

Angelina Korsunova

Encouraging Energy Conservation with 'No Hard Feelings'

A Two-part Analysis of Communication between
Energy Companies and Finnish Households



JYVÄSKYLÄ STUDIES IN BUSINESS AND ECONOMICS 95

Angelina Korsunova

Encouraging Energy Conservation with
'No Hard Feelings'

A Two-Part Analysis of Communication Between
Energy Companies and Finnish Households

Esitetään Jyväskylän yliopiston taloustieteiden tiedekunnan suostumuksella
julkisesti tarkastettavaksi yliopiston Villa Ranassa, Blomstedtin salissa
marraskuun 20. päivänä 2010 kello 12.

Academic dissertation to be publicly discussed, by permission of
the School of Business and Economics of the University of Jyväskylä,
in the building Villa Rana, Blomstedt hall, on November 20, 2010 at 12 o'clock noon.



UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ 2010

Encouraging Energy Conservation with 'No Hard Feelings'

A Two-Part Analysis of Communication Between
Energy Companies and Finnish Households

JYVÄSKYLÄ STUDIES IN BUSINESS AND ECONOMICS 95

Angelina Korsunova

Encouraging Energy Conservation with
'No Hard Feelings'

A Two-Part Analysis of Communication Between
Energy Companies and Finnish Households



UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ 2010

Editor
Tuomo Takala
Jyväskylä University School of Business and Economics
Pekka Olsbo, Sini Rainivaara
Publishing Unit, University Library of Jyväskylä

Cover picture by Alex Samsonov

URN:ISBN:978-951-39-4136-9
ISBN 978-951-39-4136-9 (PDF)

ISBN 978-951-39-4080-5 (nid.)
ISSN 1457-1986

Copyright © 2010, by University of Jyväskylä

Jyväskylä University Printing House, Jyväskylä 2010

"If you realize you have enough, you are truly rich."

Lao Tze, from the book of Tao Te Ching

To my father V.M. Korsunov, with love and appreciation

ABSTRACT

Korsunova, Angelina

Encouraging energy conservation with 'no hard feelings': a two-part analysis of communication between energy companies and Finnish households.

Jyväskylä: University of Jyväskylä, 2010, 213 p.

(Jyväskylä Studies in Business and Economics

ISSN 1457-1986; 95)

ISBN 978-951-39-4136-9 (PDF), 978-951-39-4080-5 (nid.)

Diss.

Even though traditionally efficiency has been viewed as the ultimate solution to energy consumption problems, due to rebound effects it fails to achieve absolute reductions in consumption levels. This study focuses on encouragement of energy conservation in households, which encompasses both efficiency improvements, but also behavioral changes motivated by sufficiency ethics. Household energy consumption belongs to the category of "ordinary" consumption, which is invisible in everyday life, but is estimated to be among the largest when compared to other final energy uses in the EU. In Finland many energy providers have been communicating energy saving advice to households already for a few years. The purpose of the study is to understand how energy providers in Finland perceive communication of energy conservation practices to households. Whether it is a legal matter, a responsibility, or an opportunity - describing this perception, the reasoning behind it and whether it has been successful has important implications for promotion of sustainable consumption. Inspired by the pragmatist traditions, a dual approach (consumer + corporate) with mixed research methods was adopted to accomplish the aim. First, consumer attitudes towards energy conservation were explored in a survey. Second, representatives of energy companies were interviewed in order to explore corporate perceptions on energy conservation promotion. Analysis of the combined data showed that much of the energy conservation communication is aimed at improved customer relationship building, while the effectiveness of energy communication is undermined by a deadlock of factors that reinforce each other, e.g. consumer lack of energy market understanding, resulting lack of interest and lack of timely feedback to households. Thus, in order to make household consumption more sustainable all the barriers should be addressed, while piecemeal efforts of mere advice provision reduce corporate efforts to PR. Despite energy providers' aspirations to become the hub for energy solutions they are not ready to handle it alone: involvement of other actors, and structures for increased cooperation between energy market actors are needed.

Keywords: energy conservation, efficiency, sufficiency, sustainable consumption, Finnish households, energy providers, sustainability marketing, communication.

Author's address Angelina Korsunova
School of Business and Economics
University of Jyväskylä
P.O.Box 35 (MaE)
40014 Finland
E-mail: angelina.korsunova@jyu.fi

Supervisors Professor Hanna-Leena Pesonen
School of Business and Economics
University of Jyväskylä, Finland

Reviewers Research Professor Eva Heiskanen
National Consumer Research Center
Helsinki, Finland
Professor Frank-Martin Belz
Technical University of Munich
Munich, Germany

Opponent Research Professor Eva Heiskanen
National Consumer Research Center
Helsinki, Finland

FOREWORD

Writing a dissertation has been defining me for the last five years. Although I proceeded towards this goal with excitement, there came a point when I started wondering what life will be like afterwards! It is the perfect time for reflection, for looking back to better understand what I hope for in the future. I am grateful for my learning. I am even more grateful to the people who have supported me during this time, opened their doors, their lives and their hearts to me.

I warmly thank my supervisor, professor Hanna-Leena Pesonen, for the wise guidance, kind encouragement and attentive support I received. And most importantly, I'm thankful for the trust, which deeply touched me.

I express my gratitude to Pentti Järvi for the help in initial data collection for the survey. I also thank my opponent research professor Eva Heiskanen and external reviewer professor Frank-Martin Belz for their insightful and valuable comments in the final stages of the dissertation preparation.

It is with much gratitude that I acknowledge the financial support of Jyväskylä University School of Business and Economics that enabled me to present my work at conferences worldwide. I especially thank the Rector of the University of Jyväskylä Aino Sallinen for financial support during the final year. I thank James Collins for a speedy and helpful dissertation language revision.

For heart-warming talks, scientific cooperation & travels, I thank Susanna Horn, my dear coffee-and-cake friend and colleague. I sincerely thank Ari Paloviita and Tiina Onkila who welcomed me into the work environment, provided help, lifted my spirits with cheerful discussions of soft and hard aspects. A special thanks to Minna Kallinen-Kuisma and all my colleagues from Jyväskylä for enjoyable lunches, friendly atmosphere and for the feeling of home!

I am most grateful to my close friends - Vira, Cami, Aliona, Mila - and all others for simply being my friends, and having the guts to ask about dissertation progress even in the darkest of times. Thank you for believing in me, and for making my days bright with your companionship! With a deep sense of appreciation, I thank my friend Milton Marasch for the many encouraging conversations, thoughtful comments and urgent help with the abstract-long title!

Kiitokset Kalevi ja Hilja Vainiolle yhdessä viettämistämme lämpimistä ja ystävällisistä perhehetkistä. Kiitos avustanne ja tuestanne!

Most importantly, my endless gratitude is to my family - the source of my strength and integrity. No words could ever express the deep love and admiration I feel for my parents Tatiana and Vladimir who encouraged, directed and supported me in all ways possible. Thank you for teaching me to dare, to persist and for making me feel so loved. I'm truly happy I could always look up to you as scientists and as my parents. My warm gratitude is to my husband Yaroslav for the loving and perpetual understanding, for doing "the impossible" with a kind smile. Thank you for support and being in my life every day in every way.

Jyväskylä, November 2010
Angelina Korsunova

LIST OF FIGURES

FIGURE 1	Electricity consumption by sector in Finland, 2007. Source: Statistics Finland.....	30
FIGURE 2	District heat consumption in Finland, 2007. Source: Statistics Finland.....	30
FIGURE 3	Electricity consumption in Finland by sectors between 1990-2006. Source: Statistics Finland (adopted from Keinonen 2008).....	30
FIGURE 4	Focus shifts in energy policies in the Nordic region. Source: Tennback et al. 2006.	36
FIGURE 5	Energy conservation as defined in the study.	47
FIGURE 6	Motivation-Opportunity-Ability-Behavior Model. Source: Ölander & Thøgersen 1995; Thøgersen 2008.	52
FIGURE 7	Corporate communication as an integrated framework for managing communication. Source: Cornelissen 2008.....	63
FIGURE 8	Link between corporate strategy and communication. Source: Cornelissen 2008.	69
FIGURE 9	Sources of Pressure for Corporate Environmental Action. Source: Hoffman 2000.	75
FIGURE 10	Levels of Corporate Environmental Management. Source: Pesonen (2003).	82
FIGURE 11	Customer perceived value – difference between all benefits and costs. Source: Belz (2005).	86
FIGURE 12a	The natural case of corporate sustainability. Source: Dyllick & Hockerts 2002 2002.....	91
FIGURE 12b	The natural case of corporate sustainability strengthened by sufficiency-oriented life-style promotion. Source: Dyllick & Hockerts 2002, modified.....	91
FIGURE 13	Geographical distribution of the survey respondents in Finland.....	105
FIGURE 14	Motivation-Opportunity-Ability-Behavior Model. Source: Ölander & Thøgersen 1995; Thøgersen 2008, modified.....	166
FIGURE 15	Corporate risks and benefits of encouraging energy conservation among household consumers in perceptions of energy companies in Finland.	175
FIGURE 16	Lack of background knowledge on energy market in interaction with other factors that create the deadlock of unsustainable energy consumption in households.....	178

LIST OF TABLES

TABLE 1	Average electricity consumption of household per capita for the Nordic region. Source: World Energy Council.	31
TABLE 2	Stakeholder communication: from awareness to commitment. Source: Cornelissen 2008.	68
TABLE 3	Defining basic environmental strategies. Source: Schaltegger et al. (2003) as adapted from Steger 1988.	76
TABLE 4	Classifications of Corporate Approaches to Environmental Issues (modified, adapted from Henriques & Sadorsky 1999).	80
TABLE 5	Competitive strategies. Source: Porter 1999.	83
TABLE 6	Comparison of focal areas in green and conventional marketing in the marketing strategy process. Source: Rex & Baumann (2007).	87
TABLE 7	Characteristics of the survey of Finnish households exploring attitudes, opinions and expectations of Finnish population.	95
TABLE 8	The structure of reporting for survey results according to themes.	97
TABLE 9	Demographic characteristics of the surveyed population.	101
TABLE 10	Geographical distribution of the survey respondents by region in Finland.	105
TABLE 11	Distribution of customers between energy providers identified in the survey.	107
TABLE 12	Response to the question about how current energy provider for the household was chosen.	108
TABLE 13	Cross-tabulation of the energy provider selection and ownership of the living premises.	108
TABLE 14	Customer satisfaction with current energy providers.	109
TABLE 15	Energy bills' payment and means to monitor energy consumption.	110
TABLE 16	Consumers and energy conservation: implementation and practices.	112
TABLE 17	Cross-tabulation for the question about practicing of energy conservation at home with respondents by gender.	113
TABLE 18	Cross-tabulation for the question concerning room temperature monitoring with the type of housing.	114
TABLE 19	Visit of their energy provider's website by the respondents.	115
TABLE 20	Comparing consumer interest to know more about energy conservation in money terms to when simply using a convenient channel for information.	116
TABLE 21	Cross-tabulation of the type of household of the respondent with the question concerning the interest to know more on energy conservation.	117
TABLE 22	Cross-tabulation of payment mode of energy bills with the question about consumer interest to know more on energy conservation.	118

TABLE 23 Current sources of information on energy conservation and information channel consumer preferences.....119

TABLE 24 Attributed responsibility for providing information on energy conservation options to consumers.....121

TABLE 25 Household consumers, interview results (sample table).....126

CONTENTS

ABSTRACT

FOREWORD

LISTS OF FIGURES AND TABLES

CONTENTS

1	INTRODUCTION	13
	1.1 Consumption and its role in the society	13
	1.2 Consumption and happiness	14
	1.3 Too much of a good thing?	15
	1.4 Ordinary consumption.....	16
	1.5 The role of businesses in sustainable consumption	17
2	RESEARCH MOTIVATION, AIM AND DESIGN	19
	2.1 Motivation.....	19
	2.2 Aim	20
	2.3 Research approach and assumptions.....	22
	2.4 Research design and methods.....	22
	2.5 Phases of data collection	23
	2.5.1 Consumer survey.....	23
	2.5.2 In-depth interviews with energy companies	24
	2.6 Additional materials.....	26
	2.7 Structure of the report	26
3	ENERGY SYSTEM AND MARKETS IN FINLAND	28
	3.1 Finnish energy market	28
	3.2 Household energy consumption in numbers	30
	3.3 Potential for savings in households	32
	3.4 The direction of energy policies in Finland and EU	35
	3.4.1 Finland's Climate Change and Energy Strategy	36
4	DEFINING THE CONCEPTS: EFFICIENCY, SUFFICIENCY AND ENERGY CONSERVATION.....	38
	4.1 Energy efficiency.....	38
	4.2 Tackling the rebound phenomena.....	39
	4.3 Dealing with the rebound: current strategies and hopes	42
	4.4 The concept of sufficiency	44
	4.5 Consumption efficiency and sufficiency in the context of households.....	45
5	CONSUMER BEHAVIOR AND FACTORS INFLUENCING ENERGY CONSUMPTION	49
	5.1 Consumer behavior models and their role.....	49
	5.2 Motivation-Opportunity-Ability-Behavior Model (MOAB).....	50
	5.3 Constraining and facilitating factors for energy conservation.....	52
	5.3.1 Motivation domain	52
	5.3.2 Ability domain	55
	5.3.3 Opportunity domain	57

5.4	Facilitated energy conservation in a nutshell	59
6	CORPORATE COMMUNICATION AS A TOOL FOR MANAGING PERCEPTIONS.....	62
6.1	Understanding corporate communication	62
6.2	Managing reputation through communication.....	65
6.3	Communication strategies and channels.....	67
7	CORPORATE ENVIRONMENTAL STRATEGIES AND MARKETING	70
7.1	Perspectives on strategy.....	70
7.2	Strategic thinking as a core competence.....	72
7.3	Environment as a strategic issue in companies – the concept of corporate environmentalism	73
7.4	Corporate environmental strategies.....	76
7.4.1	Competitive environmental strategies.....	81
7.5	The role of marketing in competitive environmental strategy-making	84
7.5.1	Environmental marketing: getting it right and getting it wrong	85
7.5.2	Environmentally and sustainably oriented development strategies.....	88
7.6	Sustainability marketing and the natural case of corporate sustainability	89
7.6.1	Why not social marketing?.....	92
8	ENERGY CONSERVATION IN FINNISH HOUSEHOLDS: THE SURVEY OF ATTITUDES AND EXPECTATIONS	94
8.1	Description of the survey.....	94
8.1.1	Aims and themes of the survey	96
8.2	Limitations and corrections of survey questions.....	98
8.3	Survey results	100
8.3.1	Characteristics of the surveyed population	100
8.3.2	Energy profile and structural conditions	106
8.3.3	Energy habits, awareness and interest levels	111
8.3.4	Information sources and channels.....	118
8.3.5	Attributed responsibility	120
8.4	Summary of the survey findings	121
8.4.1	Demographics	121
8.4.2	Energy consumption: structural conditions, habits and interest to know more	122
8.4.3	Information sources and responsibility of energy industry actors	123
9	COMMUNICATING ENERGY CONSERVATION TO HOUSEHOLDS: THEMES, STRATEGIC ASPECTS AND CHALLENGES IDENTIFIED IN THE INTERVIEWS.....	125
9.1	The interview process.....	125
9.2	The findings from the interviews	128
9.2.1	Energy as a product.....	128
9.2.2	Energy companies.....	132
9.2.3	Household consumers.....	137

	9.2.4 Communication “with no hard feelings”	143
	9.3 Overview of the findings	151
10	DISCUSSION	155
	10.1 Marketing and communication	157
	10.2 Consumer behavior and sustainability	161
	10.2.1 Motivation	161
	10.2.2 Ability	163
	10.2.3 Opportunity	164
11	CONCLUSIONS	168
	11.1 Main results	169
	11.1.1 The outlook of Finnish households: energy conservation is good, but..	169
	11.1.2 The outlook of interviewed energy providers: households need to feel good	170
	11.1.3 Encouraging energy conservation is about relationship building	171
	11.1.4 Households are encouraged to increase their consumption efficiency	172
	11.2 Analytical contributions of the study	174
	11.2.1 The corporate angle and contribution to sustainability marketing	174
	11.2.2 The consumer angle: the deadlock of undermining factors	176
	11.2.3 Achieving energy conservation: efficiency is not enough	178
	11.3 Practical implications and recommendations	179
	11.4 The “fit” and reflexivity as criteria for evaluation in pragmatism inspired mixed methodology research	182
	11.4.1 Assessing the QUAN phase	182
	11.4.2 Evaluation of QUAL phase with inputs from QUAN	184
	11.4.3 Contribution of the mixed research methodology to the study value	188
	11.5 Direction for future studies	189
	REFERENCES	191

1 INTRODUCTION

The birth of sustainable development is usually associated with the year 1987 when the World Commission on Environment and Development published its famous report titled *"Our Common Future"*. This was preceded by a series of thought-provoking publications (such as *"Silent spring"* by Rachel Carson, 1962) and shocking events, e.g. the Bhopal disaster (1984), the discovery of the ozone hole (1985) and the Chernobyl disaster (1986). All these highlighted the universal fact of just how dependant people are on the environment for safe, healthy, and happy living, as well as the consequences of neglecting responsibility for intensive technological development and economic growth. Thus, increased interest in corporate practices and business ethics worldwide contributed to the common understanding of corporate responsibility held by stakeholders. At around the same time, critical writings concerning consumerism and materialist values emerged in the early nineties to balance the scale of responsibility. In fact, the nineties are hallmarked by Alan Durning's book *"How much is enough?"* (1992), wherein he draws attention to our era's skyrocketing consumption and to the fact that it has not increased our personal fulfilment, because since 1957 people have not reported being happier. Durning (1992) argues that the environmental harm of overconsumption calls for *"an ethic of sufficiency"*, and for the establishment of forces against consumption promotion.

