many energy sources and fuels that are interrelated. Thus, limiting the research to just one biofuel proved to be challenging. As stated earlier, the research was very broad and extensive which can be seen as a merit of this thesis. Also the people interviewed were not people who are normally interviewed in a master thesis. As stated earlier in the thesis, just getting in contact with these people was sometimes challenging; and, the interview was done according to the conditions the various people set.

At the beginning of this thesis, three research questions were stated: Within what context do the elites exist or not exist? Who are these elites? Why do they exist and why, nevertheless, some of the actors become a part of the impotent elite?

The context which the elites and non-elites exist in is the climate change economy. Climate change has created a climate change economy in Finland in the same way Mills (2000, 276-277, 1-30) said the Cold War created a war economy in the USA. The climate change economy is formed by the market economy and the European Union (EU). The European Union sets the political guidelines; and, the market economy sets the obligation of making profits. Therefore, we end up with the situation that the political guidelines require that profits must come to the national states and their companies. This creates competition between these actors when cooperation is what would be needed in the days of climate change. The main intent of all the actors is to make profits; although climate change would require supporting new and innovative ways of producing energy which are not always

profitable in the beginning. But it seems that in the current situation nothing can be really changed because this is how the market economy works. The way society works would have to be modified to really be able to mitigate climate change. The present market economy will not solve the problem.

When reviewing who the members of the inner and outer core are, the following came up: the elite inner core members are the energy industries, energy intense industries, the Ministry and Minister of Finance, The Ministry and Minister of Employment and the Economy, and the Cabinet. The outer core elite consists of the NGOs, the Parliament of Finland and the small and medium-sized enterprises (SMEs).

The features of the inner core are the existence of a unified political and economic elite, institutional size and their expertise. Expertise also defines the elite. The more expertise someone has, the more power they have; but expertise by itself is not enough. One must be a member of an important elite, know people who are members of social cliques, and have institutional power by being a member of a important institution. So, even though the features of the inner core are presented separately, they are intertwined.

There are two types of unified elites within Finnish energy policy. One such elite consist of the salient ministers and ministries and the large energy and energy-intense industries. The salient ministers and ministries are: the Ministry and Minister of Employment, the Economy and the Ministry and Minister of Finance and the Prime Minister. When viewing this from the vantage point of institutional power, large companies are wealthy and have expertise and have significance when fiscal policy of Finland is considered. Ministries are a major political institution which gives them and their members power. The second unified elite exists within the parliament. The unified elite within the parliament consists of middle-aged men who are socially similar and have good incomes. They support traditional ways of producing energy. The reason why this elite within the parliament has formed is because if members of parliament spend time with business leaders, they slowly start to be assimilated into the thinking and ways of the business leaders. One could also observe that the saying: “If you want to be a winner, be a member of the winners”, is true. Parliament

members recognize that the most important benefactors are business leaders. Therefore, members of parliament support their goals. One reason why political leaders support the traditional industries is because that is considered to be best for the fiscal policy of Finland. Political leaders and members of parliament are afraid to do anything new when energy policy is devised. In addition, large companies dominate political decision making in energy policy because they have the most resources to produce information which information seems to be more credible than information from smaller actors. This also undermines transparency because information that is taken seriously is mostly produced by a limited group of actors.

The features of the outer core elite have a converse relationship to the same features of the inner core's elite. The outer core members are members of small institutions or institutions that do not have much meaning or wealth. They are not members of the most influential social cliques of Finland. They also do not have as much information as the inner core members, or the information they produce is not taken as seriously as the information from the members of the inner core. The role of the social cliques, information and institutions was discussed earlier when reviewing the situation of the unified elites in Finland. The issue of the diminishing role of the democracy was also mentioned then.

First, when reviewing the issue of the diminishing role of democracy, the parliament's power is not directly limited in any way by outside groups, entities, or individuals, because the parliaments' powers' are defined by law and statutes (Finnish law 94/1919).

Therefore, the parliament has power as an institution, but the members of parliament are under pressure from heavy lobbying. Also, parliament members' proposals for new policies are not taken seriously. According to the interviews, the information that parliament members get is said to be sometimes biased, biased in the sense that the information is not objective. According to the interviews, it seems that parliament members should be more aware of the nature of politics, information and lobbying, or objective information should be offered to them. Some said that the small role of parliament is a good feature because the decisions made by Parliament are not of good quality. Is this because of the fact that political leaders could be seen as people with no firm line of policy or little education or

knowledge? Maybe some people have lost faith in the Parliament. If the quality of the decisions made by the parliament is not good, should we blame the people who voted for them? Or perhaps the members of parliament who have not educated themselves better? Although, the amount of information on the top levels of decision making is so massive that it is impossible to know everything. It seems that nobody can be blamed for the poor decision-making of parliament. Maybe the members of parliament should be divided into groups according to what area they wish to specialize in when decisions are made. Maybe representative democracy where everyone is trying to be an expert on everything is impossible, and creates more harm than advantage.

Second, when reviewing the matter of information, the parliament members get biased information. Objective information was requested by members of parliament. It seems according to conclusions made by the researcher that members of parliament should be aware of the nature of information and politics. Here, once again, experience is important.

SMEs also sometimes have the problem of getting sufficient information to make future plans concerning investments. This problem can be seen to result from the fact that SMEs are not major institutions with a major impact on Finnish fiscal policy. In addition, SMEs have requested long-term planning when policy is being designed, because, for example decisions of taxation changes too often to be able to make long-term plans regarding investments. The lack of transparency seems to be a feature of Finnish decision making when reviewing the interviews. Decisions are made behind seemingly closed doors. Information should be produced by many actors and researchers, and information should be open to everyone who needs it. It seems that information is used to ensure the elite and controlling position of the traditional energy industries. Outside experts should be used when producing information for people in leading positions of institutions. This could improve the role of the parliament and restore representative democracy.

Political bureaucrats have power when introducing matters; and, if the minister of their ministry is inexperienced, the bureaucrats will then have power when shaping policy. There were also hints in this thesis that political bureaucrats might have their own line of

policy. The bureaucrats' role needs further research in the future, although the extent of their influence could be difficult to reveal because it is hidden. The only way to research their actual power according to this research would be through interviews.

All people interviewed stated that NGOs do not have very great influence, or if they do, their influence is limited to providing information. It seems that in the case of the non-governmental organizations (NGOs), the lack of social networks, the lack of support of a vast influential institution and the lack of financial resources are what makes them part of the outer core. NGOs do not have the close attention of key decision makers that the industries have. NGOs also do not have the resources to lobby heavily. NGOs have the institutional position to make them a part of the outer core; but, their institutions are not strong enough to put them in the inner core.

Towns and cities would have the potential power to increase the use of biogas; but, they have not often used their power to do that. This again would have required a separate research project because interviews of many representatives of cities would have been needed. I cannot say that I can answer this question fully. There are projects going on; but, whether these projects will be realized is another question. However, the projects have great potential. There has been cooperation between research institutions and academicians and cities and towns. This is a matter that would also need research. That question cannot be answered with the current information.

To summarize the previous paragraph, we can see how the three Cs are important when defining the elite. The three Cs are: cohesion, consciousness and conspiracy. The elite is a group that is unified and have connections to each other. They have a shared consciousness, a way of viewing the world and they have a common goal. Conspiracy, here, means a common goal, not a secret plan. (Meisel 1958, 361.) This seems to be the case when reviewing the situation in Finland. It has been surprising to find such a strong elite within Finnish energy policy even though that fact seems clear when reviewing

previous research. What seemed most amazing is that everyone knows of this elite but nothing is done.

It seems that the existence of an elite is a risk to transparency. Elites are what control Finnish energy policy. They also control information, access to power, the process of influential power and the institutions. Transparency is an issue that should be the number one objective of every society. According to this thesis it seems that many matters could be improved just by giving objective information to actors with potential power. Although, if there truly is a strong unified elite in Finnish policy as there seems to be, giving objective information is not enough. Therefore I conclude with the climate change economy that has been presented in this thesis. Creating sustainable energy policy is not possible if the market economy is what sets the rules of the game. Competition is what results from the market economy when cooperation is what would be needed. The European Union is a step in the right direction but everything is still based on market solutions. Therefore a totally new system would be needed. What this system could be, this is a topic of another research project.

Bibliography:

Abianeh, O. S.; Mirsalim, M. & Ommi, F. 2009. Combustion Development of a bi-fuel engine. *International Journal of Automotive Technology*, Vol. 10, No. 1, pp. 17–25 (2009). Springer

Adams, John 1856. *The Works of John Adams, Second President of the United States: with a Life of the Author, Notes and Illustrations, by his Grandson Charles Francis Adams* (Boston: Little, Brown and Co., 1856). 10 volumes. Vol. 6. Chapter: Discourses of Davila.

Ahonen, Hannu 2005. Ajettua: Volvo V70 Bi-fuel. *Tekniikan maailma*. 22/2005 page 36. OtavaMedia.

Alasuutari, Pertti: *Laadullinen tutkimus. Vastapaino*, Jyväskylä 1995.

Aptheker, Herbert. 1960. *The World of C. Wright Mills*. First Edition. New York: Marzani and Munsell.

Bell, R.G., Mathur, K., Narain, U. , and Simpson, D. 2004. "Clearing the Air: How Delhi Broke the Logjam on Air Quality Reforms," *Environment*, April 2004, 22-39

Birch, Anthony H. 2001. *Concepts and Theories of Modern Democracy*. London : Routledge, 1993.

BioG 2010. Biokaasun tuotannon liiketoimintamallien kehittäminen Pohjois-Pohjanmaalla – BioG. Oulu University of Applied Sciences. Referred to: 29th of September, 2011.
http://www.liikennebiokaasu.fi/index.php?option=com_content&view=article&id=40:61-joensuun-seudun-asukkaista-ja-64-kuljetusyriyksista-haluaa-ajaa-biokaasulla&catid=27:ajankohtaista

Biokaasua Keuruulle 2011. Biokaasua Keuruulle -hanke tällä hetkellä. Referred to: 29th of September, 2011.
<http://biokaasuakeuruulle.com/index.php/juurinyt.html>

Biomode 2011. Biomode. Referred to: 19th of April, 2011.
<http://www.vei.fi/content/fi/11501/197/197.html>

BIOvakka Suomi Oy 2010. Gasum and Biovakka to construct biogas facility for Nastola, Finland. Referred to: 18th November, 2010.
<http://www.biovakka.fi/Nastola+Finland>

BIOvakka 2009. Gasum ja Biovakka alkavat tuottaa biokaasua maakaasuverkkoon.

BIOvakka 2009. Referred to 12th of March, 2011.

<http://www.biovakka.fi/Gasum+ja+Biovakka+alkavat+tuottaa+biokaasua>

Brewer, John D. 2003. *C. Wright Mills and the Ending of Violence*. Palgrave MacMillian. New York. United States.

Chadwick, Bruce A.; Bahr, Howard M.; Albrecht, Stan L. 1984. *Social science research methods* Englewood Cliffs, N.J. : Prentice-Hall

Dahl, Robert A. 1968. *A Critique of the Ruling Elite Model*. In the book: *C. Wright Mills and the Power Elite*. Eds. Domhoff, William G. & Ballard, Hoyt B. Third printing 1971. Beacon Press. Boston.

De Ferranti, David; Jacinto, Justin; Ody Anthony J. And Ramshaw, Graeme 2009. *How to Improve Governance : A New Framework for Analysis and Action*. Brookings Institution Press. Washington, DC, USA

Deublein, Dieter & Steinhauser, Angelika 2008. *Biogas from waste and renewable resources: an introduction*. Wiley-VCH Verlag GmbH & Co. KgaA Weinheim. Germany.

Domhoff, G. William. 2006. "Mills' The Power Elite 50 Years Later." *Contemporary Sociology* 35:547-550. IngentaConnect

Domhoff, G. William 2007. *C Wright Mills, Power Structure Research, and the Failures of Mainstream Political Science*. *New Political Science* 29 (2007), pp. 97-114. Taylor & Francis.

Elliot, David 2002. *Energy, Society and Environment – technology for a sustainable future*. London : Routledge New York.

Engdahl, William F. 2010. *Tectonic Shift in Heartland Power: Part 2: High-stakes Eurasian Chess Game: Russia's New Geopolitical Energy Calculus*. 30th of March, 2010. <http://www.voltairenet.org/article164714.html>

Finnish Government 2010. *Hallituksen esitys eduskunnalle laiksi uusiutuvilla energialähteillä tuotetun sähkön tuotantotuesta*. HE 152/2010. Referred to: 15.1.2011 <http://www.finlex.fi/fi/esitykset/he/2010/20100152.pdf>

Finnish law 94/1919. *Suomen Hallitusmuoto 94/1919*. Finlex. Referred to: 18th October, 2011 <http://www.finlex.fi/fi/laki/alkup/1919/19190094001>

Forest Btl 2011. *Forest Btl, sustainable engineering*. Referred to: 18th October, 2011 <http://www.forestbtl.com/>

Foucault, Michel 2005. *Tarkkailla ja rangaista* (Translation of the book: *Surveiller et punir*,

in english: Discipline and punish, 1975). Helsinki : Otava, 2005 (Keuruu : Otava)

GasHighWay 2011a. GasHighWay. Last modified: 3/29/2011 2:17:22 PM. Referred to: 19th of April, 2011

<http://www.gashighway.net/default.asp?SivuID=25922>

GasHighWay 2011b. Contacts. Last modified: 3/29/2011 2:17:22 PM. Referred to: 19th of April, 2011

<http://www.gashighway.net/default.asp?SivuID=26095>

Gasum Ltd. 2011. Verkostokartat. Suomi. Referred to: 19th of April, 2011.

<http://www.gasum.fi/kaasuverkostot/verkostokartat/Sivut/default.aspx>

Hellman, Heikki 2010. Kaatopaikalle kierrätetty. Helsingin Sanomat 21.2.2010

Hospido, Almudena; Carballa, Marta; Moreiraa, Maite; Omila, Francisco; Lemaa, Juan M. and Feijooa, Gumersindo 2010. Environmental assessment of anaerobically digested sludge reuse in agriculture: Potential impacts of emerging micropollutants. Water Research Volume 44, Issue 10, May 2010, Pages 3225-3233. Elsevier.

Horowitz, Irving Louis 1983. C. Wright Mills: An American Utopian. The Free Press, a division of Macmillian, Inc. United States.

Hänninen, Martti 2011. Picture 3. GasHighWay. Referred to: 18th October, 2010

<http://www.gashighway.net/>

Ilkka 2009. Bioetanoli ei enää kuulu Altian strategiaan. Newspaper. 12th of October, 2009. Referred to: 8th of August, 2011.

<http://www.ilkka.fi/uutiset/maakunta/bioetanoli-ei-ena-kuulu-altian-strategiaan-1.884599>

IPPC 2007a. Climate Change 2007: Working Group I: The Physical Science Basis. IPCC. Referred to: 18th October, 2011

http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

IPCC 2007b. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Referred to: 18th October, 2011

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-faqs.pdf>

Kadushin, Charles 1968. "Power, Influence and Social Circles. A New Methodology for Studying Opinion Makers. American Sociological Review, Vol. 33, No. 5 pp. 685-699. American Sociological Association. USA

Karapidakis, E. S.; Tsave, A. A.; Soupios, P. M. & Katsigiannis, Y. A. 2010. Energy efficiency and environmental impact of biogas utilization in landfills. *International Journal of Environmental Science and Technology*, 7 (3), 599-608, Summer 2010. Graduate School of the Environment and Energy. Tehran, Iran.

Kilpelä, Pasi 2011. Email from Pasi Kilpelä, senior inspector at the Finnish Transport Safety Agency.

Kohtamäki, Pirjo 2010. Alueelliset jätehuoltoyhtiöt, kuntayhtymät ja liikelaitokset. *Kunnat.net*. Referred to: 25 of May, 2011
<http://hankinnat.fi/attachment.asp?path=1;29;145;30546;38442;152179;141326;141327>

Kornhauser, William 1968. "Power Elite" or "Veto Groups"? In the book: C. Wright Mills and the Power Elite. Eds. Domhoff, William G. & Ballard, Hoyt B. Third printing 1971. Beacon Press. Boston.

Kuittinen, Ville; Huttunen, Markku J. & Leinonen, Simo 2010. Editor: Prof. Pertti Pasanen. *Biokaasulaitosrekisteri n:o 13. Joensuun Yliopistopaino. Joensuu, 2010.*

Laita, Samuli 2010a. Biojäte mätänee Ämmäsuon uudessa laitoksessa ehkä jo 2012. *Helsingin Sanomat* 18.2.2010. Referred to: 11.11.2010

Laita, Samuli 2010b. Ämmäsuolla jäte kaasuuntuu sähköksi. *Helsingin Sanomat* 22.5.2010. Referred to: 11.11.2010

Lampinen, Ari. 2003. Jätteiden liikennekäyttöpotentiaali Suomessa. Referred to: 11th October, 2010
http://www.kaapeli.fi/~tep/projektit/liikenteen_biopolttoaineet/Kuntatekniikka_biokaasupotentiaali.PDF

Lampinen, Ari 2008a. Liikennebiokaasulainsäädäntö. Vaasan yliopisto, Levón instituutti.