1.1 Consumption and its role in the society

In order to understand the reasons for such overwhelming growth in consumption and its power, it is useful to examine the different meanings that consumption has for society. Princen (1999) defines consumption as "material provisioning that permanently degrades material and energy to serve some purpose to the individual or to the group", so that its functional role becomes apparent. One might notice that the overall tone of the definition is rather

sombre and negative, perhaps due to the use of such terms as “permanently degrades”. In any case, a functional view of consumption is related to the notion of serving some function or purpose – satisfying needs and wants. Peattie (1995) emphasizes that other important roles of consumption are, for example, a driver for the economy (supply and demand), an entertainment (daydreaming, planning), a construction of identity (through purchasing choices), a measure of success (through possessions), a reward (“buy one – you deserve it!”) and a sense of power (making the decision what to buy). In addition, consumption is often viewed as hedonistic self-indulgence, experiencing pleasure – either by consuming something, or owning it, or even exercising power to purchase it (Bourdieu 1984). As an extension to this, consumption may also simultaneously turn into a medicine and disease: “retail therapy” and “shopaholics”. Thus, it becomes apparent that consumers do not always “use up” things, even though they buy them – which appears to be rather unacceptable from the sustainable consumption point of view. Some authors bring up the role of consumption as communication (Schaefer & Crane 2005). The essence of this perspective lies in the fact that consumption is often performed in the presence of others (acquaintances, friends) or with others in mind (relatives, friends, etc.) – so, people use consumption as a means to communicate and socialize with each other. As earlier research indicates, consumption is sometimes a code or language of status and taste (Veblen 1934), and the sign value of goods is in focus for consumers (Baudrillard 1999). These are just a few roles assigned to consumption, and many others can be discovered in the literature. Such diversity of consumption’s meanings seems to be the secret of its power. However, even the diversity of consumption’s roles cannot explain why (after a certain point) more consumption does not lead to increased happiness.

1.2 Consumption and happiness

Durning (1991) summarizes the findings of several psychological studies that discuss the main determinants of happiness in life, which do not appear to be related to consumption at all. These determinants are, for example, satisfaction with family life (e.g. marriage), satisfaction with work, leisure and maintenance of friendships. The same thought is developed by Hofstetter et al. (2006) who looked into a large number of happiness studies and, as a result, compiled a list of happiness enhancing activities that had been collected by psychologists, psychiatrists, anthropologists, and other scientists. As a result of the cross-disciplinary insights, the authors offered a list of happiness enhancers with a corresponding relative weight of importance. According to the table, meaningful, happiness enhancing activities are, for example, setting achievable important non-materialistic goals, prioritizing happiness and acting happily, doing skill engaging leisure activities, meaningful work that engages personal skills, having a healthy personality (food, sleep, movement), nurturing spiritual

(religious) self, etc. (Hofstetter et al. 2006). In other words, happiness is much more closely connected to well-being – mental and physical – that are achieved through healthy life-styles, than to consumption of material goods. These ideas are supported through the works of several authors: Max-Neef (1991), Csikszentmihalyi (2000), Jackson (2005) – to name just a few. Even though the idea that the better the economic performance of the country, the more happiness is experienced by the people of the country is rarely questioned, Oswald's (1997) findings indicate that economic progress achieves only a small fraction of extra happiness. However, Oswald (1997) also points to the fact that what matters to individuals is their relative income, thus happiness is also framed by our surroundings. At the same time, the author confirms that, indeed, there is a connection between economic forces and happiness – it is the factor of employment, because the data from different countries indicates that people feel most vulnerable when they are unemployed.

1.3 Too much of a good thing?

Diderot – the French philosopher of the eighteenth century – made a shrewd observation in his writings: “The whole economy of human society is based on one general and simple principle: I want to be happy...” (cited in Hofstetter et al. 2006). Happiness, as a powerful driver, has been used for centuries to direct human behavior. Thus, as soon as it had been recognized that consumption is the driving force of the economy, producers and businesses became closely involved in constructing the field of consumption to satisfy their own interests and have been continuously reinforcing cooperation with governments to make surrounding conditions facilitative for increasing consumption (Sanne 2002). However, as discussed earlier, (beyond a certain point) materialistic consumption does not lead to increased happiness. Many needs are non-material (e.g. affection, participation), and satisfying them with material substitutes leads not only to environmental degradation, but to the degradation of psychological and social well-being (Jackson 2005). Thus, considering that skyrocketing consumption is the hallmark of our era, would it be possible to change the course, and convince people to consume less? How can the values of frugality, modesty, thrift and prudence be revived? Sanne (2002) comments that the establishment of a sense of sufficiency to limit human aspirations has much of a moral ring to it, which might lead to resistance and even indignation. However, people are not just consumers, but also reflecting citizens in the political process, and in this role we all agree that some norms and rules need to be established, even when they interfere with some individual preferences, the obvious examples being smoking and alcohol bans for certain areas/circumstances (ibid.). In other words, the consumption process is not irreversible, it is just the question of what kinds of strategies need to be adopted, and who are the agents for change.

1.4 Ordinary consumption

The discussion on consumption's meanings has its implications. Some social practices in consumption – its cultural meanings, and communication role – are so essential to people that it is difficult to even start tackling them for change, especially when such large-scale societal changes are necessary. However, other types of consumption (the less conspicuous ones) are easier targets. In fact, day-to-day “ordinary” consumption is not oriented towards individual display and therefore might have less meaning for people. Ordinary consumption is shaped by convenience, habit, social norms, and institutional contexts (Shove 2003). Our own everyday consumption is usually invisible even to ourselves, let alone to other people. This sort of consumption only becomes visible through utility and maintenance bills: water payments, electricity, and insurance payments. Jackson (2005) observes that even if people do change their electricity or gas supplier, their motivation is usually not connected to the improvement of social standing. Thus, it seems rather straightforward that in the absence of additional consumption meanings, people would willingly try to lessen their ordinary consumption in order to decrease household expenses. Could this be a promising beginning on the challenging path to sustainable consumption?

Unfortunately, the situation is complicated by the fact that most ordinary consumption is indirect consumption, shaped by other significant consumption decisions, such as the size of one's house, the number and type of household appliances, plumbing and faucets choices, etc. These significant decisions are often influenced by a conspicuous type of motivation: larger house, indoor jacuzzi or powerful sports car, all indicate a higher social standing, but often result in unsustainable consumption. In other words, ordinary consumption is not important to people in the context of all the other consumption choices one has to consider today. Moreover, several authors (Sanne 2002, Shove 2003, Jackson 2005) indicate that even the choices in the area of ordinary consumption are very much constrained by historical, social, institutional, and even political contexts. For example, the institutional design of the energy service market has a great influence on household energy consumption patterns, while efficient insulation of buildings has a great impact on how much energy is wasted during heating, etc. Socially constructed norms and standards for comfort levels, convenience and the notion of cleanliness, all influence our consumption levels of energy, water, and generated household waste (Shove 2003). In summary, the image of the rational and willing consumer is rather ghostly: no matter how conspicuous or ordinary the consumption, consumers often find themselves “locked into” unsustainable patterns. It is no secret that the lock-in is blamed on businesses that successfully influence both governments and consumers to create structures – national, societal and cultural – to promote consumption.

1.5 The role of businesses in sustainable consumption

There is much controversy around the role of businesses in sustainable consumption. The conventional view tells us to perceive all sustainable business initiative with a skeptical eye and mind, watching out for defensive public relations actions. On the other hand, the majority of scientific conferences in the field of sustainable consumption emphasize the importance of cooperation between the government and corporate world for effective promotion of sustainability. Moreover, some authors discuss the specific contributions that businesses are able to make. For example, Michaelis (2003) highlights at least three types of changes towards sustainable consumption where businesses have a distinct role to play: development of new technologies and practices; changes in the economic and legal incentives that shape both production and consumption; and changes in the values and discourses that shape the culture of business, government, the media, and civil society.

It is true that promotion of eco-efficient technologies and innovations has traditionally been recognized as an area where businesses can play a very significant role. The experience of businesses on technological innovation is extensive, as well as their understanding of how technological and associated social changes proceed – the history of marketing is clear proof of that. Michaelis (2003) notes that all technological changes require behavioral change somewhere along the life cycle, which may very well be use, maintenance, or disposal phases. Thus, technological changes induce the changes in consumption patterns. Meanwhile, businesses have been quite successful in communicating and promoting the necessary changes to adapt consumers to the new technology. For instance, air conditioning systems, besides their main function, have pushed many people to change their habits related to airing the rooms, using different natural means to keep cooler, such as creating naturally shaded areas in the terraces, etc.

Changes in the economic and legal incentives that shape both production and consumption assume that the role of the business community would be to be proactive and/or responsive to government incentives, such as eco-taxes or the introduction of alternative metrics of national welfare (e.g. Indicator of Sustainable Economic Welfare). However, as many practitioners point out, currently, most companies just want to comply, and remain “as bad as the law allows”. In fact, sometimes much resistance is generated by the corporate community as the debate around climate change shows. On the other hand, there are other instances where companies have been working together with the government to promote a certain law, as was the case with DuPont’s cooperating in the CFC substance ban through the Montreal Protocol (Reinhardt 2000). Thus, some hope remains that, if feasible, businesses might cooperate and contribute to economic or legal system changes that would prove beneficial for the environment. At the point when some changes have been introduced to the systems, the most prominent role of businesses might be to facilitate behavioral changes within consumers.

Internal values and culture of the companies have a great influence on employees. Michaelis (2003) reports that many companies find that caring for the environment improves employees' motivation and enriches shareholders. Communicating the experiences of making a shift towards sustainable values among employees to society at large is important since these experiences can be a valuable example to the promotion of sustainable consumption among consumers.

In summary, although companies often chiefly interpret sustainable consumption as a concern for sales of sustainable goods, there is room for much wider roles in corporate promotion of sustainable consumption. Understandably, any activities beyond sales are perceived with much skepticism and suspicion. Schaefer & Crane (2005) discuss green marketing activities and conclude that industry is highly unlikely to promote environmentally responsible forms of consumption, which would lead to less consumption and fulfillment of socio-cultural needs through other means than consumption. However, many examples of sustainable businesses exist, especially in the service provision sector. These are, for example, energy optimizing services both for households and businesses, sustainable architecture services aimed at improvement of the design of buildings, car sharing mobility services, and even eco-traveling planning services. In addition, if one examines propositions presented by Michaelis (2003) on the roles of businesses in sustainable consumption, it is possible to identify a common element that defines all the roles: communication. Be it communication related to the acceptance of new eco-efficient technologies, or communication related to the implementation of a new market system or industry structure, or the communication of experiences towards a sustainable corporate culture shift. Corporate communication, which today extends far beyond marketing, has historically proven to be a powerful and effective tool for consumer involvement, interest, and alteration of preferences. Would or could this rich extensive and creative know-how serve to redirect human kind towards sustainability? And is this a strategic matter of ethics, or responsibility, or plain survival in the changing corporate world?

2 RESEARCH MOTIVATION, AIM AND DESIGN

2.1 Motivation

It is precisely the controversy around the idea that businesses might willingly promote sustainable consumption that would actually lead to less consumption that served as the greatest motivation for this study. Usually, the initial response to such an idea is rather disbelieving and openly doubtful. Yet, a few scattered examples exist in different parts of the world; although they may have remained unnoticed, forgotten, or dismissed. A *Plea for Responsible Consumption* was published in 1990 by an apparel company based (at the time) in San Francisco - Esprit. The unexpected advertisement questioned whether current consumption attitudes were healthy and implored people to ask themselves before they buy anything whether it was something they really needed (Durning 1992). Another surprising initiative came from the International Association for Soaps, Detergents and Maintenance Products when they launched *The Washright Campaign* in 2000 that aimed to educate consumers about the use of the right quantity of laundry detergents. The campaign received widespread attention in Europe as it was run simultaneously on billboards (in large cities), national television, and had a dedicated website. Finally, something that many have come across yet not many pay attention to is the advice coming from energy providers on how to save energy and reduce household consumption. For instance, in North America, energy providers used to practice (especially during 70-80s), and sometimes still do, what is termed "demand-side management" - a means to shape the electricity load on the daily or season time horizon on the consumer side (Helynen et al. 2007), while in many European countries (e.g. France, UK, Nordic countries) energy saving tips are generously provided by local energy companies.

Meanwhile, household energy consumption belongs to the category of "ordinary consumption", which tends to score high as opposed to other types of consumption (Southerton 2001). It is estimated that households are one of the

largest final energy consumers in the EU. For example, Salmela & Varho (2006) report that household energy use typically makes up about one fifth of the total final energy consumption in OECD countries. Even though this share might not appear to be significant at first, it is important to remember that levels of electricity use are steadily rising. The main environmental impacts related to energy use are CO₂, SO_x and NO_x emissions due to fuel combustion, and the depletion of natural resources. Interestingly, in many OECD countries relative SO_x and NO_x emissions from industry have not increased or even declined since 1980s, while the relative share from households has increased because it is comparatively more difficult to reduce household emissions (OECD 2002). However, some estimates insist that the potential for improvement is substantial. For example, in the Netherlands, space heating of new houses requires only 40% of what is used for the houses built in the 1960s (ibid.). Other authors, such as Abrahamse et al. (2005) and Linden et al. (2006) emphasize the importance of behavior because households similar in size and equipment selection may sometimes vary by a factor of two when it comes to energy use due to different lifestyles. At the same time, Michaelis & Lorek (2004) see the impacts' reduction of household energy consumption as very difficult to achieve because this kind of consumption is inconspicuous and highly habitual.

2.2 Aim

Environmental impacts of households should not be underestimated, and in the context of the facts discussed it becomes clear that there is substantial potential for the reduction of household energy consumption: both in terms of technical efficiency improvements and behavioral modification. Businesses, on the other hand, have always had a tremendous influence on consumers and have accumulated extensive knowledge about skillful consumer communication. Furthermore, for some time already in the energy sector, many energy providers have been communicating (among other things) energy saving tips and advice to their household customers. This has also been the case for Finland, where the study takes place. Motivated by this seemingly unusual fact, at least for the corporate sector, the overall aim of this doctoral research is to *understand how energy providers in Finland perceive the communication of energy conservation practices directed to their household consumers*. Whether it is perceived as a threat, a responsibility, a legal matter, or an opportunity, understanding this perception and the reasoning behind it has important implications for the potential of corporate promotion of sustainable consumption. For the purposes of this study, energy providers are defined as suppliers of energy in the form of electricity, natural gas, or green power to consumers. In order to achieve the stated aim, two questions developed:

1. How do energy companies understand energy conservation in the context of household consumption?
2. What are the reasons for energy providers to (not) communicate about energy conservation with household consumers? And what are the current communication practices?

In the iterative process of refining questions, interest points, and research approaches it became clear that since communication is a two-way process, it is necessary to take into consideration both of the parties involved. Moisander & Valtonen (2006), for example, assert that consumers and marketers should be studied together, in a dialogue or interaction – since they are participants in the constant cycle of creating meanings, social context, culture and lifestyles. In other words, not only is it important to understand consumer attitudes towards energy conservation, it is also crucial to understand corporate perceptions of consumer attitudes and preferences in the context of energy conservation. After all, both policymakers and energy providers act on observed consumer behavior and on assumptions about the reasons behind it (Salmela & Varho 2006). Comparing and relating consumer attitudes with corporate perceptions of consumers allows a much fuller picture of communication to be constructed than the one-sided approach. In addition, it allows gaps and development points for communication to be identified, so that if corporate communication does in fact include some responsible consumption promotion, this research would have the opportunity to contribute to the improvement of the process or bring to attention the usefulness of corporate experiences. As a result, two further questions evolved to support the main aim:

1. What are the attitudes of household consumers towards energy conservation?
2. How do energy providers perceive consumer attitudes and preferences in the context of energy conservation?

Answering these four questions one-by-one will create a more complete picture of corporate communication to consumers on the subject of energy conservation, help gain an understanding of the motives of the companies, and help discover whether the intended results are being achieved. Understanding these aspects can be important for more effective promotion of sustainable consumer practices within the same industry, and/or for utilizing the experience in other areas of consumption. As described earlier, currently, the role of companies in promotion of sustainability is mostly limited to marketing and sales of more sustainable goods/services.

In addition, this research aims to contribute to the understanding of *sufficiency* – an ethical principle that can be adopted by any person in order to curb the overall consumption during his/her lifetime; to live sufficiently. The contribution is made via the study of energy conservation, which is considered to be the direct application of sufficiency ethics in the area of personal energy consumption. Moreover, since energy is not usually consumed for its own sake,

but as a means for maintaining a certain lifestyle in terms of livelihood, entertainment, food, etc., curbing personal energy consumption actually concerns much wider personal areas of life, and thus offers many more opportunities for applying the sufficiency principle to personal consumption. In other words, the discussion of energy conservation practices raised in this research can serve to uncover a host of issues both from provider and consumer sides that will help to construct what is perceived as a sufficient lifestyle.

2.3 Research approach and assumptions

The research questions developed in an iterative process of refining and modifications in order to achieve the full image of corporate-consumer communication and interaction on energy conservation issues. In order to best understand the process of communication, an interpretative approach was adopted through the framework of symbolic interactionism. The main assumptions of the framework suggest that all meanings are created and modified through social interaction, while “human beings act towards things on the basis of the meanings that these things have for them” (Blumer 1969). The stance of symbolic interactionism justifies the assumption that the final content of communication between energy providers and household consumers is very much influenced by:

- corporate understanding of what comprises household energy conservation; and
- corporate perceptions of consumer attitudes, preferences and needs in the context of energy conservation.

Thus, the research questions have evolved in order to reflect the role of both participants in the process of energy conservation promotion. A significant dimension of symbolic interactionism are knowledge claims of pragmatism (Crotty 1998), which defined the method and design of the research. According to pragmatism, researchers are free to draw both from quantitative and qualitative assumptions, and they can choose and combine the methods, techniques and procedures of research freely in order to best meet their needs and purposes (ibid.).

2.4 Research design and methods

Pragmatism assumes that rather than the methods being important, the problem of the research is crucial, so various methods may be applied to derive the knowledge about the problem (Patton 1990, Tashakkori & Teddlie 1998). According to the research questions, there are two key players involved: household consumers and energy providers, and it is necessary to explore the

attitudes of the former, and perceptions of the latter. Neuman (1994) writes that surveys have traditionally been considered as the most appropriate instrument for exploring self-reported beliefs, opinions, attitudes, and behaviors of a large number of people. On the other hand, exploring implicit corporate perceptions requires more in-depth approach and profound inquiry. Thus, from the pragmatic point of view it makes sense to use a mixed methods strategy of inquiry: quantitative survey for exploration of consumer attitudes, and more profound semi-structured in-depth interviews with energy providers to gain a better understanding of corporate perceptions. Tashakkori & Teddlie (1998) note that one method can help inform and develop another method, and one can be nested within another in order to provide deeper insights for the analysis. In this regard, the results of the consumer survey were used to inform the questions for in-depth interviews with representatives of energy providers, while the final research analysis was performed using combined data from the consumer survey and energy company interviews. In general, Currall & Towler (2003) observe that within the tradition of management and organizational research, qualitative research usually focuses on discovery, while quantitative research on justification. Thus, combining the methods has the potential to make an even greater contribution due to the dual emphasis on discovery and justification.

Creswell (2003) distinguishes sequential and concurrent data collection procedures in the mixed methods research. Concurrent procedure refers to simultaneous data collection, while sequential procedure supposes that methods follow one another. For example, the study may begin with a quantitative method followed by qualitative inquiry that involves detailed exploration of a few cases. This research followed a sequential explanatory procedure, using the quantitative survey as a supportive data source to inform the detailed exploration of corporate perceptions through in-depth interviews. The data obtained were combined to study and explain the process of communication on energy conservation between energy companies and their household consumers.

2.5 Phases of data collection

2.5.1 Consumer survey

The first phase of the empirical work is a survey of Finnish consumers directed at exploring their attitudes towards household energy consumption issues, and perceived importance of different actors in the energy network for consumers. The questionnaires were designed to explore whether Finnish consumers would generally like to reduce energy consumption within their households, independent of the reasoning behind such a reduction. In addition, a whole host of other issues were included in the questionnaires in order to build a fuller picture of Finnish consumers and achieve informative results that would

contribute to subsequent interviews with energy companies. These issues included, for instance: satisfaction with the current energy provider; current channels of information on energy conservation; preferred channels of information; actors that are considered responsible for providing such information; consumer willingness to have more information on energy conservation. It is important to point out that the survey did not test any hypotheses; the intention was exploration and collection of descriptive data on the Finnish population and various aspects of their energy consumption, attitudes and opinions.

The survey was mostly based on multiple-choice questions, with the exception of one open-end question that asked for a brief description of energy saving practices. It was administered during the period: 25.01.2006 – 06.02.2006, and the number of completed questionnaires amounted in total to 477. Quota sampling was used for the survey, with the quotas roughly corresponding to the categorization of households used in energy consumption statistics in Finland. In order to ensure a good response rate it was decided that the best method would be to conduct face-to-face interviews. The interviews were conducted by a group of marketing students who filled out the questionnaires for the interviewed consumers to avoid any confusion. Each student was responsible for interviewing seven (7) households, from which three had to be single households, two households had to be “a couple without children”, and two a “family with children”. This structure roughly corresponds to the population data of Finnish statistics for 2006. The method of quota sampling helped to ensure that all relevant household types were represented in the survey.

Analysis of data was conducted with the help of SPSS software, mostly making use of descriptive statistics and the cross-tabulation function. It is worth emphasizing once again that the purpose of the survey was not to test a hypothesis, but to serve as a source of information on consumer preferences, expectations, and opinions concerning energy conservation and use the findings in the interviews with energy companies in order to achieve deeper insight.

2.5.2 In-depth interviews with energy companies

The second phase of empirical work was based on in-depth semi-structured interviews with the representatives of the energy providers. Only three Finnish energy companies were chosen for interviews because, according to the survey results, over 50% of all respondents were customers of these three companies. In order to obtain a more comprehensive picture, two representatives from each company were interviewed. Since the main area of research interest is communication with household consumers, the interviewees were typically either responsible for the whole household consumer market division, or were extensively involved in communication with consumers on a more practical level (e.g. marketing). The interviewees were mostly part of the high level management team, and were responsible for separate units or departments

within the company. However, due to the differences in company structures and sizes, the job titles of the interviewees vary (the job titles available in Appendix 1). As agreed with the interviewees, their names and names of the energy companies has been kept confidential throughout the research and in reporting.

All in all, six interviews were completed, recorded and transcribed. The interviews were conducted between May and November 2007 due to busy schedules of the interviewees and that energy companies are located in different Finnish cities. Each interview took between one and a half and two hours, with varying questions but the same themes: how communication is understood, the content of communication with consumers, the priorities in communication, how communication had evolved over time, the role of marketing in communication, the content of marketing, how sustainable energy use is understood, efficiency, and sufficiency, etc. The interviews were kept as unstructured as possible, with topics being picked up along the way in order to obtain a better understanding of which themes are prioritized when it comes to communication with households. The task of the interviews was to construct the understanding of how energy companies perceive consumers, how it affects the content of communication to consumers, and, as a result, how energy companies perceive the promotion of energy conservation. Nevertheless, the questions were kept neutral and general to avoid biased responses as much as possible. There were virtually no pre-defined questions for interviews except for a few conversation openers, most questions were formulated along the way to keep the interview flowing. A list of initial general questions is presented in appendix 2. Five interviews were conducted in English, and one in Finnish. All the supporting quotations in the text of the dissertation are in English to facilitate reading.

Transcribed interview texts were examined using the thematic analysis method. This is usually described as a means of seeing by perceiving a pattern or theme in seemingly random information (Sayre 2001). Thematic analysis is based on coding: themes and patterns are found in the data in order to organize and interpret the data. This method relies very much on the ability of the researcher to “sense” themes in the data, therefore the researcher’s role is very influential. For this reason this concern is discussed in more detail at the end of the dissertation with reference to validity of the research. The advantage of thematic analysis is its ability to facilitate the communication of findings to others (ibid.). The essence of the method is in coding of themes, both implicit and explicit, and finally presenting the data to the reader as a set of common themes from different interviews, and interpreting their meaning, as well as the meaning of certain themes that are *NOT* present. The coding was completed using the constant comparative method; that is, categories were built and clarified after reviewing the texts several times, refining, uniting, and sharpening the themes through comparison between one another.

2.6 Additional materials

After the interviews, all energy companies sent additional printed materials to provide some examples of their printed communication with household consumers. These materials were sent upon request and they contain samples of communication to various consumer groups: from energy saving guidebook for children (supplied to local schools) to invoice enclosures and customer magazines containing articles on energy conservation. The purpose, however, was not to compare the extent of the different ways that companies communicate about energy conservation, but to obtain evidence of such communication and study the different means of communication that these companies are using. In other words, the main aim was to gain a deeper understanding of the information acquired through interviews, e.g. exploring what invoice enclosures look like, how explicit are the messages contained therein, etc. All the printed materials received from the companies are listed in appendix 3.

2.7 Structure of the thesis

The report of the research study presented here consists of eleven chapters. The first two chapters introduce the subject of consumption, describe both motivation and need for the research conducted and outline the research process. The latter is discussed in detail in order to create a sense of how research questions were gradually elaborated upon and guided by the main goal of the research. The second chapter also explains how the pragmatist framework of the study directed the adoption of the dual approach (consumer + corporate), and how the methods of the research were consequently chosen to best suit the goal of the study and its research questions. Chapter three proceeds to set the background for the study through a compact description of the Finnish energy system and markets, the share household energy consumption in the total picture, and the potential towards more sustainable energy use in households.

The subsequent chapters (4-7) introduce the key concepts that are continuously employed in the study, as well as the relevant theoretical framework for understanding the outcomes of the study. In particular, chapter four focuses on the concepts of efficiency, sufficiency, and conservation, which are essential for understanding sustainability in the area of energy consumption. Notably, the definition of energy conservation constructed in this chapter is highly important to the main theoretical contributions of the study. Chapter five introduces the framework for consumer behavior when it comes to energy consumption; it deals especially with the factors that promote, support or hinder energy conservation-oriented consumer behavior. These factors are consequently utilized in the analysis of the current conditions for household

energy consumption in Finland, and whether they facilitate energy conservation behavior. Chapters six and seven present theoretical inputs from the corporate perspective; focusing on communication and strategies as important reflections of corporate ways to deal with social and environmental issues. Although separate, these chapters explain how communication and strategy-making are intertwined, and how environmentally-oriented strategies are, in practice, implemented through e.g. marketing. Chapter seven, in particular, introduces the concept of sustainability marketing as one of the concrete corporate means to both operate profitably and contribute to the promotion of sustainable consumption. This chapter also provides an overview of the reasons why many of the environmental marketing efforts have so far failed in terms of the desired profits and/or environmental contribution.

Chapters eight and nine report the findings of the quantitative and qualitative fieldwork. Chapter eight concentrates on the findings of the quantitative consumer survey; providing insights into overall consumer attitudes towards energy conservation, their willingness to learn more about it, their preferences with regards to information channels on energy saving, and their expectations towards the main actors in the energy industry when it comes to information on energy conservation. Chapter nine describes the results of the qualitative study carried out through interviews with the representatives of the participating energy companies. The results are organized around the remaining research questions, so that they touch upon corporate reasoning to promote responsible consumption of energy, corporate perceptions of consumer attitudes towards energy conservation, and corporate understanding of what energy conservation means in the household context.

The later chapters – ten and eleven – combine the results of the quantitative and qualitative findings. Thus, chapter ten represents a combined discussion of all the results in the context of the theoretical framework of the study. The discussion brings forward the fact that environmental communication of energy companies is very much limited by marketing and public relations (MPR) techniques, which reduces it to reputation management, instead of being able to qualify as meaningful efforts in sustainability marketing. Chapter ten also outlines which aspects and factors that have a significant influence on energy saving-oriented consumer behavior are being tackled by energy companies through their current communication. Finally, it addresses the difference in communication that encourages energy efficiency, consumption efficiency, and energy conservation. Chapter eleven summarizes the main results of the research study, outlines theoretical contributions to the areas of sustainability marketing and energy conservation, and discusses the practical implications of the study for various actors within the energy industry in the context of sustainable consumption promotion. The report is concluded by presenting possibilities for future studies in this area.

3 ENERGY SYSTEM AND MARKETS IN FINLAND

3.1 Finnish energy market

Even though the Finnish electricity market was liberalized in 1995, it is still difficult for many consumers to understand how the market operates and what the system is like. The aim of the deregulation was to improve the effectiveness of the energy market and to ensure competition in electricity generation, transmission, and distribution systems (Soimakallio & Manninen 2007). Since 1998 Finnish consumers have been free to choose their energy provider based on economic, ethical, or other reasons. Yet consumers have been rather unwilling to be active in changing their provider, despite the availability of choices (Salmela & Varho 2006).

Once the market became deregulated, it was integrated into the Nordic electricity market, in 1995. The opening of the market to competition and subsequent monitoring was entrusted to the Energy Market Authority (earlier known as the Electricity Market Authority, EMA). The mission of this authority is to supervise and promote the functioning of the electricity and natural gas markets, as well as to establish preconditions for the emission trade (EMA mission statement). The authority recognizes that the electricity market is a challenge for its communication and advisory services, because despite its name, the organization is mainly involved in supervising the activities of electricity and natural gas network businesses that are monopolies. Nevertheless, it is within EMA's responsibility to influence the wholesale and retail electricity market through ensuring network price competition for effective market functioning (EMA annual report 2007).

The price of electricity is determined by the Nordic electricity market through the NordPool exchange. In Nordic climate conditions, this system has the advantage of relying on very different electricity generation structures within the participating countries (Soimakallio & Manninen 2007). Due to the different generation structures and sources the wholesale price of electricity on the Nordic exchange shows considerable fluctuation over the course of each day and hour, which explains the changes in retail prices. On the other hand,

retail prices do not follow closely the daily quotes of wholesale prices. In fact, currently there are very few products on the electricity market for household consumers that would be closely tied to wholesale prices. Instead, the pricing is based on various procurement, pricing, and price hedging strategies of the sellers (EMA annual report 2007). The lack of real-time products is sometimes criticized because it does not allow or motivate consumers to adjust their electricity consumption according to the real price of electricity, so that some might try to consume less when electricity is most expensive. In earlier times (the 1970s) time-of-use tariffs were popular in Finland related to electric heating of houses. Lower rates in electric heating were applied for nighttime and during seasons outside of winter. However, the pricing structure has been changed due to competition, and although time-of-use pricing still exists time differences between day and night have been decreased and sometimes even eliminated because of the small variations in market prices (Helynen et al. 2007).

All in all, the consumer price of electricity is the actual price of electrical energy, its transmission plus various taxes and charges. Consumers are charged separately for their consumption and transmission as the company supplying energy is not always the same as that taking care of the transmission. In this sense, consumers are free to choose their energy provider from any location, while the transmission service depends on where the household is located. In Finland energy taxes are mainly paid by energy producers and energy distribution network owners, then charged on to consumers within the price of electricity. According to EU figures, the price households pay for electricity is at the cheaper end because the state taxes electricity at a quite low level. For instance, taxation amounts to 24% of household electricity bills in Finland, whereas in Sweden it is 37% and in Denmark the corresponding figure is 55% (Arola 2007).

Currently, billing for household customers is based on estimates using such factors as size of household, type of heating and history of consumption as a reference point. It is common that energy bills are paid on a quarterly basis of estimated consumption. The differences between the estimated consumption and the actual usage are balanced out in various ways: sometimes in the subsequent bill, sometimes on a quarterly basis, and sometimes annually. One problem with such a system is that consumers do not receive swift feedback about the changes in their consumption. The information on actual consumption comes much later, and it is most often aggregated data for several months. So, consumers never get to know much about their own consumption and their most consuming electricity appliances/habits. A common state of affairs takes place in other European countries too. For instance, Ockwell et al. (2009) argue that quarterly bills in the UK do not provide the household members with direct feedback of their day-to-day energy consumption, and provides no information on which devices are most energy consuming.

3.2 Household energy consumption in numbers

Industry remains the biggest electricity consumer in Finland – in 2007 its consumption amounted to 53%, while households and agriculture together amounted to 25%, services and public sector about 19%, and the rest (approx 3%) was attributed to transmission losses. However, when it comes to district heat consumption residential buildings score highest with 51%, industrial buildings 9%, and other consumers 31%, the remaining 9% is attributed to network and measuring losses (Statistics Finland 2007). Soimakallio & Manninen (2007) observe that during the last twenty-five years total primary energy consumption by households and transportation has increased only a few percentage points in relative terms, but it almost doubled in absolute terms.

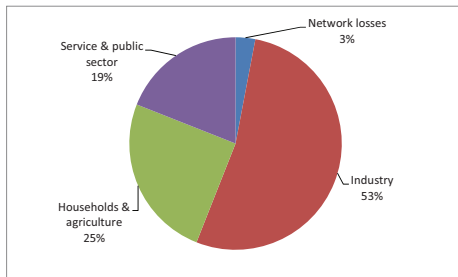


FIGURE 1
Electricity consumption by sector in Finland, 2007. Source: Statistics Finland

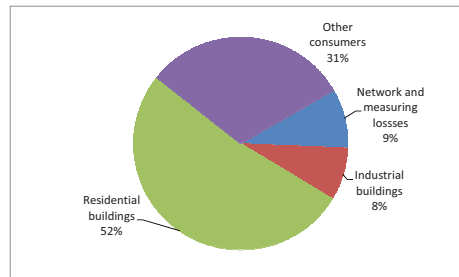


FIGURE 2
District heat consumption in Finland, 2007. Source: Statistics Finland

In the European Union as a whole, between 1990 and 2005 growth in electricity consumption has been particularly strong in the household sector (preceded only by services). Figure 3 presents an interesting perspective on the growth in electricity consumption by sectors in Finland, highlighting the steady growth of household consumption.

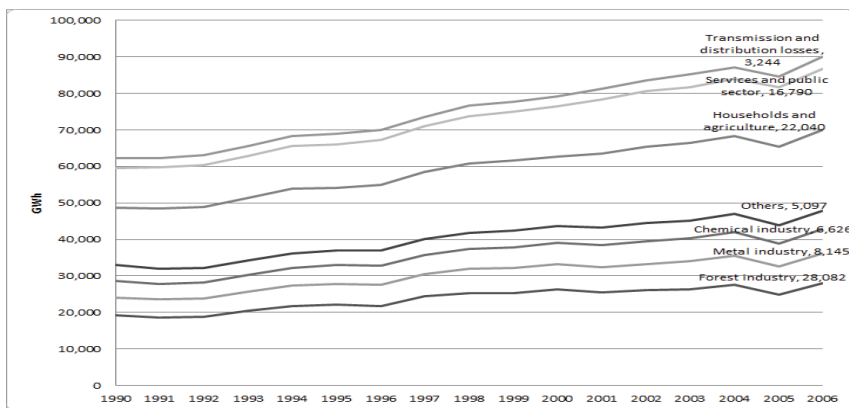


FIGURE 3 Electricity consumption in Finland by sectors between 1990-2006. Source: Statistics Finland (adopted from Keinonen 2008).

Even though there have been considerable technical improvements in the energy efficiency of household appliances over the years, these have been offset by increases in the use, numbers and size of appliances, as well as by their growing variety (Enerdata 2003). Moreover, the main factors for rapidly growing electricity consumption in the household sector are increasing income, living standards, and the trend towards an increased number of single households. All these factors lead to significantly higher demand for household appliances and their widespread use (EEA, Energy Indicators 2007). In general, the highest electricity consumption per capita in Europe is found in Norway, Iceland, Sweden and Finland due to their intensive use of electrical heating, which is priced relatively low because of hydropower electricity production. Lowest values for electricity consumption per capita are in Central and Eastern Europe, while Southern Europe's values are much higher due to the use of air conditioning. For Finland it is projected that average electricity consumption per capita will rise to about 4200 kWh by the year 2020 (Tuomaala & Pihala 2007).

TABLE 1 Average electricity consumption of household per capita for the Nordic region. Source: World Energy Council.

	Denmark	Finland	Norway	Sweden
Average electricity consumption of households per capita in 2005 (kWh/capita)	1939	3871	7416	4605

Heating is a special issue in Finland as the prevalence of electric and oil heating in small houses is often criticized. Such heating methods became popular during 1960-70s and were subsidized by the state through different tax allowances and discounts. The overall goal of this promotion was to help the country industrialize since the use of firewood was very labour intensive (Arola 2007). Today, there is a great variation in heating requirements for different building types. Detached houses, for example, are characterized by very significant heat losses, while in apartment houses heat losses are lower because the outside walls of each apartment are smaller than those of detached houses (Tuomaala & Pihala 2007). Heat losses in apartment buildings could be reduced through upgrades to insulation and windows. Ventilation is another significant source of energy consumption in buildings. Energy efficiency plans in Finland are directed towards major investments in buildings' efficiency. It is currently estimated that by 2016 the savings in buildings could be more than 75% of all energy savings (Panorama of Energy 2009).

3.3 Potential for savings in households

It is estimated that between the years 2005-2015 a shift will occur in the set of most energy consuming household appliances. For example, refrigerators are becoming increasingly energy efficient. On the other hand, it is expected that a large increase in such appliances as high definition TVs, set-top boxes for digital TV reception, wireless modems, broadband Internet connections, and media centers will take place (Tuomaala & Pihala 2007). In addition, the majority of these appliances are never switched off but left in the stand-by mode, which results in a two to three times higher energy consumption than necessary. The average stand-by power per appliance is between 1-10 W, thus it is technically feasible to achieve at least 1 W stand-by power for most appliances (ibid.). Moreover, even better results may be achieved through communication and education about the extent of stand-by power use (up to 8% of household electricity); instead of keeping a PC on stand-by, a consumer would switch it off.