Lampinen, Ari 2008b. Fossiilisten liikennepolttoaineiden tukimekanismien kehitys Suomen verolainsäädännössä. *Oikeus* 2008 (37) ; 4: 453–473. Referred to: 1st of January, 2011
http://www.liikennebiokaasu.fi/Lampinen_Oikeus_4_2008.pdf

Liikennebiokaasu.fi 2011. 61 % Joensuun seudun asukkaista ja 64 % kuljetusyriyksistä haluaa ajaa biokaasulla. Pohjois-Karjalan liikennebiokaasuverkoston kehityshanke. Joensuun Seudun Jätehuolto Oy. Referred to: 29th of September, 2011.
http://www.liikennebiokaasu.fi/index.php?option=com_content&view=article&id=40:61-joensuun-seudun-asukkaista-ja-64-kuljetusyriyksista-haluaa-ajaa-biokaasulla&catid=27:ajankohtaista

Lähteenmäki, Pekka 2010. Vienti on suurten varassa. 28.5.2010 *Talouselämä*. Referred to: 1st of June, 2011

<http://www.talouselama.fi/te500/article409422.ece>

Massé D.I, G. Talbot, Y. Gilbert 2011. On farm biogas production: A method to reduce GHG emissions and develop more sustainable livestock operations. Elsevier.

McDermott, Dana P. Oral communiqué. 1st of June, 2011.

McIntyre, Lisa J., 2005. Need to know : social science research methods. Boston. McGraw-Hill

Meisel, James H. 1958. The myth of the ruling class: Gaetano Mosca and the "Elite". Ann Arbor. Michigan. United States of America

Metenor Ltd. 2010. Biokaasun tankkausasema. Referred to: 4th of September, 2011.
<http://www.metener.fi/fi/biokaasun-tankkausasema>

Michels, Robert (1925) 1986. Puoluelaitos nykyajan demokratiassa published in 1986. (A translation of Michels Zur Soziologie des Parteiwesens in der modernen Demokratie. Untersuchungen über die oligarchischen Tendenzen des Gruppenlebens (1925). This was edited by Michels himself and is a newly printed version of the original book published in 1911.) Werner Söderström Osakeyhtiö. Porvoo – Helsinki – Juva.

Mills, C. Wright (1956) 2000. The Power Elite. New Edition. (This is a new edition of Mills' book "The Power Elite" with an afterword by Alan Wolfe. The original book was first published in 1956). New Oxford University Press. New York. USA.

Mosca, Gaetano 1939. The Ruling Class. McGraw-Hill Book Company, Inc. United States of America.

Mäkelä, Klaus 1990. Kvalitatiivisen analyysin arviointiperusteet. In the book: Mäkelä, Klaus (ed.) Kvalitatiivisen aineiston analyysi ja tulkinta. Helsinki. Gaudeamus.

Neste Oil Ltd. 2011. Historia. Referred to: 12th of April, 2011.
<http://www.nesteoil.fi/default.asp?path=35,52,62,163>

Nylund, Nils-Olof & Aakko-Saksa, Päivi 2007. Liikenteen polttoaine vaihtoehdot. Kehitystilanneraportti. Laaja versio. Pages 68-69. Referred to: 11.11.2010
<http://www.motiva.fi/files/954/liikenteen-polttoainevaihtoehdot----kehitystilanneraportti.pdf>

Ophard 2003. Virtual Chembook. Elmhurst College. Referred to: 1st of June, 2011
<http://www.elmhurst.edu/~chm/vchembook/511natgascombust.html>

Pareto, Vilfredo 1963. The Mind and Society. New York: Dover Publications.

Perrings, Charles 1987 (reprinted in 1990). *Economy and the Environment*. Cambridge University Press. USA.

Parry, Geraint 1969. *Political Elites*, Studies in Political Science. London : Allen & Unwin, 1969

POKELY/34/07.04/2010. Referred to: 19th of April, 2011.

<http://ely.combo.fi/fi/ELYkeskukset/pohjoiskarjalanely/Documents/Outokumpubiokaasulaitos.pdf>

Polanyi, Karl 2009. *Suuri murros : aikakautemme poliittiset ja taloudelliset juuret*. (Translation of the book: *The Great Transformation. The Political and economic Origins of Our Time*, 1944) Tampere. Vastapaino.

Prime minister's office 2011. *Valtion osuudet ja eduskuntavaltuudet 3.1.2011*. Referred to: 1st of June, 2011

http://www.valtionomistus.fi/documents/Pdf-tiedostot/edvaltuudet_suo_11a_2011.pdf

Raunio, Tapio 2008 (The year is unclear, but the link has the numbers 0809 on it so it seems that it means the academic year of 2008-2009). *Lecture: Johdatus Euroopan unioniin*. University of Helsinki.

Ruostetsaari, Ilkka. 1998. *Energiapolitiikka käännekohdassa s. 173 – 206*. Tampereen yliopisto. Tampereen yliopisto, jäljennepalvelu.

Rönkkö, Janne 2009. *Kymen bioenergia käynnistää bioenergiaprojektin*. 17.9.2009.

Kouvolan Sanomat, Sanoma Lehtimedia Oy. Referred to: 3rd of June, 2011

<http://www.kouvolansanomat.fi/Talous---Taloustuutiset/2009/09/17/Kymen+Bioenergia+k%C3%A4ynnist%C3%A4%C3%A4+biokaasulaitoshankkeen/200927703610/8>

Sagagi, B. S., B. Garba and N. S. Usman 2009. *Studies on biogas production from fruit and vegetable waste*. *Bayero Journal of Pure and Applied Sciences*, 2(1): 115 – 118, 2009.

Referred to: 29th of September, 2011.

<http://www.ajol.info/index.php/bajopas/article/viewFile/58513/46858>

Schulze, E.D.; Vries W.D.; Hauhs M., Rosen K.; Rasmussen L.; Tamm C.O and Nilsson J. 1989. *Critical loads for nitrogen deposition on forest ecosystems*, *Water, Air, & Soil Pollution*. 48, 451–456.

Silverman, David 2005. *Doing Qualitative Research – A Practical Handbook*. Sage Publications. Great Britain.

Soikkeli, Markku (1996): *Veljeys, veljeys ja veljeys. Miesten välisen homososiaalisuuden arkkityyppi t. Kulttuuritutkimus* 13 (4): 15-24.

Spira-Cohen, Ariel; Lung, Chi Chen; Kendall, Michaela; Lall, Ramona and Thurston, George D. Personal Exposures to Traffic-Related Air Pollution and Acute Respiratory Health among Bronx Schoolchildren with Asthma. *Environmental Health Perspectives* Apr 2011, Vol. 119 Issue 4, p559-565

Sweezy, Paul 1968. "Power Elite or Ruling Class?" Pp. 115–32 in G. William Domhoff and Hoyt B. Ballard, eds., *C. Wright Mills and the Power Elite*. Boston, Massachusetts: Beacon Press.

Talouselämä 2011a. Largest companies according to export in Finland (there is no title on the page). Referred to: 5th of October, 2011

<http://www.talouselama.fi/te500/?view=list&default=8&show=25&def=4&def=12&def=18>

Talouselämä 2011b. Suurimmat yhtiöt. Referred to: 5th of October, 2011

<http://www.talouselama.fi/te500/>

Trafi 2011. Ajoneuvovero muuttuu päästöperusteiseksi. Referred to: 8th of April, 2011.

<http://www.ake.fi/AKE/Verotus/Ajoneuvovero/Ymp%C3%A4rist%C3%B6perusteinen+ajoneuvovero.htm>

Tuomi, Jouni & Sarajärvi, Anneli 2009. *Laadullinen tutkimus ja sisällönanalyysi*. Helsinki : Tammi, 2009

Volk, Heather E.; Hertz-Picciotto, Irva; Delwiche, Lora; Lurmann, Fred, and McConnell, Rob 2011. Residential Proximity to Freeways and Autism in the CHARGE Study. *Environmental Health Perspectives*, volume 119, number 6, June 2011. National Institute of Environmental Health Sciences.