In Finland, of the total household electricity consumption about 14% is used for lighting (Bertoldi & Anatasiu 2006). Lighting is considered to have the biggest electricity-saving potential in households. This is partly explained by a very low penetration rate of Compact Fluorescent Lamps (CFL) and illumination with Light Emitting Diode (LED). For instance, on average only one CFLs per household is found in Finland, while in Germany it is up to six (Bertoldi & Anatasiu 2006). Thus, a huge potential exists in increasing the number of energy efficient lights in households. This may be coupled with raising consumer sensitivity with regard to turning off lights in empty rooms. After all, even an energy efficient bulb is not efficient if there is no one present to benefit from its luminescence.

The use of large household appliances is also an important issue for energy conservation. Besides energy efficient labeling on refrigerators, washing machines, etc. - the placement of these appliances plays a big role in its energy consumption. For instance, insufficient air circulation around refrigerators or their placement near heat sources (e.g. oven or dishwasher) results in much higher electricity consumption. Other aspects, such as ice build-up inside the fridge and its age also contribute to wasted energy. Thus, much depends on the appropriate education of consumers about the energy aspects of large appliances.

Other trends in electricity consumption are the expected rise in the popularity of HVAC systems in residential houses, as well as the more common use of tumble-dryers. These trends only confirm the general growth in income and tendency of people to live in larger dwellings despite small family size. However, if conservation is to be achieved where these appliances/systems are already installed it is important to provide understandable and simple guidelines on energy efficiency possibilities, such as the use of energy efficient DC-motor drives for HVAC systems and A-class dryers, as well as other appliances (Tuomaala & Pihala 2007).

Zacarias-Farrah & Geyer-Allely (2003) insist that promoting household sustainable energy consumption should focus on improving energy efficiency and achieving absolute energy savings. High standards for energy efficiency are necessary, but it is equally important to provide clear information and stimulate changes in consumer behavior towards more responsible use of energy. As the German case with regard to CFLs demonstrates (where the communication campaign was conducted), communication can prove to be an effective tool for change (Bertoldi & Anatasiu 2006).

The same strategy applies to energy consumption in heating, where both energy efficient technologies and change in living habits are needed to achieve conservation (Tuomaala & Pihala 2007). For example, it would greatly improve the situation if many detached houses switched to using heat pumps in the production of heating energy. However, it is also necessary that consumers eliminate wasteful habits, such as heating houses to temperatures over 21C and leaving windows open for days during the heating seasons. Both technological improvement component and consumer behavior change are essential in the complex task of reversing the growing household energy consumption.

In addition, one of the prominent solutions for energy conservation might be demand response, a market-based approach of using demand side electricity resources as a parallel to the supply side resources (generation). In other words, at a certain moment all the electricity used is not necessarily needed, and therefore could be either reduced or re-routed for use at another time (Helynen et al. 2007). The demand response approach assumes that when customers are exposed to real time prices they can choose to respond by shifting their consumption from peak hours of the day/night/season or reducing their total consumption through energy efficiency and/or conservation. There is also the possibility to sell back their loads to the market. It is estimated that the second largest potential for demand response comes from electrically heated houses in Finland (ibid.). It is recognized that demand response improves system security, sustainability (through reduced energy consumption), and offers benefits to all actors: suppliers, retailers (new products and services for customers, new businesses), and customers (ability to react to tariffs and incentives). However, part of the problem is that the benefits are too widely spread between the actors, while another issue is the cost and functionality of required technology, such as latest metering and communications devices.

The technology required for well-functioning demand response implementation is up-to-date metering and communications technology, e.g. automatic meter reading systems (AMR). Advanced AMR systems enable demand response implementation even with small-scale customers. In the existing situation in Finland it is too expensive to apply hourly price response to small-scale customers because the metering of electricity costs is too high. Besides, many billing and metering systems are still too inflexible and unreliable for hourly measurements (Koponen 2005). This author explains that despite the current situation, various projects are running in the area of demand response in Finland, and there is continuous ongoing research. After all,

Helynen et al. (2007) emphasize that remote reading of meters and demand response possibilities are the basis for an energy network's reliability and could create many new services, and even more importantly, they facilitate energy saving and contribute to sustainable consumption.

The general term that describes a more advanced and innovative approach to measuring electricity consumption real-time is *smart metering*. The degree of detailed information that may be provided by smart meters varies depending on the producer and the model, but some may even feature, for instance, detailed data on the consumption of various household appliances in real-time for each individual household consumer. However, the most important advantages of smart meters are probably that they ensure more accurate measurement – at least on an hourly basis – improve real-time two-way communication between energy providers and consumers, and provide consumers with real-time feedback about their consumption, each of which is a great improvement over estimated electricity bills on a quarterly basis. For instance, WWF Finland (2008) advocates that smart meters can help consumers use less energy based on the tailored information they will be receiving from the meters. Moreover, smart metering enables flexible pricing mechanisms, which would also allow consumers to shape their energy consumption according to the least expensive price schemes. According to WWF Finland (2008), smart meters could contribute to the annual electricity savings by Finnish households in the range of 0,5-1,5 TWh. Other international studies cited by WWF Finland (2008) estimate that household savings could reach 5-15% due to well-tailored electricity consumption information that could be monitored, for example, via the Internet.

Meanwhile, Scandinavia in general, and Finland in particular are considered to be the leaders in the deployment of smart metering. A regulation that recently entered into force in Finland (March 2009) requires that utilities should install smart meters in 80% of Finnish homes by the end of 2013. Similar laws are being passed in other Nordic countries. Koponen (2009) describes the main reasons for the regulation as the development and harmonization of the electricity retail market; increasing energy efficiency through hourly data provision to consumers and other interested parties via the Internet; thereby enabling more of the demand response; regulation of network operations. According to Koponen, the need for more dynamic demand response in Finland is ever-increasing due to more distributed and intermittent generation, bigger maximum unit size in the system, dependence of imported electricity and gas, the need to improve market security, and future smart grids. Current legal requirements concerning smart meters in Finland are as follows (based on Koponen 2009):

- hourly measurement;
- two-way communication;
- quick registering of outages;
- one load control output;

- support of simple time-of-use tariffs and controls;
- security of data;
- no mandatory connection to house automation: in cases where customers require data directly from the meter, the meter can be changed but the expenses are incurred by the customer (around 300-400eu per meter change).

3.4 The direction of energy policies in Finland and EU

According to the latest EU energy policy, a focus has been placed on climate, environment, and efficiency as never before. These issues are, however, very closely related to others, such as security of supply. For example, the EU's energy efficiency policy has always been developed in parallel with its policy for renewable energy in order to improve the security of supply (Soimakallio and Manninen 2007). The issue of security of supply gains even more importance in the context of the Nordic region, although it has slightly different meanings depending on the country of the region. In Norway, for instance, the main concern has always been dry years and subsequent lack of hydro resources for power generation at the end of winter, while in Finland security of supply is associated with being too dependent on just one source of gas supply, and especially during the coldest periods in winter when the demand for energy is great.

Despite the differences in meanings and certain national priorities, the overall goals of EU energy policy are similar to the goals of the Nordic region: economic growth, employment, and welfare, which lead to more concrete areas of efficiency, environment, and security (Tennbakk et al. 2006). In fact, these three issues have always been at the heart of energy policies, but the emphasis has migrated from one issue to another over the years. During the oil crisis in the 1970s security of supply was undoubtedly the most significant issue on the agenda, but once the economies became "energized", the infrastructure matured and security of supply was moved aside by increasing concerns about efficiency in the new liberalized market conditions. At the same time, environmental issues gained in importance since the ability of a deregulated market to properly handle externalities was heavily questioned. Today, after blackouts in several European countries, as well as controversy of gas supplies from Russia, security of supply has grown in significance immensely. However, climate concerns are equally essential, hence the next 20-20-20 climate targets adopted in the EU's integrated energy and climate change policy. These ambitious targets concern a reduction in greenhouse gases (by 20%, or 30% - if international agreement is reached), reduction in energy consumption through 20% increase in energy efficiency, and meeting 20% of EU's energy needs from renewable sources (EC Climate Action). Figure 4 illustrates how the focus has shifted from one issue to another in energy policies in the Nordic region.

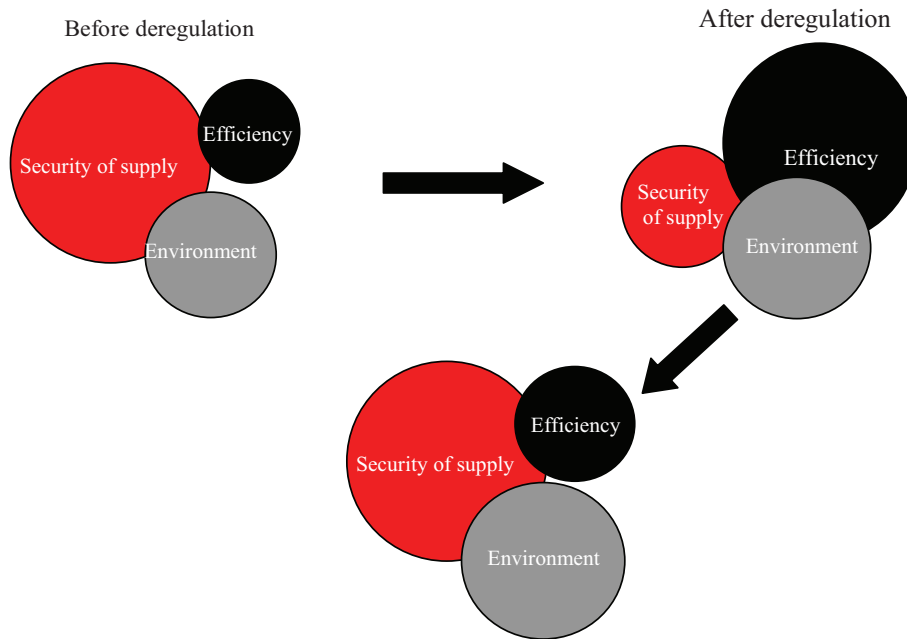


FIGURE 4 Focus shifts in energy policies in the Nordic region. Source: Tennback et al. 2006.

3.4.1 Finland's Climate Change and Energy Strategy

Due to its energy-intensive industry (pulp & paper) and long heating and lighting season, Finland faces a challenge with regard to the goals of 2020. As reported in the official strategy produced by the Ministry of Employment and Economy (2008), Finland's goals in the area of climate and energy are similar to those defined by the EU: environmental sustainability, security of supply, and competitiveness of energy supply (Finland's Climate Change and Energy Strategy 2008). In order to achieve these goals Finland's integrated policy measures will concentrate on energy efficiency and energy saving, as well as on increased production and the use of renewable energy sources. In particular, special focus in the efficiency of energy consumption is placed on housing, construction, and transport. In fact, the strategic objective set by the Government of Finland is to reverse the growth in final energy consumption, hence the broad range of mechanisms and measures that are being developed by the Energy Efficiency Committee (Finland's Climate Change and Energy Strategy 2008). Increased use of renewable energy is considered to be an equally challenging task and requires the involvement of all means possible: wood-based energy, waste fuels, heat pumps, biogas, and wind energy. Security of

supply and reductions in green house gas emissions are to be achieved partly by the expansion of nuclear power in Finland.

To date, Finland's energy efficiency policy for industrial and public organizations has relied on voluntary agreements that started in 1992 and expanded in 1997. For example, one of the targets of the voluntary agreements is to have the majority of industrial and public energy use audited (Soimakallio & Manninen 2007). Since 1990, nine models for industrial audits have been developed by Motiva, the government's agency for promotion of efficient energy use and uptake of renewable sources. In addition, Motiva has developed recommendations for energy saving in homes, and various educational programs, such as the economic driving instruction program (Motiva 2007). Motiva's webpages contain a section for consumers where clear and simple instructions are available for different areas of efficient energy consumption: electricity, heating, water, and even special seasonal hints for winter and Christmas time (e.g. emphasis on Christmas lights' electricity consumption). Presently, Motiva is one of the central sources of information for Finnish consumers on energy saving and conservation.

4 DEFINING THE CONCEPTS: EFFICIENCY, SUFFICIENCY AND ENERGY CONSERVATION

4.1 Energy efficiency

The importance of energy efficiency improvements to sustainability is undeniably high. Even though its role has always been emphasized, lately some criticism has been voiced at the EU-level in relation to the fact that efficiency improvements have not been pursued and implemented as widely and as actively as they were meant to be. The European Parliament openly censured a lack of action in the area of energy efficiency displayed by many Member States, criticizing inadequate implementation of the energy efficiency legislation and a widespread lack of simple information on energy efficiency for consumers at the point-of-action: e.g. when certain appliances break down; consumers moving houses, etc. (Action Plan for Energy Efficiency 2007, EP). Goldblatt (2005) observes that there are many points for improvement along the chain of energy production and use. Those include extraction and treatment of primary resources, generation of primary energy, its conversion and distribution to produce final energy, final energy's conversion to useful energy, and useful energy's transformation into energy services. For the purposes of this research it is more useful to examine energy efficiency within the specific context of households.

Household end-use energy efficiency, involving the reduction of energy needed in the provision of services (such as lighting, heating, cooking) has great, but often neglected, potential for improvement (Goldblatt 2005). In Finland energy efficiency in the household sector is closely connected to energy efficiency of space heating due to local climate features. According to MURE findings (Mesures d'Utilisation Rationnelle de l'Energie), between 1995-2004 the energy efficiency index of households in Finland has actually decreased by 3%.

When it comes to efficiency, it is very important to distinguish between the different meanings and roles assigned to it. Generally, efficiency is simply a ratio between the output and input of the process at a certain period of time.

Thus, *energy efficiency* would mean the amount of energy used to produce some specified useful output through a process, product, or service (Soimakallio & Manninen 2007). In other words, energy efficiency – as a value – can be either high or low, thus energy efficiency can be improved through lower energy input on the condition that the result of the process will not decrease in quality. Improvements in energy efficiency are mainly a technical matter, often a question of newer technology. Herring (2006) observes that improvements in energy efficiency are usually a by-product of other social goals, such as productivity, comfort, monetary savings, or fuel competition.

Furthermore, one should not confuse the terms energy efficiency and efficient use of energy. Soimakallio & Manninen (2007) define *efficient use of energy* as the minimum possible energy used to produce some specified useful output through a process, product, or service. Thus, efficient use of energy usually already assumes improved energy efficiency, but can also depend on other factors – such as behavior – since it is possible to use energy inefficiently even with the most energy efficient equipment (e.g. underfilling an energy efficient washing machine). Linden et al. (2006) identify useful examples of aspects of residential energy behavior that can either be efficient or inefficient, such as turning off lights in unused rooms, regulating indoor temperatures, filling dishwashers, and washing machines before use, putting lids on pots when cooking food at home, and keeping windows closed during the heating season. These examples help the setting of context for household energy consumption as compared to other types of energy consumption.

The distinction between the concepts of energy efficiency (a technical value) and efficient energy use (a process perspective) is essential for understanding the origins of the rebound effect, rebound phenomena, and the “ripple effects” – all of which are connected to efficiency.

4.2 Tackling the rebound phenomena

The dangers of the rebound (also known as take-back, or backfire) effect were recognized as early as 1865, when Stanley Jevons published his book “*The Coal Question*”. In this famous text Jevons warns that the economical use of fuel does not, in fact, lead to reduced consumption. Today, this has been reflected by the fact that despite the policies oriented towards energy – and eco-efficiency, total energy use – emissions of greenhouse gases and other environmental impacts have steadily increased (Hofstetter et al. 2006). Many would argue that, for example, population growth and major income distribution inequality are serious offsetting factors for efficiency achievements. However, increasing efficiency in using energy, labor and other resources has led to significantly improved productivity and reduced unit costs, which only promoted an increase in consumption units (assuming at least constant real disposable income). Hofstetter et al. (2006) explain that when the increase in consumption units is larger than the increase in energy and eco-efficiency it turns into an

“efficiency trap”. In the context of goal-setting for reduced resource consumption and reduced pollution, the efficiency trap is usually termed as the rebound effect in order to best describe the unexpected result of efficiency gains. Herring (2006) observes that while many readily accept that improved transport efficiency leads to increased mileage, only a few accept the same case to be true when it comes to everyday household energy use. Thus, the debate revolves around the magnitude of the rebound effect, and while some authors have found a direct rebound effect to be as high as 65% (Khazzoom 1986), others estimate it to be around 10-20% (e.g. Greene et al. 1999). In fact, much depends on which framework is adopted and on what types of rebound effect are considered. Hertwich (2005) provides an excellent review of different research on empirical evidence of the rebound effect from the point of view of energy economics and of industrial ecology. It appears, for example, that within the framework of energy economics a great deal of empirical evidence and theoretical support identifies only a weak direct rebound effect, while the evidence for indirect rebound effects or macro effects is not conclusive. On the other hand, an industrial ecology framework provides us with interesting insights into other indirect effects that are just as significant as the rebound effect, but which make a positive contribution to sustainable consumption (e.g. positive behavioral spillover). All in all, it is worthwhile taking a closer look at the different perspectives on the rebound phenomena, and examining the different types of rebound effect in order to fully understand its relationship with efficiency, and later, with sufficiency (the notion of “having enough”, and introduced in the sections that follow). Typically, there are five different types of rebound effect identified in the field of energy economics. According to Greening et al. (2000), these are: a direct rebound effect, an indirect rebound effect (income effect and secondary effects), a general equilibrium effect (also known as economy-wide effects), and a transformational effect.

Direct rebound effect is also known as the “substitution effect” or “pure price effect”. The idea of this effect is quite straightforward: as energy efficiency increases, the energy services become cheaper – and, as a result, the demand and consumption of cheaper energy services increase. Most estimates of the direct rebound effect come to the conclusion that it is around 15-20%, although some authors estimate it to be 35-40% – for example in case of space heating and transportation (Haas & Biermayr 2000; Walker & Wirl 1993). For households in Finland cheaper energy would mean that consumers could simply engage in more of the high energy-consuming activities, e.g. greater use of electrically-heated sauna at home (3-4 times a week).

Indirect rebound effect can be subdivided into two different types. The first type of indirect rebound is the *income effect*: assuming that the prices and income remain constant, the reduced price for energy services (as a result of improved energy efficiency) may lead to more money becoming available for spending on other energy-consuming purchases. The easiest example is increased leisure traveling due to more money being available in the family. The second type of indirect rebound is linked to input-output effects, and is

generally aggregated under the term *secondary effects* (Hertwich 2005). Basically, this refers to the situation when reduced prices of energy services are utilized in different industries in the production processes, therefore leading to cheaper prices of various goods - which may result in increased demand for those goods.

General equilibrium effect refers to economy-wide effects. Since it is assumed that both direct and indirect rebound effects lead to changed prices and overall national consumption, this may increase or decrease production in distant sectors (Hofstetter et al. 2006). For example, in fuel markets this effect is sometimes described through the effect of market-clearing price. Hertwich (2005) explains in more detail that if energy efficiency reduces the demand for fuel, the fuel price would supposedly go down. So, the rebound occurs because more fuel would be bought as a result of reduced prices. However, the existence of significant macro-level effects is very much contested. For instance, based on his review of a large number of studies, Hertwich (2005) concludes that the evidence regarding macro effects is not definitive. The difficulty of producing credible evidence is related to various assumptions and oversimplifications that have to be made when modeling macro effects. In addition, many authors point out that the effect of energy efficiency on energy use depends very much on the elasticity of substitution between energy and non-energy inputs, which may vary significantly depending on the input, and overall economic situation.

Transformational effect describes changes in the consumer preferences due to changes in technology. Consumer preferences in turn have a great influence on how different social institutions are organized, and may lead to the rearrangement in the organization of production. It is very difficult to make any estimations about the transformational effect because it is virtually impossible to predict which technology changes may influence consumer preferences, and in what way.

In the above, the rebound effects related to monetary savings due to improved energy efficiency have been described. However, there is more to the rebound effect than just financial stimuli. The phenomenon of *time rebound* is discussed in the writings of Hofstetter et al. (2006) and Hertwich (2005). Due to improved efficiency and technical progress, consumers are able to save time, which also often leads to increased consumption. For example, faster transportation does not result in less time used for transportation because people generally tend to expand the distances traveled.

The perspective of industrial ecology on the rebound effect differs from that in energy economics. Hertwich (2005) summarizes the difference by pointing out that industrial ecology is concerned with a wide range of environmental problems (not just the consumption of energy), so it has to be taken into account that while a technical measure may reduce some environmental pressures, it may also lead to an increase of other environmental problems. The industrial ecology perspective also calls to attention the fact that environmental impacts do not usually cause internal costs, so the reduction of

environmental pressure does not always imply an automatic cost reduction, and, as a result, an immediate increased demand for the service. In essence, Hertwich (2005) reflects on the concern of industrial ecology that in a wider environmental context, the results of any policy measure can result in several indirect effects. For example, the additional income of some individuals may be spent by switching to higher priced organic food, which is a positive outcome. On the other hand, certain policy measures may actually cause increased cost to the consumers, so they would have less disposable income, and may, in fact, have less money to spend on environmental purchases. In addition, sometimes one type of behavioral change connected to improved technology (e.g. purchasing an energy efficient washing machines) leads to the so-called *spillover effects* into other spheres of activity due to increased environmental awareness in general. Spillovers can also be of a technical nature, such as cleaner transportation technology being more feasible as a result of cleaner electricity (Hertwich 2005).

In order to reflect the wide variety of different types of rebound effects, some authors prefer to refer to it as the *rebound phenomena*, which is also the term adopted in this research. Some authors point to the negative connotation of the “rebound” term, and instead advocate the use of a more neutral term, such as *ripple effects* – which also reflects the possibility of a wide variety of different effects. This term addresses changes that come about due to the interaction of technical progress and behavioral changes (Hertwich 2005). The ripple effects will be addressed in this research mainly in connection to the positive behavioral spillover effects.

4.3 Dealing with the rebound: current strategies and hopes

It is often claimed that dematerialization of the economy would enable reduced total energy use, and therefore weaken the rebound effects. Such shift in the economy from energy intensive manufacturing to energy modest services is termed the Factor Four revolution (Goldblatt 2005). However, Herring (2006) summarizes the voicing of the counter-arguments by several authors that certain services and information are surprisingly energy intensive, e.g. transport and tourism. Moreover, the ecological footprint would not be reduced significantly thanks to improved efficiency, since the footprint of a person depends very much on personal consumption in absolute terms. So, even in a knowledge-based economy, if high incomes are spent on increased consumption the dematerialization does not seem to be a viable solution. Røpke (1999) observes that affluent countries today are characterized by significant increase in end-use consumption, which is material and energy-intensive. This becomes evident through such indicators as square meters of housing per person, number of automobiles and distances traveled, air travel, ownership of appliances, spread of air conditioning, etc. In other words, to date

the increases in consumption per capita have outdone the increases in unit efficiency of material and energy use (Goldblatt 2005).

Perhaps the most illustrative example of how improved efficiency has failed to contribute to reduced consumption in absolute terms is provided through the history of fuel efficiency in cars. Herring (2006) observes that technology has a tendency to be used to provide greater levels of service, rather than contributing to reduced consumption. In his writings the author describes how efficiency of cars has improved through such technologies as lightweight materials, turbocharging, and fuel injection. However, these improvements have basically been used to increase the power and performance of cars – increase in acceleration and speed, encouraging drivers to buy more powerful cars and take advantage of the greater speed – whereas the fuel efficiency of these cars is never even considered as a purchase criterion.

All arguments considered, most authors acknowledge the rebound phenomena in relation to efficiency gains. However, there is much debate about the magnitude of the rebound, which is often exacerbated by uncertainty on how to measure it due to the number of assumptions that are made in relation to price elasticity and substitution effects. In addition, when it comes to an indirect rebound effect, other effects, such as the so-called time rebound, technical and behavioral spillover effects are not properly taken into account. Thus, it is difficult to estimate the influence of the numerous ripple effects on sustainable consumption. Nevertheless, all the authors are in accord in stating that improved energy efficiency has the potential to make an important contribution to the advancement of sustainable consumption. So, continued policy support is necessary to promote energy efficiency and eliminate some of the typical barriers; for example, poor perception of the potential of energy efficiency by diverse groups of manufacturers and consumers (Goldblatt 2005). On the other hand, a large number of authors warn against falling into the trap of the “efficiency gospel” (e.g. Durning 1991, Rudin 1999, Sachs 2002, Goldblatt 2005, Princen 2005, Herring 2006, etc.). Efficiency has traditionally appealed to people because of its emphasis on technology as a solution, rather than lifestyles and behavior, which are much less prone to fast and painless change. Thanks to this appeal, efficiency has widely been used by politicians and corporate senior management to highlight the efforts and progress towards sustainability. However, efficiency alone is a short-term solution that proves to be insufficient when faced with the increasing consumption appetites of the growing population. Various solutions are proposed: for example, a combination of efficiency and renewables, carbon taxes, etc. Still, many suggest that sufficiency or conservation ethics is one of the important solutions to support energy efficiency, promote new lifestyles, and the mentality to strengthen sustainable consumption.

Improvements in energy efficiency are a positive and desirable trend, so the issue that needs to be examined closely in relation to rebound phenomena is, in fact, consumption. Hofstetter et al. (2006) nailed the problem with one

question: "It is true that the availability of money, time, security and comfort alone stimulates and directs consumption?"

4.4 The concept of sufficiency

Although the term "sufficiency" seems to remain largely unfamiliar as compared to efficiency, nevertheless it has received some attention in academic writing and in the international agenda. Even in the context of sustainable consumption, sufficiency is often perceived as an extreme – the deep green end – and thus is not readily accepted as realistic and attainable. Young & Figge (2004) summarize this situation by defining sustainable consumption as the "weak form" when compared to sufficiency. In everyday life the idea of sufficiency is usually manifested through notions of moderation, frugality, and thrift, in order to avert self-destruction. Such a notion highlights the subjective and intuitive nature of sufficiency. This has resulted in difficulties conceptualizing the term in academic writing. One of the definitions, for instance, comes from the sourcebook of the European Partners for the Environment (1995-96), wherein the idea of sufficiency is linked to well-being. Thus, sufficiency is defined as "more well-being from less products and services". Furthermore, it is elaborated that sufficiency implies human demands to be limited, and the limiting factor is the notion of "enough", beyond which more wealth no longer translates into more well-being. Huber (1998) defines sufficiency as a "self-limitation" strategy, and insists that sufficiency basically means "doing without". Young & Figge (2004) suggest that sufficiency simply means "living well on less", a voluntary restriction in consumption levels.

A common feature of all these definitions is their focus on well-being instead of "well-having" or growth; the latter being a commonly stated economic goal. Moreover, the philosophical approach to sufficiency is very similar to that commonly applied to the concept of sustainability. Despite the efforts to quantify and specify sustainability, it is recognized that sustainability is a direction of movement, rather than a goal that can be achieved after some time. The same seems to be true for sufficiency; as extensively discussed in the writings of Princen (2003, 2005). In his book "The logic of sufficiency" (2005), the author describes sufficiency as a straightforward idea of being rational: "as one does more and more of an activity, there can be enough and there can be too much". In other words, Princen's definition of sufficiency deals with the notion of restraint. However, the author reminds us that restraint does not equal to abnegation or self-denial, rather it is a voluntary choice of using less than what is possible in exchange for nonmaterial benefits, and in order to secure the same availability in the far term. Elaborating further, Princen (2005) suggests that it is necessary to develop the idea of sufficiency into a principle of sufficiency, which means establishing structures for enactment when the point of "enoughness" has been reached. Thus, much like sustainability, sufficiency should become a principle of management. This also means that when

broadened to a social organizing principle, rules and procedures that regulate collective behavior should be established to protect and enhance conservation values (Princen 2005). In summary, Princen closely connects sufficiency to the notions of restraint and risks, describing it as a rationality based on risk perception and the consequent restraint in consumption to manage the risks. Thus, according to Princen (2005), sufficiency is a set of principles or *an ethic*, sensitive to critical environmental risks, to the needs of management, and self-management, when it is otherwise possible to evade responsibility for such risks.

Thus far, it has become evident that sufficiency is primarily identified as ethics, which Sanne (2002) refers to as the ethics of “living lightly”. Thus, it is precisely the perspective on sufficiency as a special ethics that is deliberately adopted in this research. In order to follow the framework of a *sufficiency-as-ethics* perspective, it is necessary to outline the assumptions of such perspective: these assumptions are a consequence of the combination of sufficiency definitions presented above. Alcott (2008) points out that sufficiency behavior presupposes purchasing power (i.e. the ability to consume) and environmental concerns, as the motivation for reduced consumption. Princen (2003, 2005) reminds us that sufficiency ethics means voluntary restraint (as opposed to forced), long-term oriented thinking and sensitivity (perceptiveness) to environmental risks. In summary, sufficiency ethics requires an individual to:

- have purchasing power,
- be sensitive to environmental risks/concerns in the long-term,
- and therefore, exercise voluntary restraint in consumption.

4.5 Consumption efficiency and sufficiency in the context of households

Finally, it is useful to discuss the differences and interrelatedness of consumption efficiency and sufficiency. Alcott (2008) clarifies that consumption efficiency means behavior that achieves a given level of utility with less input. For example, quenching thirst may be satisfied by boiling water to make tea, and consumption efficiency in this case would be achieved through boiling just the amount of water necessary for, let us say, two cups of tea, instead of boiling a whole kettle full of water. The utility of having thirst quenched would have been satisfied in both cases, but in case of the whole kettle full of water much would be wasted. Going even further, since sufficiency, according to Huber (1998), simply means “doing without”, then sufficiency ethics would mean that the individual has to consider carefully whether only one cup of tea, instead of two, would be enough to quench the thirst. The important notion here is that although an individual would have liked to have two cups of tea, the

understanding that one would be sufficient to quench the thirst prevents that individual from having a second helping.

Similarly, Herring (2006) points to the fact that although the terms energy efficiency and energy conservation are often used interchangeably, they have different meanings. As mentioned earlier, energy efficiency is often a question of technical improvements, newer equipment, and “getting the most” out of every unit of purchased energy. Energy conservation can be a result of improved energy efficiency, but it also implies the reduction in energy consumption through lower amounts or quality of energy services. Soimakallio & Manninen (2007) observe that energy conservation can be understood as a decrease in energy consumption in absolute terms over some period of time. The authors remark that due to the ambiguity of the terms “energy efficiency”, “efficient use of energy” (consumption efficiency) and “energy conservation”, they are all seen in many contexts as synonyms or partly overlapping, which is very true. Nevertheless, it is useful to remember that since energy conservation means consumption reduction over time in absolute terms, it eliminates the possibility of the direct rebound effect associated with pure energy efficiency. Moreover, energy conservation may, and often does, result in lower amounts or quality of energy services, which in turn would mostly likely mean a sacrifice in comfort, or some other dimension in exchange for certain nonmaterial benefits. These two factors bring energy conservation as close to sufficiency ethics in energy consumption as possible. Indeed, the difference seems to be tied to the fact that energy conservation can also be a result of energy efficiency improvements alone. As shown in figure 5, energy conservation simply encompasses it all: the technical side of energy efficiency improvements, behavioral adjustments for efficient use of energy (consumption efficiency), plus an adjustment of consumption appetites despite the potential for a lack of comfort, convenience (sufficiency). Sometimes the importance of the last component is underestimated because energy savings through technical improvements seem to be large enough. However, the significance varies considerably depending whether the person is considering a second cup of tea boiled in the energy efficient kettle, or a second winter ski-trip to Lapland by car, even though it might be a rather fuel efficient one. Besides, Ölander & Thøgersen (1995) point out that consumers probably learn more about being environmentally responsible by repeatedly practicing curtailment behaviors than by one-time efficient technology investments, so that learning would translate into positive spillovers in different spheres of everyday life beyond energy conservation.

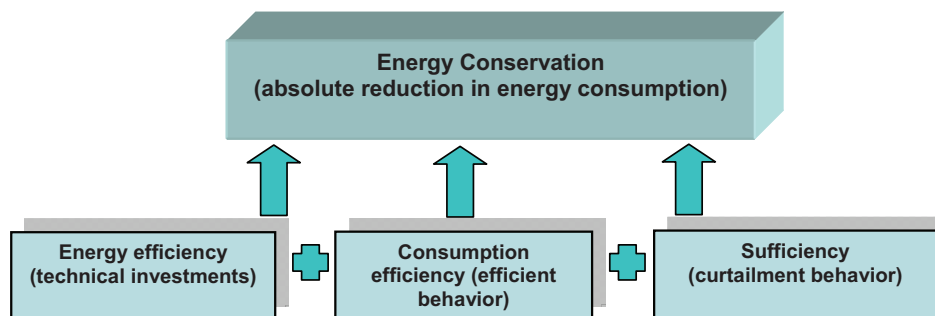


FIGURE 5 Energy conservation as defined in the study.

Furthermore, sufficiency does not exclude energy efficiency; on the contrary, it is rather an extension to efficient energy use behavior. In fact, it is difficult to tell where efficiency ends and sufficiency takes over. For example, it is a well-known fact that an “efficient” temperature indoors is about 21-22C, and anything above that would simply mean a physical waste of heat and inefficiency. Thus, turning down the thermostat in order to lower the temperature to 21C would be exhibiting efficient behavior. On the other hand, if this voluntary decrease in temperature would mean a certain sacrifice in comfort, can this behavior be termed sufficient, as well as efficient? Or, if the indoor temperature was lowered to 18C, would that be exhibiting sufficient behavior alone, and not the efficient kind? Would the temperature of 21C be an efficient and “sufficient” behavior at the same time, or would the “sufficient” temperature need to be even lower since it is not that big of a compromise? Part of the problem is related to the difficulty of drawing the boundary between necessary and conspicuous energy consumption (Soimakallio & Manninen 2007). Consequently, it is also difficult to define what is sufficient because, like conspicuous consumption, it is very subjective and intuitive, while many of the consumption habits are imposed on people by societal standards and such notions, as cleanliness, neatness, and minimum comfort.

The key point of this discussion is to highlight the fact that sufficiency is an important element of energy conservation, because, through sufficiency, principle energy conservation imposes rational limits on consumption, requires absolute reduction in energy consumption, and therefore eliminates the direct rebound effect. Hence, although the personal restraint component of energy conservation is often invisible, it has to exist otherwise all the gains of an energy efficient kettle would be offset by increased numbers of cups of tea per day. On the other hand, it is a huge challenge to try to take into account the indirect rebound effects, as well as all the possible ripple effects that might take place even on the level of one household. Thus, it is important to keep in mind that the task of this research is to study only the promotion of energy conservation in households, which involves energy efficiency, consumption efficiency and notions of personal restraint versus energy efficiency alone. However, it does

not (and it could not) include the full assessment of all the possible ripple effects that may occur as a result of promotions for household to exercise energy conservation.

5 CONSUMER BEHAVIOR AND FACTORS INFLUENCING ENERGY CONSUMPTION

5.1 Consumer behavior models and their role

There are numerous consumer behavior models that attempt to explain why, how, and when consumers tend to act more environmentally friendly or to the contrary. Much depends on the perspective adopted in relation to the consumption, and consequently consumer. For example, one of the earliest models, the model of consumption as a rational choice, portrays consumers as individual decision-makers, whose main driver is powerful self-interest that pushes them to deliberately consider all the benefits and costs before making any purchase or performing certain behavior. As a result, the consumer is a rational utility-maximizer, so, according to the marginal utility logic, consumption will be regulated by reaching a certain saturation point, where the utility of the consumed is no longer greater than the cost of consuming/using it. However, this model has been criticized for its oversimplification of the situation, because there are many more factors that come into play with regard to consumption. For example, Jackson (2004) summarizes that rationality can be overridden by many factors, such as habits (that minimize cognitive deliberation), moral influences (that override self-interest), social factors (that shape individual preferences), and emotional responses (that compete with rationality).

Thus, different models exist emphasizing the role of one or another factor. Cognitive psychology emphasizes how habits and routine define people's consumption patterns, while Schwartz's norm-activation theory (1977) highlights the role of social norms and morals. In turn, Ajzen & Fishbein (1980) developed the theory of reasoned action to show the role of intentions in predicting consumer behavior because intentions are formed from a combination of individual beliefs, cognitive evaluation, attitudes, etc. Giddens (1984) developed structuration theory that portrays consumption as a set of social practices, influenced both by social norms and institutionally created

structures in society. Besides, one may find a great variety of models that integrate different theories to construct the ultimate consumer behavior model that is able to explain it all. Jackson (2004) observes that a useful model would have to account for, at the least, motivation and attitudes, contextual factors, social influences, personal capabilities, and habits.