Upm-Kymmene 2009. Metso, Fortum, UPM and VTT are jointly developing a clean energy alternative with domestic bio-oil. 30th of November, 2009. Referred to: 6th of May, 2011.

http://w3.upm-kymmene.com/upm/internet/cms/upmcms.nsf/prv/Metso,_Fortum,_UPM,_and_VTT_are_jointly_developing_a_clean_energy_alternative_with_domestic_bio-oil?OpenDocument

Vaartimo, Olli 2008. Metso and Wärtsilä form joint venture for renewable energy solutions 26.9.2008. Referred to: 5th of October, 2011

http://www.mwpower.fi/mwpower/mwpower_news.nsf/WebWID/WTB-090522-22575-24A4A?OpenDocument

Vambio Oy 2010. Biokaasulaitoksemme rakentaminen käynnistyi. 17.5.2010 Referred to: 22nd of November, 2010.

<http://www.vambio.fi/DowebEasyCMS/?Page=NaytaUutinen&NewsId=32>

Veijola, Soile and Jokinen, Eeva (2001): *Voiko naista rakastaa? Avion ja eron karuselli*.

WSOY. Helsinki.

Weiland, Peter 2010. Biogas production: current state and perspectives. *Appl Microbiol Biotechnol* (2010) 85:849–860. Springer.

Wilkinson, Sue. *Qualitative Research: Theory, Method and Practice*. Edited by Silverman, David. 1997. Sage

Mykkänen, Eeli 2009. Keski-Suomen liitolta lisärahoitusta ”Biokaasusta energiaa Keski-Suomeen” -hankkeelle. 1.12.2009. Referred to 18 of June, 2011

http://www.jklinnovation.fi/default/www/jyvaskyla_innovation_oy/media/tiedotteet/keski-suomen_liitolta_lisarahoitusta_biokaasusta_energiaa_keski_suomeen_hankkeelle/

Wozniak, John F. 2008. C. Wright Mills and higher immorality: implications for corporate crime, ethics, and peacemaking criminology. *Crime Law Soc Change* (2009) 51:189–203. Springer Science + Business Media B.V. 2008

Zweigenhaft, Richard L. 2007. Diversity in the United States power elite. *Journal of international migration and integration* [1488-3473] Volume 2, Number 2, 267-281. Springer.

Laws:

Finnish law 17.3.1995/365. Kuntalaki 17.3.1995/365. Finlex. Referred to 11th of June, 2011
<http://www.finlex.fi/fi/laki/ajantasa/1995/19950365>

Finnish law 19.8.1994/750. Valtion virkamieslaki 19.8.1994/750. Finlex. Referred to 18th of June, 2011
<http://www.edilex.fi/saadokset/lainsaadanto/19940750>

Finnish law 30.12.2010/1397. Valtioneuvoston asetus uusiutuvilla energialähteillä tuotetun sähkön tuotantotuesta 30.12.2010/1397. Finlex. Referred to 10th of June, 2011
<http://www.finlex.fi/fi/laki/ajantasa/2010/20101397?search%5Btype%5D=pika&search%5Bpika%5D=biokaasu>

U.S. Constitution. U.S. Constitution: Article I. Clause 3. Commerce Power. Power to regulate commerce. Purposes Served by the Grant. From the website: FindLaw for legal professionals. Referred to: 25th of May, 2011.

<http://caselaw.lp.findlaw.com/data/constitution/article01/28.html>

Supporting Research Material

Government Documents:

Ministry of the Environment 2009a. Kauppa- ja teollisuusministeriön 6.10.2009 päivätty lausuntopyyntö TEM269:00/2008. 30.10.2009. Ministry of the Environment. Referred to: 10th of June, 2011
http://www.tem.fi/files/25154/YM_lausunto.pdf

Ministry of the Environment 2009b. EU:n ilmasto- ja energiapaketti. 30.11.2009. Referred to: 10th of June, 2011
<http://www.ymparisto.fi/default.asp?node=22013&lan=fi>

Finnish Biogas Association 2009. Suomen biokaasuyhdistys ry:n lausunto työ- ja elinkeinoministeriölle syöttötariffityöryhmän loppuraportista. 28.10.2009. Referred to: 12th of June, 2011
http://www.tem.fi/files/25157/Biokaasuyhdistys_ry.pdf

Ministry of employment and the economy 2009. Syöttötariffiryhmän loppuraportti. Ehdotus tuulivoimalla ja biokaasulla tuotetun sähkösyöttötariffiksi. 30.11.2009. Referred to: 10th of June, 2011
http://www.tem.fi/files/24645/Sy_tt_tariffity_ryhm_n_loppuraportti_29-09-09.pdf

West Finland Regional Environment Centre 2006. Lausunto ympäristövaikutusten arviointiohjelmasta. Koskenkorvan tehtaan laajennus, Altia Oyj Koskenkorvan tehdas, Ilmajoki. 30.11.2009. Referred to: 10th of June, 2011
<http://www.ymparisto.fi/download.asp?contentid=58161>

Finnish Government 2010. Hallituksen esitys Eduskunnalle laiksi uusiutuvilla energialähteillä tuotetun sähkön tuotantotuesta. Referred to: 10th of June, 2011
<http://217.71.145.20/TRIPviewer/show.asp?tunniste=HE+152/2010&base=erhe&palvelin=www.eduskunta.fi&f=WORD>

Maa- ja metsätalousvaliokunnan lausunto 21/2010 vp. Hallituksen esitys laiksi uusiutuvilla energialähteillä tuotetun sähkön tuotantotuesta. MmVL 21/2010 vp - HE 152/2010 vp Talousvaliokunnalle. Referred to: 17th of June, 2011
http://www.eduskunta.fi/faktatmp/utatmp/akxtmp/mmvl_21_2010_p.shtml

Directives and Documents of the European Union:

2003/30/EC. Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport. Referred to: 12th of May, 2011

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0030:EN:NOT>

2009/28/EC. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance). Referred to: 12th of May, 2011

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT>

COM/2010/0639 final. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Energy 2020 A strategy for competitive, sustainable and secure energy. Referred to: 12th of May, 2011

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0639:EN:HTML:NOT>

European Union 2005. Transposition into national law of directives relating to the internal market. Referred to 24th of May, 2011.

http://europa.eu/legislation_summaries/internal_market/internal_market_general_framework/122021_en.htm

[KOM(2007) 724. 2000-luvun Euroopan yhtenäismarkkinat. Referred to 30th of May, 2011

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0724:FIN:FI:PDF>

Other Supporting Information:

Gasum Ltd. Gasum in Brief.

<http://www.gasum.fi/yritysinfo/gasumlyhyesti/Sivut/default.aspx>

Referred to 10th of May, 2011

Gasum Ltd. Omistajat.

<http://www.gasum.fi/yritysinfo/gasumlyhyesti/Sivut/Omistajat.aspx>

Referred to 12th of May, 2011

Lievonen, Matti 2011. Toimitusjohtajan vuosikatsaus.

http://qsb.webcast.fi/n/nesteoil/nesteoil_2011_0414_toimitusjohtajan_katsaus_2011/

Referred to: 25th of May, 2011

Metso 2010. Annual Report 2010.

[http://www.metso.com/corporation/ir_eng.nsf/WebWID/WTB-110308-2256F-7C5B5/\\$File/metso_annual_report_2010_finnish.pdf](http://www.metso.com/corporation/ir_eng.nsf/WebWID/WTB-110308-2256F-7C5B5/$File/metso_annual_report_2010_finnish.pdf)

Referred to 12th of May, 2011

Neste Oil Oy 2011. Omistajarakenne

<http://www.nesteoil.fi/default.asp?path=35,52,107,392,6838>

Referred to 12th of May, 2011

Neste Oil Ltd. 2010. Annual Report 2010.

<http://www.nesteoil.fi/binary.asp?GUID=979C2AA2-8420-48F7-8077-FBC25B5077A6>

Referred to: 25th of May, 2011

Stora Enso 2010. Annual Report 2010.

http://www.e-julkaisu.fi/storaenso/rethink_2010_fi/pdf/Stora_Enso_Rethink_F_2010.pdf

Referred to: 25th of May, 2011

UPM Kymmene 2010. Annual Report 2010.

http://www.upm.com/FI/SIJOITTAJAT/Raportit-ja-esitykset/2010/Documents/UPM_Vuosikertomus_2010.pdf

Referred to: 25th of May, 2011

Appendix

1. Questionnaire

The main idea of the questions is to bring forth political barriers and prerequisites in the use of biomethane as a motor vehicle fuel with a power elite view. The questions produced a lot of technical information but this made the interviews less obtrusive. This means that I didn't give the interviewed people ideas on what to answer increasing the reliability of the interviews. I used a semi structured questionnaire because usually when asking people why biomethane is not used more the answers are mostly related to the lack of infrastructure, no distribution network, no biomethane powered cars etc. So this broadened the view to administrative and political barriers and prerequisites. I did not ask the questions in the order on the questionnaire. I would let the interview go in its own pace and let new ideas come forth that I possibly had overlooked.