Jackson (2004) also points to the fact that the role of consumer models is twofold: they provide commonsense frameworks for exploring the different antecedents of behavior (so that points for intervention could be identified), and they provide a theoretical basis for testing the strength of empirical relationships between specific factors. On the other hand, Assael (1998) examines consumer behavior models from the marketing stance, and reminds us that models also serve as a basis for developing marketing strategies. This is related to the fact that behavior is often a result of, e.g. brand perceptions, so marketing is concerned with reinforcing positive perceptions of company brand image. The role of the models appearing in the research presented in this thesis is more about using a guiding framework in the exploration process. Since one of the research questions is concerned with the current practices of energy companies in communicating about energy conservation, a model of environmental consumer behavior could serve as a framework by which to identify the factors that are mostly addressed by energy companies in order to change consumer behavior, and the ones possibly left outside of their communication. Even though the testing of the strength of relationships between specific factors is outside the goals of this research, some conclusions are drawn about the importance of certain factors to energy conservation behavior, based on the literature review and empirical findings from the interviews with marketing representatives of energy companies.

5.2 Motivation-Opportunity-Ability-Behavior Model (MOAB)

Following Jackson's (2004) advice on the criteria for models' usefulness, the MOAB model (Ölander & Thøgersen 1995) appears to be rather comprehensive because it takes into account sets of different factors that influence consumer behavior in the environmental context, namely: motivation, opportunity, and ability. The authors themselves comment that consistency between attitudes and behavior can be expected only if this behavior depends on the person's free choice (*ibid.*). In real life though, personal attitudes and motivation have to be supported by ability (in terms of knowledge and skills), as well as opportunity, which represents external conditions that an individual is not able to influence when trying to behave more environmentally. The MOAB model offers an integrated perspective, as presented in figure 6, while it also provides the advantage of visualizing, which, of the so-called domains, is mostly concerned when energy conservation is being promoted.

In more detail, the *motivation domain* is that which is the most extensive, and consists of a broader set of values and beliefs which that are the basis for attitudes towards specific acts, subjective norms, and perceived control. Subjective norms are social norms that are enforced or expected to be enforced by externally administered rewards and/or punishments (Thøgersen 2006). In other words, subjective norms are internalized social norms. Clearly, certain social norms have great influence on energy consumption patterns, such as socially constructed notions of comfort and cleanliness (Shove 2003). Perceived control refers to how in control an individual perceives him/herself to be in a certain situation related to making environmental choices. For example, an individual might not believe him/herself to be able to utilize a heat pump at home, although that is not necessarily true. Although it is commonly accepted that intention is the best predictor of environmental behavior, both the ability and opportunity domains have a great influence on the final result.

The *ability domain* includes at least three categories: knowledge, habits, and resources. Lack of relevant knowledge and understanding is the most commonly assumed reason for consumers to act inefficiently and irresponsibly. Thus, an information campaign is a commonly used strategy for energy conservation promotion (Abrahamse et al. 2005). Habits also represent an important factor in consumer behavior since they are typically difficult to change, especially if they are a part of family and cultural practices – e.g. keeping windows open for a few hours every day. The resources element refers to different types of resources, for example, financial, time, and cognitive resources. These resources are often interdependent, as lack of time usually leads to depleted cognitive resources (having to make decisions in a hurry), and may prevent consumers from behaving responsibly.

As discussed previously, *external conditions* refer to issues outside the control of consumers. For example, it might be the case in a tenant-landlord relationship, where the inefficient appliances supplied by the landlord prevent the tenant from being as consumption efficient as possible. Even room temperature is often beyond consumers' control: for instance, in most student housing and some apartment buildings.

The arrows in the model highlight the interconnectedness of the domains, and the reinforcing power of behavior in general. Positive or negative experiences of energy saving tend to determine people's attitudes towards it: e.g. disappointment can lead to an indifferent or even negative attitude towards conservation in general. In addition, the so-called principle of reciprocal determinism (Thøgersen 2008) describes how behavior influences attitudes in order to eliminate the discrepancies between stated values and actual behavior. For instance, somebody who has always used conventional energy (more out of habit) may report being doubtful of green energy's reliability for the sole purpose of justifying their somewhat passive behavior in this environmental area.

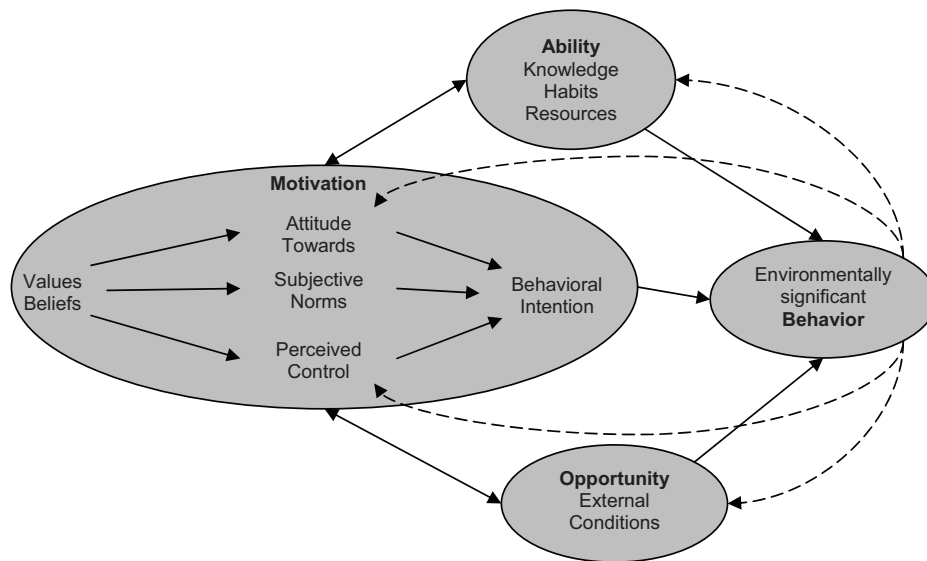


FIGURE 6 Motivation-Opportunity-Ability-Behavior Model. Source: Ölander & Thøgersen 1995; Thøgersen 2008.

5.3 Constraining and facilitating factors for energy conservation

There are various ways to classify factors that influence pro-environmental behavior in general, and energy conserving behavior in particular. Often these factors are divided into those that are technological and behavioral, or external and internal, or even according to the specific origin – such as the consumer, businesses and industry, government, and public policy. Moreover, as Kollmuss & Agyeman (2002) thoughtfully observe, distinctions and hierarchy between the different factors are quite relative and, to some extent, arbitrary. The factors are closely interrelated and interdependent, which makes it difficult to define them precisely. One should definitely keep in mind that the factors discussed below are not strictly defined entities, but rather should always be viewed in the context of related and overlapping factors. In the following sections the factors that influence pro-environmental behavior (especially in the area of energy conservation) are discussed according to the grouping presented in the MOAB model.

5.3.1 Motivation domain

A good example is the concept of *motivation*, which is described as the reason for behavior, a stimulus shaped by direction and intensity (Kollmuss & Agyeman 2002). So, a person could be motivated to practice energy

conservation behavior, but for one person the motivation is his or her wish to slow down climate change, while for other the motivation is financial. In fact, usually one distinguishes between two types of motivation: primary and selective. Many times selective motives actually override primary motivation, so that even if a consumer is primarily motivated to conserve energy, short term financial motives may prevent her or him from doing so, e.g. due to high acquisition costs of a heat pump, or incompatibility of home lamps with efficient light bulbs. In other words, some external factors turn into non-environmental motivations – this is interesting in relation to the discussion on whether motivation is a purely internal factor, and where the border is between internal and external.

This opens up the discussion on external interventions aimed at modifying consumer behavior. It is often assumed that financial rewards are an effective way to motivate consumers to change their behavior. Frey & Jegen (2001), however, describe situations when external interventions, such as financial rewards, undermine intrinsic motivation – this is termed the *crowding-out effect*. If individuals perceive external interventions to be controlling, then both self-determination (feeling over justified) and self-esteem (feeling deprived of a chance to demonstrate personal involvement) are drastically impaired. In other words, sometimes people perform worse if they are paid to do something that they would have done anyway for the common good, which might apply to various environmental issues. Frey & Jegen (2001) report that when intrinsic motivation is high, tangible rewards do not work – instead verbal rewards and recognition are the most effective means to express support and promote further development (e.g. feedback).

It is surprising that environmental *attitudes* are usually found to have a very small impact on pro-environmental behavior (Kollmuss & Agyeman 2002). Guagnano et al. (1995) propose an explanation within the framework of their A-B-C theory, where behavior (B) is a result of A (attitudes) plus C (structural conditions). The authors suggest that the strongest correlation between relevant attitudes and behavior is when the latter is facilitated by structural conditions on the intermediate level. This provides a logical explanation as to why people often do not live up to the attitudes they have expressed (structural conditions are too opposing) and why sometimes people act environmentally even though they might not have any specific pro-environmental attitudes (structural conditions are such that it is too difficult to behave anti-environmentally). Thus, positive environmental attitudes directly influence low-cost (in terms of time, convenience, money, etc.) pro-environmental behavior. The findings of the regularly conducted studies on Finnish energy attitudes (Kiljunen, Yhdyskuntatutkimus 2008) reveal that in Finland positive attitudes towards energy conservation gradually increased for several years in the early 1990s because saving was considered a real virtue during times of economic recession. However, the situation changed in 1994 and attitudes returned to what they used to be in the 1980s, which goes along with the idea that structural conditions promote and facilitate certain attitudes. Moreover, recently (the last

two surveys, *ibid.*) the attitudes towards energy conservation started to strengthen again. One way to explain this relates to increasing awareness and concern of Finnish people with climate change. The national climate strategy has pushed through implementation of the Climate Change Communications Program over the time period of 2002-2007. The goal of this program was to educate and provide information on climate change to people in an understandable manner, as well as to increase preparedness to act on climate issues among citizens (Energy&Enviro Finland 2007). At the same time, nationwide studies have been conducted several times by the Finnish Ministry of Trade and Industry in order to check which issues raise the concerns of the population. One of the latest studies in Finland (March 2007) indicated that climate change was regarded as the most important issue having impact on people's lives, while in 2004 this position was occupied by terrorism. The results of the study of 2007 also show that floods, storms, and heavy rains occupy second place, while the third and fourth positions reflect economic recession, and terrorism respectively (*ibid.*). The results of this study coincide with the study of Finnish attitudes on energy conservation that began to strengthen during 2006-2007.

Social and cultural factors and norms, once they are internalized, turn into *subjective norms* that are definitely influential when it comes to everyday consumer behavior and ordinary consumption. Shove (2003), for example, talks about the three powerful "C"s: comfort, cleanliness, and convenience, which provide explanations to many everyday social practices. The author observes that these three simple concepts are laden with much cultural significance and social meaning, so they determine the ways people behave. For instance, today the notions of comfort and convenience are closely associated with the number of household appliances in the home. As a result, in 1995 ninety-six percent of UK households already owned a freezer (Shove 2003). Moreover, roughly half of the energy consumed by a household goes into maintaining a comfortable temperature at home, i.e. either heating it up or cooling it down. For reasons of climate, cultural norms for households in Scandinavian countries are closely connected to notions of "nice and warm" (Henning 2006) and lighting aesthetics with pools of light and shadow (Throne-Holst et al. 2008). Thus, Norway has one of the highest electricity consumption per capita in lighting, while most of Scandinavian household energy consumption goes towards heating. One should not forget though that cultural and social norms also represent opportunities for conservation. Henning (2006) emphasizes that most Swedes are very fond of fireplaces and stoves, which create a cosy atmospheres through soft light and crackling sounds. So, the author brings forward an innovative idea of using modern bio-pellet stoves in households to keep the main room warmer and cosier, while other rooms could be maintained at lower temperatures, especially since it was shown that Swedish households prefer to keep some spaces cooler than others. Henning concludes by a thought-provoking suggestion that many concepts like "even warmth" at home are artificially forced on consumers through modern technology, while traditional

cultural practices can actually lead to energy conservation and more responsible practices.

According to Ölander & Thøgersen (1995), *perceived control* also represents an important factor for pro-environmental consumer behavior and the overall motivation to act responsibly. In earlier research this is referred to as perceived consumer effectiveness (Kinnear et al. 1974) or locus of control (Newhouse 1991), which is an individual's perception of whether he or she has the ability to bring about change through her/his own behavior. Simply put, the stronger the locus of control the more powerful is an individual's feeling that they are able to make a valuable contribution and that their actions matter. Interesting findings emerged in the study of one region in Norway conducted by Norgaard (2006). Even though Norway is generally a country where nature has a high value in people's lives and is closely integrated with their everyday activities, the population in the studied region appeared to be so passive with climate change issues that the author named this phenomenon "social non-participation". In fact, the reasons for such behavior were identified by Norgaard (2006) as emotional management strategies in response to feelings of guilt, helplessness, and fear caused by the profoundness of the climate change issue. Thus, the locus of control in the Norwegian case seems to be rather weak, which resulted in people feeling helpless, although it went against the Norwegian social norms of being in control and optimistic. Some similarities are apparent in the findings of Salmela & Varho (2006), where Finnish consumers are reported to be perceived as passive with regard to energy issues. However, the reasons identified in this latter study are more related to knowledge and understanding of environmental issues. The interview findings suggest that many consumers in Finland are still confused about the energy market and how it functions, which leads to overall passivity and low interest towards energy issues.

5.3.2 Ability domain

Even though a lack of *environmental knowledge* is a significant barrier for pro-environmental behavior, it does not automatically mean that knowledge alone is a sufficient driver for behavior change. Based on an extensive review of the relevant literature, Kollmuss & Agyeman (2002) conclude that most researchers agree on the fact that environmental knowledge is rarely directly linked to pro-environmental behavior - instead, up to 80% of the behavior is shaped by situational and other internal factors. In addition, these authors reference studies, indicating that even detailed technical knowledge does not appear to promote pro-environmental behavior. On the other hand, cultural values and various incentives (money, etc.) can push people to act environmentally without any environmental concern. This is one reason for imposing taxes on environmentally-significant activities, such as driving, etc.

In any case, in order to increase environmental knowledge, information campaigns are often conducted through mass media, which does result in an increase in pro-environmental attitudes and knowledge (Staats et al. 1996), but

it is not too clear whether it has significant effect on reducing energy consumption. Actually, Desmedt et al. (2009) comment that general tips on energy saving are widely available but that they do not catch much attention. Instead, Benders et al. (2006) discuss the effectiveness of the so-called personalized approach to household energy consumption, i.e. when information is offered to a household based on its specific characteristics. This might include either options for reducing household's energy requirements or feedback about changed behavior, or both. The main advantage of this approach is that households only receive the most relevant information and can be spared, at least partially, from overall information overload. Desmedt et al. (2009) write that giving general information even to very motivated persons who are aware of their energy-related practices is not very effective. Instead, tailored information, such as home energy audits (Winett et al. 1982-1983), providing feedback and especially frequent feedback (Seligman & Darley 1977), combining feedback with goal setting (McCalley & Midden 2002), and other personalized approaches have proved successful in the reduction of households' energy consumption. Overall, based on a large review of intervention studies to reduce household energy consumption, Abrahamse et al. (2005) conclude that a combination of strategies is generally more effective than applying one single strategy. However, it must be mentioned that in most cases it is not known whether households continued to follow energy conservation lifestyles in the long term because most studies performed short-term evaluations.

Many interventions directed at changing consumer behavior are aimed at *habits*. Jackson (2004) observes that ordinary consumption is related to ordinary everyday behavior, which is carried out with very little conscious deliberation – in other words, by habit. Even though habit has the important function of reducing the “thinking effort” – freeing up cognitive resources and therefore facilitating everyday life, once acquired – habits are extremely difficult to get rid of. Since energy related behavior in households belongs to the category of ordinary consumption, it is strongly habitual. Important implications for changing consumer behavior follow from the fact that habits are usually triggered by environmental cues (location, time of day, etc.), internal states (moods), and the presence of typical interaction partners (Verplanken & Wood 2006). Thus, breaking habits is easier when one or more of the triggers are altered. Throne-Holst et al. (2008) point out that “windows of opportunities”, typically, arise when people change dwelling, change workplace, occupation, get married, have children, etc. So, the authors suggest that it might be effective to help people use such moments to reconsider their economic situation, efficiency, and energy consumption. In addition, barriers of an economic nature (e.g. long payback times), or the lack of understanding about energy efficiency opportunities, should be facilitated. Throne-Holst et al. (2008) also emphasize the role of certain cultural barriers in Norway, such as the tendency for large houses that require much heating and lighting – people are hardly willing to compromise on what constitutes their dream. In Finland a similar problem

arises if one considers the strong tradition of going to the sauna at least once a week, which resulted in that most new dwellings (even single room apartments) are built with a personal electrically heated sauna – one of the most energy-intensive items in the household.

Obviously, *personal resources* are important enabling factors for individuals that decide to practice energy conservation. Such resources can include (but are not limited to) money, time, and even to the cognitive resources of the individual (Thøgersen 2008). As already discussed, in many cases financial investments represent a serious obstacle and demotivate consumers from implementing any efficiency improvements. On the other hand, the findings of Desmedt et al. (2009) reveal that the economic impact of energy conservation on household expenses was very interesting to all participants, so that savings would be an important motivator. Other considerations, as reported by Desmedt et al. (2009), include practical issues (whether the changes can be implemented by the owners or external help required), comfort issues (if no discomfort is experienced earlier the motivation to change is weak), and environmental issues (interest in large energy savings and preferably visibility of the changes). Clearly, these findings indicate that resources such as time, skills (practical), and money play an important role in people's lives. As to cognitive resources, Brown (2001) finds that since energy costs are not that high relative to the costs of many other goods and services, people place very low priority on energy issues. Simply put, many people might be unwilling to invest their cognitive resources (think too much) about energy issues because there are many other issues to worry about. Actually, one can easily conclude that the low priority of energy issues is probably the biggest problem that leads only to the strengthening of all the other barriers.

5.3.3 Opportunity domain

The domain of opportunity basically includes various preconditions for consumer behavior, but one should take into consideration that individuals may perceive the same conditions differently, and thus see different opportunities and act differently (Ölander & Thøgersen 1995). One of the categorizations for *external conditions* is provided by Kollmuss & Agyeman (2002) who subdivide them into institutional factors (infrastructures of provision, e.g. public transport availability), economic factors (high first costs, long payback time, etc.), social factors, and cultural factors. Almost all these factors have already been discussed here in one way or another in relation to the internal factors. For example, social and cultural factors have been discussed in connection to subjective norms of the individual, while economic factors have been discussed when considering personal resources and so on. Nevertheless, it is necessary to mention that the overall debate on the role of external conditions, infrastructures of provision, and the so-called *consumer lock-in* occupies an important place in the sustainable consumption literature stream. For instance, Sanne (2002) criticizes a popular statement that any sort of restrictions would violate consumer sovereignty, and points out, that instead,

consumers are often perceived as key persons without questioning the external forces that drive their consumption. The state of the debate can be summarized thus: consumers may be informed and educated to change lifestyles, but not coerced (*ibid.*). Southerton et al. (2004) comment that infrastructures and material organization of spaces represent a serious set of constraints because the kinds of services and provisions available within a town will actually determine the consumption patterns there. In addition, Levett et al. (2003) talk about “choice sets”: when there is a whole collection of interconnected acts of consumption that determine one another, plus a set of behavior that come with them. This is often visible in home electronics where a choice of a certain technology forces consumers to make further compatible purchases and upgrades. In fact, consumption, after all, takes place in the pursuit of practices – playing sports, conducting domestic chores, traveling, and so on. In other words, participation in any practice requires particular forms of consumption as a necessity of the practice, and thus infrastructures of provision play a key part in determining how this practice is conducted (Southerton et al. 2004).

In the context of household energy consumption, the barriers to energy efficiency solutions are often contained in the collective housing structure, even though people own their flats or houses. Decision processes in cooperatives take some time and even a small opposing group may prevent new energy solutions from being implemented – as is reported in the study from Norway (Throne-Holst et al. 2008). On the other hand, the authors note that if the housing cooperative decides positively on energy efficiency improvements, then the effect on all flats is very significant, so this barrier could actually turn into an advantage.

Thus far, various structural, institutional, and social constraints have been discussed as the context for consumer practices. However, Summerton (2004) develops an interesting discussion on additional constraints imposed by the managerial practices of the energy companies. Based on data from the Swedish energy industry, this author argues that consumers’ choices in energy consumption are actually “structured and constrained by mechanisms that include differential access to goods and services, discriminatory practices that link consumer services to consumer income, and more or less institutionalized means for energy providers to choose and/or differentially privilege groups of customers” (p.61). In other words, the author openly criticizes the new managerial practices that became popular after the liberalization of energy market in Sweden: explicit segmenting, ranking, and choosing among different groups of consumers to offer privileged services, or in contrast, fewer alternatives for the poorer segments. Besides, many of the providers started offering allegedly “new services”, which in fact were pre-existing services that providers just wished to make visible to consumers. Summerton (2004) concludes that protecting the interests of “non-lucrative” consumer groups can make a significant contribution to long-term sustainability, and that policy measures should stimulate various projects by energy providers aimed at

energy monitoring, energy efficiency, retrofits, and system conversions in areas with low-income housing.

It is interesting that in Finland, the activities of energy companies have been much criticized in public for excessive profit-seeking and oversized top management bonuses. This image has been prevalent both in the media, and confirmed through regularly conducted Public Opinion consumer surveys on energy attitudes in Finland (Kiljunen 2008). According to the latest survey findings, 87% of respondents believe that increased energy prices are the result of excessive profit-seeking by energy companies. This is, perhaps, one of the reasons why almost 83% of the respondents agreed with the statement that the state should have a large share of ownership in energy companies in order to guarantee the sufficiency and safety of energy provision. Comparing these findings to those of surveys from previous years indicates a trend towards stricter opinions about government steering and a move away from market-oriented steering.

5.4 Facilitated energy conservation in a nutshell

Overall, based on the review of relevant literature on energy conservation it is possible to identify a few key points that seem to be essential to this issue:

- Primarily, people might be motivated to conserve energy, but other non-environmental competing selective motives usually override the primary one, which explains why people often do not “live up” to their declared values (Kollmuss & Agyeman 2002). So, up to 80% of the behavior is actually explained by situation and other internal factors.
- Even though information campaigns remain the most popular means for promoting energy conservation, most of the studies confirm that general information and tips are not effective (e.g. Dulleck & Kaufmann 2004; Desmedt et al. 2009). Instead, all the literature on energy conservation emphasizes the importance of personalized approach (e.g. Benders et al. 2006), tailored information (e.g. Winett et al. 1982-1983), continuous and/or frequent feedback (e.g. Seligman & Darley 1981), combining feedback with goal setting (e.g. McCalley & Midden 2002). A detailed review of the intervention studies for energy conservation is provided by Abrahamse et al. (2005), who conclude that most effective interventions are based on a combination of strategies.
- The abstract nature of electricity and obscurity of the energy market system (Salmela & Varho 2006) all contribute to people generally placing very low priority on energy issues (Brown 2001), which means that they are rather unwilling to invest personal resources in terms of money, time, or effort into energy conservation unless it provides

considerable tangible (financial) or intangible (visibility, social recognition) benefits (e.g. Throne-Holst et al. 2008).

- Social norms and cultural traditions are considered to be powerful factors in any ordinary consumption, and in energy consumption in particular (e.g. Shove 2003; Southerton et al. 2004; Throne-Holst et al. 2008). Interestingly, even though some cultural practices are considered to be rather energy consuming (large houses, extensive lighting, etc.), sometimes rediscovering traditional national ideas about cozy dwelling can provide new opportunities for energy conservation: e.g. using modern bio-pellet stoves in the main room for warmth, while keeping other rooms in the household cooler (Henning 2006).
- Infrastructures of provision are a powerful structuring force of consumption in society today (e.g. Southerton et al. 2004). Basically, physical, economic, social and institutional factors constitute what is often termed consumer lock-in (Sanne 2002). Thus, many authors insist on the importance of policy interventions and the introduction of stricter standards for energy efficiency in order to direct consumption through physical changes. Moreover, some authors emphasize that energy providers also need guidance and monitoring from the governmental side in order to reduce discriminating practices for lower income consumers and stimulate the providers to engage in various projects for energy conservation in low-income housing areas (Summerton 2004).

Finally, it is worthwhile pointing out again that all these factors are closely intertwined with each another, reinforcing the effect of each other. Thus, especially the polemics on consumer rationality and sovereignty should be taken with a grain of salt. For instance, even though research reports that the money saving aspect of energy conservation is very important to consumers (Throne-Holst et al. 2008), others find that rational appeals are not always as effective as emotional appeals to the consumer. This is due to the fact that today consumers are overwhelmed with increasing number of similar brands and products, and overloaded with information coming from a whole variety of different channels, which leads to so-called parallel media consumption and limited cognitive resources being available for information perception (Gröppel-Klein 2008). Therefore, in order to cope with many different issues simultaneously while solving everyday problems consumers often utilize various emotional management techniques to avoid conflicting feelings, stress, guilt, and fear. Kollmuss & Agyeman (2002) describe these coping strategies as selective attention (ignoring non-conforming information), rational distancing from overwhelming problems (attending to more urgent issues), and delegation of responsibility (“being not as bad as...”). Moreover, stronger appeals to consumer feelings of guilt may trigger a defense mechanism, which is termed reactance – a tendency to resist social influences that seem to threaten their freedom (Cotte et al. 2005). In addition, one should not underestimate the

influence of positive or negative experiences of previously performed pro-environmental behavior. As discussed earlier, sometimes these experiences are carried over to other types of consumption behavior, so depending on whether consumers previously succeeded in their environmental efforts or were disappointed by them, they might start acting unconsciously in a more pro- or anti-environmental way based on their emotional experiences. Thus, going beyond rationality and reason, it is useful to remember that “emotions are central to the actions of consumers and managers alike” (Bagozzi et al. 1999).

6 CORPORATE COMMUNICATION AS A TOOL FOR MANAGING PERCEPTIONS

6.1 Understanding corporate communication

Even though the role of corporate communication has changed considerably over the years, it has always been closely connected with corporate image and reputation. Previously, for example, corporate communication was only associated with public relations, but after the 1970s the significance and power of corporate communication began to grow and expand both in terms of external and internal relations. Today it encompasses a whole range of issues, such as corporate design, advertising, crisis management, internal communication to employees, media relations, investor relations, change communication, and public affairs (figure 7). Cornelissen (2008) claims that corporate communication “offers a framework for the effective coordination of all internal and external communication with the overall purpose of establishing and maintaining favorable reputations with stakeholder groups upon which the organization is dependent” (p.5). Dalton & Croft (2003) simply state that corporate communication embraces all aspects of communications that a corporation engages in. One of the most important features of today’s concept of corporate communication is that it addresses the organization as a whole, and deals with presenting it to all its key stakeholders. Cornelissen (2008) also points out that the theoretical basis of corporate communication consists of three concepts: stakeholder, identity, and reputation. Simply put, communication is a means by which to present the corporate identity to stakeholders, and manage its reputation. Stakeholders are the main driver and reason for corporate communication, and although the concept of stakeholder is not directly addressed in this study, it is widely discussed in the literature. Freeman (1984) defines stakeholders as individuals and groups that can affect a company’s performance or that are affected by a company’s actions. While communication makes up a large part of a company’s interaction with its stakeholders, Onkila (2009) emphasizes that the interactivity of stakeholder

relationships is a prerequisite for the existence of the corporation. Perhaps the most important implication of stakeholder theory is that it constantly challenges organizations' existing policies and pushes them to consider a wide range of interests while deriving its corporate and communication objectives (Dalton & Croft 2003).

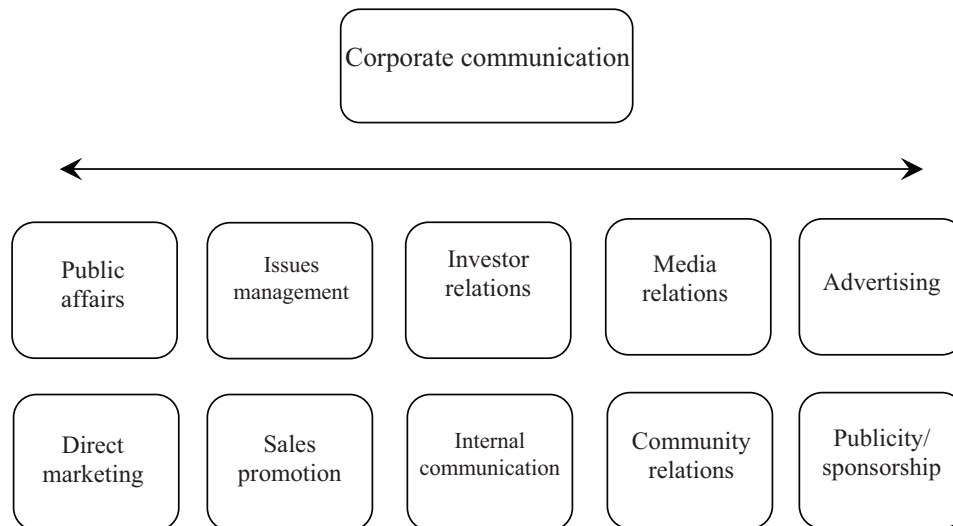


FIGURE 7 Corporate communication as an integrated framework for managing communication. Source: Cornelissen 2008.

In fact, in order to examine the role of corporate communication closely, it is worthwhile exploring the concept of corporate identity in more detail. Hooghiemstra (2000) reviews the literature on corporate identity and summarizes the concept as the way an organization presents itself to its audience. Birkigt & Stadler (1986) previously came to the conclusion that corporate identity is manifested by means of three distinct components: behavior, communication, and symbolism (as cited in Hooghiemstra 2000). Thus, corporate behavior is the most powerful way to support or harm the created identity. However, communication serves to explain corporate actions, providing more insight and smoothening what may seem harsh or unfair. In addition, communication is also used to emphasize positive aspects of corporate behavior, while shifting the negative ones out of sight (Birkigt & Stadler 1986, Van Riel 1995, Hooghiemstra 2000). Moreover, already in 1975, Dowling & Pfeiffer observed that using communication is an instrument by which organizations try to adapt the notion of social acceptability in such a way that it fits with corporate actions and values. The same is true for symbolism: organizations often try to use symbols that are traditionally deemed to have high social legitimacy.

Social legitimacy is central to stakeholder theory; its notion is derived from the norms and values of all of the stakeholder groups involved with an organization (Cornelissen 2008). Based on a review of various definitions, Onkila (2009) summarizes legitimacy to be “a measure of the attitude of society toward a corporation and its activities” (p.31). Legitimacy is very closely connected to corporate reputation since a good reputation (image) ensures acceptance and legitimacy from stakeholder groups, and may serve as a source of competitive advantage because it is difficult to imitate (Cornelissen 2008). Several authors stress the importance of the link between corporate identity and reputation: obviously, the way companies present themselves (identity) influences the way they are perceived in society (reputation, image), but at the same time the way companies are perceived also influences their construction and management of corporate identity (Dutton & Dukerich 1991; Elsbach & Kramer 1996; Morsing 1999; Hooghiemstra 2000). Media certainly plays an essential role in the process of constructing images of companies in the eyes of society, and in that sense companies that operate in more sensitive areas (e.g. chemical industry, oil and energy, etc.) are much more under scrutiny than those that belong to out-of-the-spotlight industries. Corporate responses to media attention vary greatly - from denial and defense, to proactive relationship building with strategic partners such as certain NGOs, etc. Nevertheless, all companies use communication in order to legitimize their corporate identity and adapt/improve their corporate reputation and image in the eyes of the stakeholders. Thus, it appears to be one of the key functions of corporate communication. Campbell (2004) suggests that disclosure of social and environmental information can be used to narrow the gap between society's perception of a company and what it actually does, but that the type and volume of information depend on the most influential stakeholder. Haddock (2005) claims that understanding and communicating the environmental implications of a company's activities can lead to improved risk management because it enables the companies to maintain its reputation with stakeholders, and avoid penalties for negligence or environmental misconduct.

In this regard it is important to note that credibility plays a significant role in the efficacy of communication, and the perceived credibility of the message depends on the perception of source competence, of actual or expected bias behavior, and of the characteristics of the message itself (Aerts & Cormier 2008). Even though the source may sometimes be considered credible, the industry within which it operates has a strong effect on the overall credibility. So, low industry legitimacy may undermine the believability of the messages communicated by individual companies. For instance, Patten (2002) documented that environmental disclosures from industries with high environmental exposure are often perceived as less credible. Aerts & Cormier (2008), therefore, suggest that belonging to a certain industry (with negative or positive connotations) is probably the first observation a person can make about a company, so this impression may overshadow all the consequent information. Insch (2008) notes that the channel of communication is also important for

credibility considerations, so when information is presented in corporate websites, where it has not been comprehensively probed by journalists, it is usually the subject of greater public distrust than other sources. Molina-Murillo & Smith (2009) point out that simple and emotional messages have traditionally been considered more effective in communication and persuasion due to the fact that consumers have limited cognitive ability and a low threshold for boredom, but when it comes to environmental messages, vague statements and the lack of reliable information only leads to reduced credibility and higher skepticism. Thus, the authors argue that credibility gained through more elaborate environmental information (e.g. the results of an LCA study) compensates for the effects of complexity. Moreover these authors suggest that greater interest to certain life stages of the product that may potentially provide benefits to the consumer (e.g. use stage) is a sound reason for providing more detailed environmental information as a means to increase the product's credibility.

6.2 Managing reputation through communication

Dalton & Croft (2003) define corporate reputation as "the sum of the values that stakeholders attribute to a company, based on their perception and interpretation of the image the company communicates and its behavior over time" (p.9). As becomes evident from this definition, the concept of reputation is closely intertwined with the concept of corporate image. Van Riel (1995) describes corporate image as the set of meanings by which an organization is known and through which people relate to it. The important distinction between reputation and image is that reputation requires the historical frame in order to understand how it has been earned, while corporate image is something that may change quite often, and even the record of how often an organization changes its image contributes to its reputation. Cornelissen (2008) makes the difference clear by emphasizing that corporate image is a stakeholder's immediate impression, while reputation is stakeholder's collective representation of past images of an organization. In other words, since reputation and image are perceptions, they are only partly controlled by companies. Interestingly, most corporate actions in communication are based on stakeholder perceptions, thus reputation management, in essence, is about managing stakeholder perceptions.

One of the most commonly used tools for managing reputation is so-called impression management. Traditionally, impression management has been referred to in connection to interpersonal relationships, studying how individuals present themselves to others in order to be perceived favorably (Hooghiemstra 2000). For example, Schlenker (1980) defines impression management as "the conscious or unconscious attempt to control images that are projected in real and imagined social interactions" (p. 6). More recent approaches, though, apply impression management rather broadly - to entities

of people, and organizations. Connolly-Ahern & Broadway (2007) see impression management as “the goal-directed activity of controlling information about a person, object, entity, idea or event” (p.343). The authors highlight their position, that actually all people and corporations engage in impression management because this increases their chances to reach certain goals (whether they are overt or covert). Bromley (1993) observes that impression management can raise ethical issues, because sometimes the motivation behind it is regarded as immoral. However, this is only true if impression management is based on untruthful information, and if it aims to mislead people. There is certainly a fine line within impression management; for example, instead of divulging untruthful information some companies (or individuals) may choose to omit it to make a better impression, which also raises ethical issues. In principle, however, impression management is considered to be a tactical tool that permits managing of reputation in the longer term (Bromley 1993). Moreover, one of its principal roles is facilitating interaction between individuals or organizations, using the good impression both as a self-reassuring and promotional instrument. One way to classify the methods of impression management is to distinguish between defensive and promotional approaches. Bromley (1993) elaborates that defensive methods are used in response to threats to the well-being of reputation (e.g. accusations), while promotional methods attempt to consolidate or enhance the reputation of an organization/person. Promotional methods are aimed at advertising the aspirations and achievements of persons/organizations. In fact, some authors see CSR reporting as one of the promotional tools of impression management (Hooghiemstra 2000).