The interviews were done in Finnish so here is translation of the questions in the questionnaire:

- What is your current job?
 - How is it related to biogas?
 - How do you feel that you are an expert in this area?

- What do you think of the situation of biogas as a motor vehicle fuel currently?

Power and Energy Policy

- Describe the preparation of energy policy in Finland?

- What is energy political power consisted of in Finland?

- Who influences energy policy the most and who the least?
- Who makes the most important decisions?
- Is there something wrong in the fluency of decision-making?
- What influence does NGOs, politicians, industry, towns and cities and citizens have?

Prerequisites and Barriers

- Should biogas be sold at the same price / cheaper than gasoline?
 - What else is required that biogas would be a profitable option for producers and distributors?

Production and Use

- Who should produce biogas?
- Should biogas be used less or more? Why?
- For what purpose should biogas be used for?

Society and political decision-making

- What is required from political decision-making to make biogas more commonly used?
 - Is there a specific actor / actors that could crucially affect the use of biogas as a motor vehicle fuel?
- What is the future prospective for biogas as a motor vehicle fuel?
- Would you use it yourself? What would make you use it?

2. Appendix Tables on Biogas Production

Appendix Table 1. Biogas production in Community Waste Water Management Facilities in Finland (Kuittinen et. al. 2010 pages 17- 24)

Community Waste Water Management Facilities	Produced gas (1000 m ³)	Surplus gas brunt (not used for energy production)	Surplus gas not wasted (MWh)
Espoo, Suomenoja	3260	8,7	1549
Forssa	625	1,6	64
Helsinki, Viikinmäki	9925	3,8	2025
Hämeenlinna, Paroinen	581	0	0
Joensuu, Kuhasalo	817	8,6	400
Jyväskylä, Nenäinniemi	1242	17,2	1110
Kuopio, Lehtoniemi	1149	0,6	41
Lahti, Kariniemi ja Ali-Juhakkala	1700	11,8	1074
Maarianhamina, Lotsbroverket	316	23,9	281
Mikkeli, Kenkäveronniemi	432	32,3	787
Riikimäki	670	0	0
Salo	400	8,2	177
Tampere, Rahola	929	30,6	1599
Tampere, Viinikanlahti	1940	32,5	3553
Industrial Waste Water Management Facilities			
Chips Oy Ab, Godby	490	5	138
Apetit Suomi Oy, Säkylä	520	4,7	156
Agricultural Biogas Production Facilities			
Hannula, Ylivieska	50	0	0
Jungerå, Jepua	0,2	0	0
Junttila, Nivala	40	0	0
Kalmari, Laukaa	60	0	0
Koivunen, Virrat	131	0	0
Kotimäki, Halsua	100	0	0
Virtaala, Haapavesi	36	0	0
Other Biogas Plants			
Vaasa, Mustasaari, Stormossen	2281	30,1	3861
Biovakka	2078	23,1	2744
Laihia	163	73,7	616

Appendix Table 2. Biogas production in Community Waste Water Management Facilities in Finland (Kuittinen et. al. 2010 pages 17- 24)

Biogas Collected from Landfills	Produced gas (1000 m ³)	Surplus gas brunt (not used for energy production)	Surplus gas wasted (MWh)
Anjalankoski, Keltakangas	600	100	1923
Anjalankoski, Myllykoski Paper Oy, Sulento	700	100	1819
Espoo, Mankka	1773	100	5836
Espoo, Ämmässuo	68257	38,1	112680
Helsinki, Vuosaari	1152	76,1	3418
Hyvinkää ja Riihimäki, Kapula	2200	0	0
Hämeenlinna, Karanoja	1400	100	6791
Iisalmi, Peltomäki	800	100	3119
Imatra, Kurkisuo	500	94	2199
Joensuu, Kontiosuo	3284	22,9	2606
Jyväskylä, Mustankorkea	3100	0	0
Järvenpää, Puolmatka	100	100	277
Kajaani, Majasaarekangas	700	100	3093
Kerava, Savio	540	47,4	753
Kouvola, Sammalsuo	1300	100	5180
Kuopio, Heinälamminrinne	1200	0	0
Kuopio, Silmäsuo	800	0	0
Lahti, Kujala	3370	0	0
Lappeenranta, Toikansuo	300	0	0
Lohja, Munkkaa	320	15,1	231
Mikkeli, Metsä-Sairila	720	0	0
Nokia, Koukkujärvi	1200	0	0
Oulu, Rusko	7400	0	0
Pori, Hangassuo	800	31,3	1169
Porvoo, Domargård	600	0	0
Raisio, Isosuo	286	100	1412

Rovaniemi, Mäntyvaara	1668	1,1	83
Simpele, M-real Oyj, Konkamäki	400	0	0
Tampere, Tarastanjärvi	2900	0	0
Turku, Topinoja	1550	0	0
Uusikaupunki, Munaistenmetsä	0	0	0
Vaasa, Suvilahti	600	0	0
Vantaa, Seutula	1683	0,5	33

Appendix Table 3. Future Plans of Biogas production in Finland (Kuittinen et. al. 2010 page 27, Biovakka Suomi Oy 2010, POKELY 2010, Vambio Oy 2010)

Facility	Starting year	Reactor capacity (m ³)
BioKymppi Oy (Kitee)	2010	1000 + 2700
Biovakka Jämsä Oy (Jämsänkoski)	2011	2 x 3500 + 6500
Biovakka Oy, Nastola	2011	2 x 4000
Biovakka Oy, Turku	2009	2 x 3500
Envor Biotech Oy, Forssa	2010	2700
Envor Biotech Oy, Outokumpu	Permit obtained	
Haminan Energia Oy, Virolahti	Permit obtained	1000 – 2000
Heikas Oy, Kauhava	Permit obtained	
Heikas Oy, Lapua	EP	
Jeppo Kraft Andelslag, Nykarleby	2011	
Kymen BioEnergia Oy, Kouvola	2011	2000
Lassila & Tikanoja Oyj, Kaustinen	Permit obtained	
Lillby Biogas Ab, Pedersöre	EP	2 x 1500
Malax Bioenergi Oy Ab, Maalahti	EP	
Oy Pohjanmaan biokaasu, Pietarsaari	EP	
Polar Energy, Evijärvi	canceled	
Satakierto Oy, Köyliö	2009	2300
VamBio Oy, Vampula	2010	4000

EP = Environmental permit in process

3. Quotes in Finnish

“Ku sie ajat autolla ni ei siinä ole suomalaisia energipolitiikan toimijoita muuta kuin sekuka jalostaa sen raakaöljyn, joka tulee Venäjältä 90%:sesti... (Ministeri)

”Kun päätettiin viidennestä ydinvoimalasta, niin silloin käytiin sellasta huutokauppaa, osto ja myynti liikettä, kun kalastettiin näitä ääniä tämän ydinvoiman taakse. Silloin biokaasu oli yhtenä pelimerkinä ja silloin luvattiin muutamalle tällaiselle maalaistaustaiselle kansanedustajalle, että kun äänestät ydinvoiman puolesta niin samalla he lupaavat, siis lobbarit ja ministeriöt siinä ehkä mukana, lupasivat, et pannaan tää biokaasu liikkeelle ja tehdään siitä autojen polttoaine jne ja siinä kesti vuosia ennen kuin lainsäädännön puitteissa siihen tilanteeseen kuin nyt.” (Kansanedustaja)

1. ”monia asioita on vastustettu ja eri tahot on vastustanut ja asiat on mennyt eteenpäin positiivisessa mielessä ja asioita joita ennen vastustettiin, esimerkiksi yritysmaailma, on nyt ylpeä siitä, mitä ne ennen vastusti esimerkiksi jätevedenkäsittely. Kauhea vastustus 80-luvulla, ettei niitä tarvitse käsitellä, ettei se onnistu Suomessa. Kyllähän nyt ympäristöstä ja kestävydestä tehdään liiketoimintaa.” (Asiantuntija)

2. ”Markkinoiden hoidosta on yllin kyllin kokemusta finanssikriisin ja talouslaman muiden mukana tullut tää kokemus. Jälleen kerran myös niille, jotka on ollut markkinauskovaisia, uskoneet niin kuin rahanhimon, rahanahneuden siunauksellisiin oheisvaikutuksiin, jotka pyörittäs yhteiskuntaa siinä sivussa, mutta näinhän ei kuitenkaan oikeasti ole. Eikä ole ollut. Ja se näkyy näissä tilanteissa, joissa maapallon globaalikriisi nyt on, mutta tää on lähtökohtaisesti tää tilanne on tietysti et tarvitaan sitovasti ohjaavia säädöksiä, jotta mennään ilmastomuutoksen hillinnässä eteenpäin, koska nyt hän tää biokaasu liittyy nimenomaan siihen ja nyt tosiasialla me ollaan jälkijunassa – oikeastaan pari junaa on jo menny.” (Kansanedustaja)

3. “Olen kuullut jatkuvasti, että se on liian bisneksen määräämää, kyllä meillä saa bisnes tehdä riittävän vapaasti monet päätökset. Joku sääntely kuitenkin tarvitaan, meillä on jo nyt Euroopan vapaimmat energiamarkkinat.” (Minsteri)

4. "...vaikkapa tuo Ruotsin jakeluvuoritelaki elikkä Ruotissa tehtiin vuonna 2006 laki, joka sano että kaikkien suurten huoltoasemien on pakko myydä biopolttoaineita. Jos mentäs kysymään niiltä huoltoasema ketjuilta, että sopiiko niille se, ni yhellekään ei sovi. Se on ihan selvä, jos sä meet kysymään niiltä miltä tahansa ketjulta sopiiko, että tehdään tuollainen pakkolaki, että teidän on pakko myydä se on selvä, että Ruotissa ykskään ketju ei haluais sitä, samoin Suomessa, ykskään ketju ei haluais sitä. Ruotissa se laki tehtiin siitä huolimatta" (Asiantuntija ja aktivisti)

5. "...meille politikoille tosiaan sanotaan näin et meiltä menee kilpailukyky – teollisuudelta. Sit ei oo vientituloja, ne on niin isoja pelottavia kysymyksiä, ni politikot ei uskalla olla kuuntelematta näiden juttuja. Ja tää on niinku pelottava asia. Ja mä väitän et niinku asiantuntija kuulemisissa, niinku hirveen vahvasti esim. talousvaliokunnassa pelkästään tätä näkemystä: talous- ja vientipoliittista ja näi, eikä nähdä sitä että, mihin maailma on menossa ja tulis toisen tyyppisiäkin kannanottoja." (Kansanedustaja)

6. "EU:sta on peräisin meidän velvoitteiden tehostaa energiankäyttöä ja lisätä uusiutuvaa energian osuutta ja leikata päästöjä ja ne on kuitenkin ne, jotka eniten vaikuttaa käytännössä energiapolitiikkaan tällä hetkellä...ennen näitä EU:n pakottavia sitovia velvoitteita, niin tässä maassa ei tapahtunut juuri mitään. Eli kyllä tää on hyvin EU vetoista poltiikkaa, ainoastaan, kun EU on pakottanut Suomen tekemään jotain, niin Suomi on tehnyt jotain. Et jos vaikka esimerkkinä käyttää tätä liikenteenbiopolttoaineen tavoitetta, niin ennen EU velvoitetta biopolttoaineita oli Suomessa liikennekäytössä alle promillen. Mutta nyt se on pakko nostaa siihen 5,75%:iin ja edelleen 10%:iin." (Kansanedustaja)

8. "Eli EU kyllä mahdollistaisi kyllä erittäin plajo paremman energiapolitiikan kuin mitä Suomessa tehään, mutta että sen pakottamismahdollisuudet on rajoitetut. Toki se pakottaa mm. liikennebiopolttoaineissa Suomi ei ensi alkuun halunnut tehdä yhtään mitään elikkä Suomessa niinkun tuossa edellisessä esimerkissä kävi ilmi kysyttiin liikennebiopolttoaineen valmistajilta, että sopisko niille, että tehään jotai tällaisia lakeja että on pakko ruveta käyttämään biopolttoaineita, niin näiden fossiilisten polttoaineiden valmistajat sanoi ei, joten Suomi sanoi EU:lle, että meille ei sovi. Että me ei ruveta liikennepolttoaine direktiiviä toteuttamaan, mutta että kun kommissio uhkas EU-oikeudella, niin sitte oli pakko ruveta tekemään jotain." (Asiantuntija ja aktivisti)

8. ”Hirveen iso rooli on suurteollisuudella ja suurilla energia tuottajilla. Valtava voima on Fortumilla, Vapo:lla, Nesteellä, tän tyyppisillä energiantoimijoilla. Sitten niinku teollisuuden haaroilla metsäteollisuudella ja metalliteollisuudella.” (Kansanedustaja)

9. ”Energieollisuus ry:ssä on suuria energiatuottajia ja suuria energiakäyttäjiä jäsenenä ja he tietysti ajavat omia etujaan sen järjestön kautta.” (Asiantuntija)

10. “...liikenteen biopolttoaineet tavalaan montaa hallinnonalaa koskettavaa asiaa et se ei oo TEM:in yksinoikeus vaan siinä on liikenne liikenne, ympäristö ja maa- ja metsätalousministeriöllä ja tieysti valtionvarainministeriö sitten jolla on joka asiassa aika lailla niinku roolia. Et tää biokaasu esimerkiksi jos ajatellaan sitä käytännön tuotantoa ja ja tuota sikäli kuin se on tällaista maatiloilla ja sillä tasolla tapahtuvaa tuotantoa, niin sikäli se on nykyisen työjaon mukaan maa- ja metsätalousministeriön asia. Tukijärjestelmän ja tällaiset on maa- ja metsätalousministeriön heiniä.” (Virkamies)

11. ”Energiapoliittinen vaikutusvalta...Tää on keskeisillä ministereillä aina, oli mikä hallitus tahansa, niin kyllä se kolmen kopla ehkä niinku pääministeri, valtiovarainministeri ja kauppa- ja teollisuusministeri niillä on niinku hirveän suuri valta” (Kansanedustaja)

12. ”tietyt avaintasot, tahot, valtiovarainministeri, ministeriön porukka vastustaa, niin silloin tahtoo olla hallituksellakin vaikeuksia saada vauhdikkaasti asioita läpi.” (Kansanedustaja)

13. ”oli hallituksessa ketä tahansa, niin politiikkahan on hyvin samantapaista kumminkin aina. Niin se johtuu hirveästi siitä että, kun todellisuudessa kun sillä eduskunnalla ei oo valtaa niin paljon, niin ne on niitä virkamiehiä jotka siitä päätöksestä vastaa hirveän paljon. Ja mitä kokemattomampi ministeri, niin sitä enemmän se antaa ministeriön virkamiesten viedä....Kyllä minä väitän, et tän allekirjoittaa monet kansanedustajat” (Kansanedustaja)

14. ”Totta kai, nehän valmistelee kaikki esitykset.” (Kansanedustaja)

15. ”Järjestöillä varmaan on roolina informaation välittäminen ja eri näkökulmien

tuominen tuonne päättäjätahoille. Myöskin se ihmisten kokoon kutsuminen ja se tiedon vaihdon aikaan saaminen, mutta se asian esillä pitäminen ja informaation välittäminen ois varmaan heidän roolinsa.” (Asiantuntija)

16. ”No sitä minä en näe kovinkaan korkeaksi, että mielipiteen muokkausta voi siltä puolelta tapahtua, mutta hyvin helposti ylimapuvaa se järjestöjen mielipidemuokkaus.” (Kansanedustaja)

17. ”tää maailmapyörii markkinavoimien varassa. Vain taloudellisen hyvinvoinnin, taloudellisen tuloksen jälkeen on mahdollisuus hyvinvointia jakaa. Ja se tapahtuu tuotanto teollisuuden ja muut kautta, elinkeinoelämän, bruttokansantuotteen kasvattaminen. Sehän ilman muuta jokaisen päättäjien tavoitteena, että tuottoa tulis mahdollisimman paljon, että olis mitä jakaa. Silloin jos numerot selkeästi näyttää, että joku kyseinen päätös on tuotantoelämää liika rasittava, niin silloin sitä ei tehdä. Tai se, ne päätökset, jotka tulee tällä lailla kuormittaa tuotantoelämää, niin ne tehdään samassa vauhdissa, mitä kilpailijamaatkin tekevät. Silloin se ei haittaa, vaikka se tuotanto ois kuinka raakasti rasitettu kaikille maksuilla, jos se on kaikkialla muuallakin maailmassa samalla lailla tehty, niin silloin kuluttajat sen maksaa loppu kädessä aina.” (Kansanedustaja)

18. ”meille politikoilta tosiaan sanotaan näin et meiltä menee kilpailukyky – teollisuudelta. Sit ei oo vientituloja, ne on niin isoja pelottavia kysymyksiä, ni politikot ei uskalla olla kuuntelematta näiden juttuja. Ja tää on niinku pelottava asia. Ja mä väitän et niinku asiantuntija kuulemisissa, niinku hirveen vahvasti esim. talousvaliokunnassa pelkästään tätä näkemystä: talous- ja vientipoliittista ja näi, eikä nähdä sitä että, mihin maailma on menossa ja tulis toisen tyyppisiäkin kannanottoja.”. (Kansanedustaja)

19. ”Ei me mitään kovin suurta markkinaosuutta Suomen liikennepolttoaineesta olla realistisesti tavoittelemassa, mutta tuodaan kuitenkin omat lisät näille markkinoille.” (Yrityksen edustaja)

20. ”No, yleensä ihan kohtuullisen hyvältä, kunhan ensin saadaan biokaasun syöttötariffi. Eli se auttaa paljo pidempään. Ja kyllähän pitkällä aikavälillä kaikki biokaasu pitää saada hyödynnettyä. Sekä päästö että uusiutuva energia veloitteet tulee tiukkenemaan niin paljon, et ei niistä oikein selvitä, jos ei kaikkia uusiutuva energialähteitä saada

hyötykäyttöön. Mut sitten liikennepuolella näkymät ei ole kovin hyvät. Meillähän ei esimerkiksi ole maakaasutankkausasemia kovin montaa saatikka sitten biokaasutankkausasemia. Ja kaasukäytöstä autokantaakin on hirveän vähän. Eikä nyt äkkiseltään ole näköpiirissä päätöksiä, jolla tää tilanne olennaisesti muuttus.”
(Kansanedustaja)

21. “...se vahvistunut energiateollisuuden vaikutusvalta. Se alko vahvistumaan 90-luvun loppupuolella,... 90-luvun loppupuolella se sai sen tällin silloin kun se ydinenergiaäänestys meni toisin, kun oletettiin silloin vuonna 93. Sen jälkeen se pysy 90-luvun loppupuolella, ne on vahvistanut asemiaan, ne on tehnyt omat strategiansa, ne lobbas läpi sen viidennen ydinvoimalaitoksensa.” (Kansanedustaja)

22. “Mutta kun mennään takahuoneeseen ja kysytään, mitä teollisuus on tähän mieltä se sanoo ettei kannata, niin sen jälkeen mennään ja tehdään toisenlaisia päätöksiä...”
(Kansanedustaja)

23. ”Et kyllähän ministeriön virkamiehillä on hirveen iso valta ja tässä tapauksessa taustataho entinen kauppa- ja teollisuusministeriö nykyinen työ- ja elinkeinoministeriö, niin sen näkökulmahan on aina ollut tää suurteollisuuden näkökulma.” (Kansanedustaja)

24. “Teollisuuden asiantuntijat antavat näkökulmansa, toiveensa näille kolmelle ministerille. Ja pitää sitten luovia teollisuuden tahdon, olemassa olevien mahdollisuuksien, EU:n vaatimusten pelimaastossa.” (Kansanedustaja)

25. “...on varmaan monia syitä, mut yks on jos katsoo eduskunnan koostumusta, niin se on keskivertoa miesvoittoisempi ja hyvätuloisempi. Hyvätuloiset miehet ajaa tyypillisesti tällaista hyvin konservatiivista energiapolitiikkaa, jossa kaikki perustuu energiakulutuksen jatkuvaan kasvuun ja lisäenergian rakentamiseen. Toinen tekijä on se, että kansanedustajat samaistuu tähän poliittisen eliitin projektiin ja kokee, että niille läheiset verkostot ja tukijat on tällaisen vanhakantaisen energiapolitiikan kannalla ja sen takia kansanedustajankin pitää sillä linjalla olla.” (Kansanedustaja)

26. ”...eliitti asioi eliitin kanssa ja omaksuu sen tavat, uskomukset ja tavoitteet. Et jos kansanedustajat puuhaa kaiket päivät yritysjohtajien kanssa ja ay-liikkeen johtajien

kanssa, niin silloin helposti samaistuu näiden tavoitteisiin.” (Kansanedustaja)

27. *“...meillä on taloudellinen ja poliittinen eliitti hyvin yhteen nivoutunut. Että teollisuus ja ay-liike on hyvin ykstumasesi yhdessä poliittisen ja mediaeliitin kanssa ajanut tiettyä linjaa, joka näkyy eniten tässä ydinvoima keskeisessä energiapolitiikassa ja vaihtoehtojen laiminlyömisessä. Ja tämä eliittien konsensus on tehnyt kestävästä energiapolitiikasta hirveän vaikeeta.” (Kansanedustaja)*

28. *“Siis, se johtuu, ehkä jollakin tavalla siitä, että niillä on tiedotuksellinen yliote tällai energiateollisuudella. Ettei saa sitä loukata, ettei se taas mee heikosti, ettei Suomen teollisuuden kilpailukyky heikenny.....Nyt täs vaihees sanotaan, et yhä halvempaa energiaa pitää saada, et ne pysyy täällä ne paperitehtaat, mut eihän ne sillä pysy. Energiahinta on niille ihan marginaalikustannus.” (Kansanedustaja)*

29. *“Me on hirveen halvalla energialla saatu teollisuutta tänne Suomeen mm. metalliteollisuutta ja metsäteollisuutta pysymään, mut jotemkin minusta tuntuu, et me ei nähdä tarpeeksi hyvin tätä tienhaaraa, et nämä joiden elinkaari on selkeästi menossa alaspäin. Jos me vaan jatketaan sitä samaa tukemista eikä päästetä markkinoille muita toimijoita, ne joilla ois paljon innovatiivisempaa juttua sieltä saattas tulla ja maailman markkinat auki, niin me tehdään tosi iso karhunpalvelus tälle yhteiskunnalle.” (Kansanedustaja)*

30. *”ministeriöissä tärkeimmät päätökset tekee työ- ja elinkeinoministeriö, koska energiapolitiikan päätöksenteko kuuluu sille, mutta...Kyllä käytännössä suurimmat toimijat ovat nämä yhtiöt koska ne toimivat markkinoilla, regulaation puitteissa...” (Ministeri)*

31. *”...työ- ja elinkeinoministeri on aika keskeinen tekijä valmistelun kannlata, asioita TEM:ssä tehään ja nykyinen ministeri (Mauri Pekkarinen) on ollut aika aktiivinen energiapolitiikan alueella, että kyllä vaikuttaa merkittävästi siihen, mitä virkamiehet tekee.” (Kansanedustaja)*

32. ”Minkälainen vero tulee maakaasulle? Tuleeko biokaasulle jotain veroa? Jos maakaasun kilpailukyky tapetaan nyt verotuksella, niin sen jälkeen ei enää maakaasun tankkausasemaverkosto kehity eikä luoda sitä pohjaa biokaasun liikennekäytölleäkään.” (Yrityksen edustaja)

33. ”oli hallituksessa ketä tahansa, niin politiikkahan on hyvin samantapaista kumminkin aina. Niin se johtuu hirveästi siitä että, kun todellisuudessa kun sillä eduskunnalla ei oo valtaa niin paljon, niin ne on niitä virkamiehiä jotka siitä päätöksestä vastaa hirveän paljon. Ja mitä kokemattomampi ministeri, niin sitä enemmän se antaa ministeriön virkamiesten viedä....Kyllä minä väitän, et tän allekirjoittaa monet kansanedustajat.” (Kansanedustaja)

34. ”...tää tiedon määrä on niin hirvee iso, niin hirveen paljon ne (ministerit) tukeutuu virkamiehiin.” (Kansanedustaja)

35. ”Tässä liikennebiopolttoaine asiassa. Elikkä siellä on aivan valtavasti tehty aloitteita suurin osa niistä vaan on tuota hylätty ja vielä siten, että eduskunta itse on hylännyt hyvin vähän. Elikkä ne on hylätty ministereiden virkamiesten toimesta. Elikkä se juuri korostaa virkamiesten todellista valtaa ohi kansanedustajien ja ohi ministereinkin, et se on todella kummallinen pürre tässä Suomen järjestelmässä.” (Asiantuntija ja aktivisti)

36. ”Se on erittäin virkamiesvaltaista verrattuna esimerkiksi Ruotsiin. Sillai et se virkamiesvalta ohittaa sen politiikkojen vallan eli ministerit aina nää avain ministerit tämän asian kannalta kääntyy virkamiesten kannalle elikkä virkamiehet kouluttaa poliitikot oman politiikkansa kannalle eli tää virkamiespolitiikka.” (Asiantuntija ja aktivisti)

37. ”Jos vertailee tätä päätöksentekoa, joka tapahtuu TEM:ssä ja sitä mitä tapahtuu eduskunnassa, niin kyllä mä suhtaudun paljon paljon luottavaisemmin TEM:öön kuin siihen, mitä eduskunnasta sattuu pulpahtamaan ulos.” (Kansanedustaja)

38. ”sain siihen (lakiehdotukseen) toistasataa nimeä, et se oli pakko ottaa käsittelyyn, niin se hyvin ylimalkasesti valiokunnassa käsiteltiin. Eli käytäntö on se, että hallituksen esitykset on ne, jotka eduskunnassa käsitellään, eli lainsäädäntöön on hirveän vaikea vaikuttaa mitenkään muuten kuin silloin, kun niitä esityksiä tulee sieltä ministeriöstä. Eli

semmoseen lakiin, joka on tulossa, niin siihen on helppo lisätä jotain sivuun, varsinkin jos on hallituspuolueessa, mutta todellakin uusia aloitteita, niin se on melkein, että seuraavaan hallitusohjelmaan tai sitten saada ministeriö taakse tai kyseinen ministeri.”
(Kansanedustaja)

39. *”No käytännössä vähän lukuunottamatta muutamia asioita ja isommat asiat on ydinvoima periaatepäätös siinä on merkitystä eduskunnalla, mutta yleisesti energiapolitiikassa kyllä hallitus on se, joka ratkaisee.”* (Kansanedustaja)

40. *”määrätietoisella pitkäjänteisellä työllä on saatu siinä tuloksia aikaan..biokaasuautot saatiin aivan vapaaksi tästä käyttövoimaverosta. Ja se oli kuuden vuoden ja kahden lain tekemisen paikka ennen kuin se onnistui. Toisella kerralla piti kerätä yli 150 kansanedustajan nimen lakialoitteen nimen alle.”* (Kansanedustaja)

41. *”Meillä liikaa eduskuntaa sitoutuu ja sitoudutetaan siihen nelivuotiskauteen ja politiikkaan.”* (Kansanedustaja)

42. *”Yksittäisten edustajien halu lisätä uusiutuvaa energiaa on, mutta konkretian tekemisen puute, halu tehdä konkreettisia päätöksiä näyttää olevan vähän liian (ei saa selvää, vähäinen?). No, joskus myöhemmin vaikka, mut ei tällä hetkellä.”* (Kansanedustaja)

43. *”...on paljon sellasta päätöksetekoo missä on keskustelua ja työryhmä valmistelee sitä. Silloin siihen on jonkinlaiset vaikutusmahdollisuudet. Täytyy tietysti muistaa, et ei näihin keskustelutilaisuuksiin kaikkia kutsuta, vaan tietyt tahot vaan. Ja ne ketkä saa sinne kutsun, niin niillä on paremmat vaikutusmahdollisuudet kuin niillä, ketkä eivät ole tilaisuudessa olleet.”* (Yrityksen edustaja)

44. *”...energiaveron oli tällainen kaikille toimijoille yllätys, mitä siellä tapahtu. Ei sieltä valmistelusta tullu mitään etukäteistietoa ja silloin vaikutusmahdollisuudet oli käytännössä nolla siihen päätöksentekoon. Eli siihen on nyt, tai sen kanssa täytyy nyt vaan elää, et liiketoimintaympäristö voi yllättäenkin muuttua....päätöksenteolta toivos pitkäjänteisyyttä.”* (Yrityksen edustaja)

45. *”Sen ministeriön johtaja, se ministeri. Kyl se ministeri on ja tietysti on niin, et niin*

paljon on kaikkia asioita yhtäaikaa käynnissä, et voihan se olla kaikkeen ei kerree keskittyä. Et kyllähän ministeriön virkamiehillä on hirveen iso valta ja tässä tapauksessa taustataho entinen kauppa- ja teollisuusministeriö nykyinen työ- ja elinkeinoministeriö, niin sen näkökulmahan on aina ollut tää suurteollisuuden näkökulma. Ja it kun siin on vielä vaakakupissa vaik ei ajattelis et ne on ostettuja ihmisiä vaan se on se näkökulma, et ne ajattelee niin et se on Suomen kokonaisuuden kannalta parasta et meillä tää vientiteollisuus vetäis tulevaisuudessakin.” (Kansanedustaja)

46. “Sitä luulee, et siis kun me pyydetään asiantuntija, et sitä on moni varmaan liian sinisilmäinenkin, et kyllähän tää totta kai on puolueetonta. Totta kai jos sää tuut pankkiasioista kertomaan Sampo pankin tai Nordean tai OP:n edustajana, totta kai sä kerrot sen edustajan näkökulman, mikä sille firmalle on parasta. Tai yhdellä lailla energiapolitiikassa.” (Kansanedustaja)

47. ”Ja oikeastaan vois ollakin hyvä jos tois ulkomaisia asiantuntijoita tai jos on rahojen haaskuuta tuoda ulkomailta ihmisiä, nini pyytäs lausuntoja ainakin. Siis, mitkä on teillä, esimerkiksi Ruotsissa, mitkä on ollu hyvät ja huonot puolet tässä niiden biokaasuverkon rakentamisessa?” (Kansanedustaja)

48. “Se on vahvasti painottunut niiltä taholta tulevaan tietoon, jolla on rahaa ja vaikutusvaltaa. Jokaisella näillä Fortumeilla on ihmisiä, jotka päätyökseen tekee lobbausta. Tekee hienot brosyirit, hienot perustelut ja sitte taas kansalaisjärjestöt teke suurin pirtein vapaaehtoistyöllä sitä....Eli niiden voimavarat kertoo asioista, ne on niin pieniä, et se helposti näyttää siinä rinnalla siinä, kun Neste Oil puhuu omasta biodieselistään, mitä se sademetsässä tuottaa, niin niinku sillä tutkimuksia pilvin pimein ja toinen on käyttänyt vapaa-aikaansa siihen X tuntia.” (Kansanedustaja)

49. “Tietyst kannattaa muistaa et täs alkuvaihees ajoneuvomäärät on täs alkuvaihees väkisinkin hyvin alhasia (4.47) eli sieltä tankkausasemilta myyntivolyymit on hyvin maltillisia, jolloin tulaan siihen et ne laitosten takaisinmaksuajat on todella pitkiä. Ja siltä kantilta ajateltuna siltä päätöksenteolta toivos pitkäjänteisyyttä. Tiedettäs, mitkä nää liiketoiminta edellytykset on pitkällä tähtäimellä, jotta eri toimijat uskaltas lähteä näihin biokaasuinvestointeihin mukaan.” (Yrityksen edustaja)

50. ”Eli ei ole esteitä tehdä sama kuin monet kymmenet kaupungit Ruotsissa on tehny eli vation tai maakuntien ei tarvii tehdä välttämättä yhtään mitään. Kunnat, ne voi tehdä kaiken. Eli se on periaatteesa helppoo, mutta käytännössä sitten vaikeata.” (Asiantuntija ja aktivisti)

51. ”Mun näkökulmasta, en mä nyt tiedä et kunnat ois sitä hirveesti käyttänyt. Esim niinkuin liikennettäkin niin kyllä kunnilla tietysti on mahdollisuuksia tehdä, esimerkiksi ruotsissa näitä biopolttoaineita ja näitä miljööautoja on edistetty kuntien toimesta aika paljon. Et vois ajatella, et kunnilla ois enemmänkin mahdollisuuksia kuin, mitä ovat pyrkineet käyttämään tähän asti. Jos siitä laajemmin puhutaan niin kunnilla, joilla on vielä energiatuotanto omassa hallinnassaan, niin kuin helsinissä, niin silloin kunnilla on suuri sanavalta siihen, miten energiaa tuotetaan kunnassa.” (Asiantuntija)