In today’s media-saturated environment there is an increasing demand for integrating communications to convey consistent messages to interested parties via various communication channels depending on the target audience. Schultz & Kitchen (2000) emphasize that gathering small bits and pieces of information about a company, its products and services, from different sources is overly tiresome, especially considering the fast pace of today. Therefore, there is a need for an integrated approach to produce clear, consistent, and comprehensible messages covering all the different communication activities of a company. So, an integrated marketing communications approach is gaining in strength and popularity. In fact, one of the important landmarks in the history of corporate communication is the evolution of the relationships between public relations and marketing. Until the 1980s marketing and public relations were considered to be rather distinct: marketing was mainly concerned with markets (i.e. customers and consumers), while public relations focused on the rest of the public. Cornelissen (2008) reports that starting in 1980s the rising concern of increasing costs in mass media advertising, and the simultaneous decrease in its effectiveness led to the development of new approaches towards promoting customer loyalty and building brand awareness to increase sales. At this point marketing and public relations evolved into being complementary, and companies increasingly started to apply “marketing public relations” (MPR),

which involves the use of public relations techniques for marketing purposes. Cornelissen (2008) elaborates that the main trick of MPR lies in its cost-effectiveness: basically, public relations techniques allow companies to generate discussion around its own brands, which increases awareness and may result in brand favorability. In some cases, it even makes sense for companies to arouse rather controversial discussions around themselves or their products to stimulate recognition interest of the consumers. Although this technique must be used with caution, it does work in certain cases, such as movie promotion (e.g. *"The Passion of the Christ"* directed by Mel Gibson). Moreover, Dalton & Croft (2003) explain that the use of PR techniques also helps to convert awareness into understanding, explaining complex issues in a clear and cogent way. Thus, they argue that MPR activities are actually very effective in informing and educating stakeholders in a credible way.

6.3 Communication strategies and channels

As mentioned earlier, increased fragmentation and diversity of stakeholder groups is a real challenge for corporate communication. Moreover, the social demands of diverse stakeholder groups sometimes compete and conflict, which only adds to the corporate challenge (Dawkins 2004, Insch 2008). Thus, companies are forced to differentiate between different stakeholder relationships since not all of them are equally important (Clarkson 1995). So, based on perceived stakeholder salience, companies tend to select different strategies of communication with different groups. Some stakeholders only require the regular provision of relevant information, while others should be actively listened to and involved in a constant dialogue. Cornelissen (2008) describes three types of strategies that may be applied to different stakeholder groups in communication. For instance, an *informational strategy* is mostly meant to be one-way communication, in order to keep somebody informed on a regular basis. This strategy creates awareness of organizational activities, and contributes to understanding of the reasons of these activities. Press releases and reports are suitable means by which to implement the informational strategy. However, in order to deepen the understanding of corporate activities more intensive communication is required. This is when organizations use *persuasive strategy* trying to convince stakeholders to accept, e.g. a certain corporate philosophy or values, or change the attitude or behavior of stakeholders. Such strategy relies on more intensive advertising and educational campaigns, and may include the initiation of discussions and meetings with stakeholders. The third strategy, as grouped by Cornelissen (2008), is the *dialogue strategy*. This includes debates between organizations and stakeholders in order to come to a mutual understanding and mutual decisions as opposed to the ones in the strategic interest of the organization alone. The table below (table 2) groups all three strategies according to the intended stakeholder effect, and the means of achieving it.

TABLE 2 Stakeholder communication: from awareness to commitment. Source: Cornelissen 2008.

Stakeholder effects:	Awareness →	Understanding →	Involvement →	Commitment
Tactics	Newsletters; Reports; Memos; Free publicity.	Discussions; Meetings; Advertising and educational campaigns.	Consultations; Debates.	Early incorporation; Collective problem-solving.
Type of strategy	Informational strategy	Informational/persuasive strategy	Dialogue strategy	

In addition, Haddock (2005) explains that, depending on the stakeholder, the type and medium used for presenting specialized information (such as environmental) may differ. For instance, environmental reports are usually of interest to financiers, employees, and public authorities, while what is presented to consumers usually comes in the form of marketing, product labeling, and customer mailings. Adams & Frost (2003), though, comment on the rapid growth of online selling, interactivity, and online reputation management. Thus, Haddock (2005) concludes that the Internet is also a viable means of communicating and stimulating customer interaction in the area of environmental information disclosure by companies.

Sharp (2001) observes that among all channels for communication, the Internet offers the possibility to share an unlimited amount of information with various stakeholders. Moreover, it is universal in a sense that it is suitable both for one-way communication, and for engagement of users in interactive communication. Insch (2008) sees the Internet as the media with minimal barriers to entry, and unlike in other media the information presented online is not always examined closely by journalists, activists, etc. On the one hand, it allows companies to share a lot of information about its activities and the impact it has on the local communities, and therefore influence corporate image and reputation in a positive way (Esrock & Leichty 1998). On the other hand, the lack of scrutiny results in greater public distrust and skepticism towards the reliability of the information (Insch 2008). For example, according to the findings of Cooper (2003), electricity companies in the UK widely practiced selective reporting on the Internet and selective use of links, while also restricting the possible dialogue with actively commenting users by keeping only positive comments online. The author speculates that companies may have chosen another medium for maintaining stakeholder dialogue at the time, and

did not choose to report it on the Internet. Another speculation in the article concerns the development and growth of corporate communication online, which might lead to more open dialogues and less selective information provision. However, Cooper's (2003) findings coincide with those of Insch (2008) from a later study of online communication by electricity retailers in New Zealand. The latter found that most electricity retailers in New Zealand used the information push approach on their website instead of fostering a meaningful two-way interaction.

It is worthy of note that despite the abundant literature on customer-centric orientation of companies today, Haddock's (2005) findings suggest that the main driving force for environmental information disclosure is media pressure rather than consumer pressure per se. Moreover, another provocative implication of the study is that companies may have the need to inform the consumer/public, but it is not necessarily the case that the consumer is interested. In any case, Cornelissen (2008) argues that in order to develop consistent and adequate communication strategies to deal with stakeholder and reputation issues, it is vital that the relationship between corporate communication and corporate strategy is harmonized. Communication in any form should always support corporate strategy, but in that case communication strategies should be factored into the elaboration of corporate strategy by senior management. In addition, the structure of strategy-making needs to be more flexible and less hierarchy-focused, so that the information and initiation of ideas from functional levels (such as corporate communication) can easily reach the corporate level of strategy-making. The dynamic relationships between corporate strategy and communication proposed by Cornelissen (2008) is reflected in figure 8.

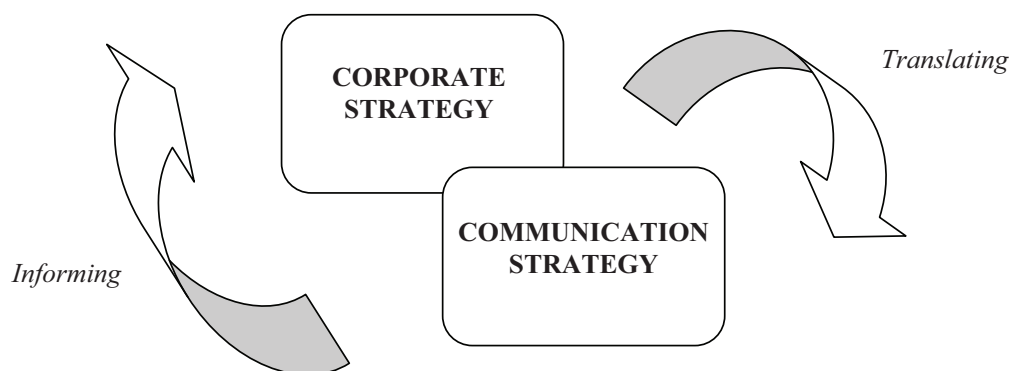


FIGURE 8 Link between corporate strategy and communication. Source: Cornelissen 2008.

7 CORPORATE ENVIRONMENTAL STRATEGIES AND MARKETING

7.1 Perspectives on strategy

The definitions of strategy are diverse and numerous, and it is possible to say that to date there is no universal definition of this term. More often than not strategy is associated with such notions as “plan”, “objectives”, and “pattern”. One of the early definitions was provided by Chandler (1962), “...the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals”. This definition combines the process of strategy formulation and its actual content; an aspect that was later criticized by a number of other authors. Another early definition was developed by Andrews (1971), describing strategy as a rather broad concept: “...strategy is the pattern of objectives, purposes or goals and major policies and plans for achieving these goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be”. The latter definition is considered to be broad because it includes both the objectives of the company and the means by which to achieve them. A narrower view was presented by Ansoff (1965) who regards strategy as the “common thread” among organization’s activities that included four elements (product/market scope, growth vector, competitive advantage, and synergy). As Hofer and Schendel (1978) point out, the main difference between the definitions provided by Andrews and Ansoff is in the idea of whether goal setting is part of the strategy formulation process or whether it is a separate process. Ansoff clearly outlined it to be a separate process. Hofer and Schendel (1978) themselves argue that strategy is the mediating force or match between the organization and the environment. Distinctively different is the view of Porter (1998) who depicts strategy as the process of “creation of a unique and valuable position, involving a different set of activities”. He, however, emphasizes the point that there is no

ideal position – rather, the challenge is to select the activities that are different from rivals. This view is usually termed as a “position” view in contrast to strategy being viewed as, for example, a “perspective”. Mintzberg (1987) sums up the different views into four main ones, referring to them as:

- *Strategy-as-plan*: some sort of consciously intended course of action;
- *Strategy-as-ploy*: a specific manoeuvre intended to outwit a competitor;
- *Strategy-as-pattern*: a pattern in a stream of action;
- *Strategy-as-position*: a means of locating an organization in the environment; and
- *Strategy-as-perspective*: an ingrained way of perceiving the world.

In fact, he emphasizes that the debate on the prevalence and importance of one or another definition is rather meaningless because even though in some ways these definitions compete, in more important ways they complement each other (Mintzberg 1987). Moreover, often the interrelationships between these definitions/views provide more insights into organizations than the definitions alone. However, once again the use of one or another definition in research depends on the purposes of the research, and the adopted angle of inquiry.

Mintzberg (1994) also distinguishes between intentional and unintentional (emergent) strategies, where implemented intentional strategies turn into realized strategies, while the rest are unrealized. However, it is useful to remember that realized strategies might differ to a certain extent from the intentional strategies, since it is not always possible or even feasible to follow the originally intended strategy. Thus, some strategies may be termed “emergent” as they the result of unintended decisions and activities. In addition, companies often do not construct any specific intended strategy, and their strategies are purely emergent. This notion raises an interesting issue: which strategies are more worthwhile to research – intentional or emergent? The answer to this question lies in the aim and tasks of the research.

Finally, Hofer and Schendel (1978) differentiate between three major levels of organizational strategy: corporate level strategy, business level strategy, and functional area strategy. However, it is also important to keep in mind that these strategies are interdependent and in order to achieve a deeper understanding they should not be considered in isolation.

Reviewing the ample discussion on organizational strategy was of tremendous help in setting the right lens for analysis in this study. Considering the aim of the study and its research questions, it seems appropriate to adopt the “perspective” view of strategy. Both the aim and the research questions highlight the role of perceptions inside the organization that define corporate processes and action. At the same time, Mintzberg (1987) shows that strategy as a perspective is not just the content of a chosen position, but an “ingrained way of perceiving the world” (p.16). He underlines the important notion that it is a shared perspective in the organization, the one that forms the so-called collective mind and subsequently shapes corporate action. Thus, a perspective

view focuses the attention on the intentions and collective action of the organization. On the other hand, it has a strong link to strategy being viewed as a pattern – since the resulting corporate action (the pattern of organization) is a reflection of the shared vision and of the collective mind. So, according to Mintzberg (1987) the realized strategy is an important means of perceiving the direction actually pursued by the organization.

In summary, this study benefits from the “strategy-as-perspective” view, using the assumption that the marketing and communication action of the organization are the result of the shared organizational vision and perceptions of the surrounding environment and consumers. In addition, with the aid of the “strategy-as-pattern” view this study draws conclusions about the strategic thinking in the organizations involved, based on their realized communication and marketing strategies. With regard to different levels of organizational strategy, it was mostly business and functional level strategies in communication with consumers about energy conservation that were examined, but with the assumption about the interconnectedness of the different level strategies, which should allow conclusions about higher level strategic thinking in the company to be made.

7.2 Strategic thinking as a core competence

Closely related to strategy is the notion of strategic thinking. The prime reason for development of strategies by organizations is the dynamic nature of the business environment, and the need to cope with the changes in the best way possible. However, crafting a strategy in the unpredictable and volatile conditions of today’s marketplace requires companies to go beyond the somewhat stiff notion of strategic planning to the broader idea of strategic thinking. Mintzberg (1994) describes strategic thinking as a synthesizing process, which makes use of intuition and creativity for the outcome of “an integrated perspective of the enterprise”. In addition, Liedtka (1998) considers a capacity for innovative divergent strategic thinking as central for creating and sustaining competitive advantage. On the other hand, Hamel and Prahalad (1994) believe core competencies, which they describe as the sum of learning across individual skill sets and individual organizational units of the company, comprise the basis for its competitive advantage. In connection to this, Bonn (2001) argues that well-developed and cultivated strategic thinking at both individual and organizational level in a company is one of the critical core competencies for enduring competitive advantage.

Even though the definition of strategic thinking often remains broad and all-inclusive, it is worthwhile highlighting some of its most quoted features in order to be able to understand its value to the organization. Graetz (2002) summarizes strategic thinking to be synthetic, divergent, creative, intuitive and innovative, while its role comes down to seeking innovation and imagining new and very different futures that may lead a company to redefine its core

strategies and even its industry. Liedtka (1998) identifies five elements characteristic of strategic thinking that could also be viewed as criteria for evaluating the extent to which strategic thinking is present in the organization:

- *Systems Perspective*: holistic understanding of how the different parts of the organization influence each other as well as their environments;
- *Intent Focused*: strong intent to achieve a certain goal/state that allows organizations to focus, resist distractions and concentrate for as long as it takes to achieve the goal despite the disorienting change;
- *Intelligent Opportunism*: the ability to recognize and take advantage of newly emerging opportunities within the stream of the chosen intent;
- *Thinking in Time*: understanding the interconnectivity of past, present and future – requires using “institution’s memory”, broad historical context in order to create future;
- *Hypothesis Driven*: reconciling analytic thinking and intuition by constantly creating hypotheses and testing them through questions like “what if...” and “if then...”.

These criteria conveniently summarize a whole school of thought on strategic thinking developed by such gurus as Mintzberg, Porter, and Hamel & Prahalad that emphasize how focused, yet creative, flexible and futuristic thinking based on past and present experiences can turn into one of the main assets or core competences of a company. In addition, Moore (1993) observes that having a perspective that goes beyond that prevalent in the industry is essential for the ability to innovate.

7.3 Environment as a strategic issue in companies – the concept of corporate environmentalism

Today’s challenges to strategic thinking in organizations are truly numerous. For example, Kärnä et al. (2003) suggest that managers must deal with at least such issues as globalization of markets; increasing intensity of competition; rapid technological changes; a shift from an industrial economy to a knowledge, human capital and information based economy; demographic changes; environmental challenges; changing value systems; and consumer preferences. Both social and environmental concerns have already been there for many decades, but during the last decade they have especially gained in importance due to their potentially disastrous consequences to human kind: e.g. global poverty, spread of new diseases, widespread loss of biodiversity, and global climate change. As a result, the pressure on organizations to account for their environmental performance and to demonstrate their responsibility has been continuously increasing. After all, as Welford & Gouldson (1993) observe, businesses are central both to environmental problems and to their solutions. In

other words, today environmental and social issues are one of the central concerns for strategic thinking in organizations.

Banerjee (2002) attempts to structure and categorize the discussions in literature that combine the theory on strategy/strategic thinking and management and corporate concern about environmental issues – what the author himself terms “corporate environmentalism”. Banerjee suggests that corporate environmentalism can be framed as discussions on the necessity of a paradigmatic shift, as discussions of the environment being a stakeholder issue, or as a strategic issue.

The stream of literature on a paradigmatic shift centers on the problem of currently prevalent paradigms being anthropocentric or technocentric, while there is a clear need to switch to an ecocentric or even “sustaincentric” paradigm (e.g. Gladwin et al. 1995, Shrivastava 1995). Thus, researchers are trying to develop operational principles of sustainable development for organizational activities, and map out the changes in managerial and policy mindsets for such a shift. The next stream of literature focuses on social responsibility being an issue that is no longer purely a concern for maximizing the profits of stockholders, but includes all other legitimate stakeholders, with the ultimate stakeholder being the planet. So, according to stakeholder theory businesses should be held accountable for the environmental damage they cause. This line of research is receiving a lot of attention and encompasses a vast amount of writings (e.g. Freeman 1984, Clarkson 1995, Mitchell et al. 1997, etc.).

The third stream of literature Banerjee (2002) identifies as that which perceives environmental issues in the strategic framework. The author explains that the main assumption of the environment-as-strategy approach is that the integration of environmental concerns into strategic managerial thinking and activities in organizations can be a source of sustainable competitive advantage. Moreover, Banerjee (2002) utilizes and builds on this view in order to define and elaborate on the concept of corporate environmentalism: “organization-wide recognition of the legitimacy and importance of the biophysical environment in the formulation of organization strategy, and the integration of environmental issues into the strategic planning process” (p.181). This is a neutral concept (neither bad nor good), based on managerial perceptions of the strategic importance of environmental issues and the subsequent level of integration into the strategy. It is also a very comprehensive concept that encompasses all levels of strategy, which is an important implication for this study. In other words, the higher the degree of integration of environmental issues into the strategy, the deeper is the level of penetration across all levels of strategy. Thus, when studying decision-making and strategies at the business and functional levels of a company, it is possible to make conclusions about the degree of integration of environmental issues at both the corporate and enterprise level of strategy-making. Finally, one of Banerjee’s findings (2002) is the suggestion that companies in highly regulated industries, such as the chemical and the utilities industries, tend to be characterized by a significantly greater degree of corporate environmentalism – a stronger environmental

orientation and strategy focus. This statement seems to reflect the reality quite well as, for example, energy companies today face so much pressure from governmental and non-governmental organizations that they are literally forced to integrate environmental issues into their strategy processes. On the other hand, companies operating under strict environmental regulations are able to take advantage of such regulations since they serve as a serious entry barriers to other firms (Dean & Brown 1995). What the authors try to convey is that strategic thinking in highly regulated industries often leads to close corporate integration of environmental concerns into their operations. However, the degree of integration - or the degree of corporate environmentalism - might be the key factor of whether it becomes a core competence of the company, and whether the company can build a competitive advantage out of it.

Corporate environmentalism is simply today's reality for companies. Although earlier they used to be mostly driven by governmental regulations, changes in society have led to the evolvement of corporate relationships with a much wider network of actors, such as customers, suppliers, employees, and whole communities, as well as non-governmental organizations. Thus, managing these relationships, the internal and external pressures, and competing in the market, requires practical implementation of corporate environmentalism, or in other words, developing and implementing a corporate environmental strategy.

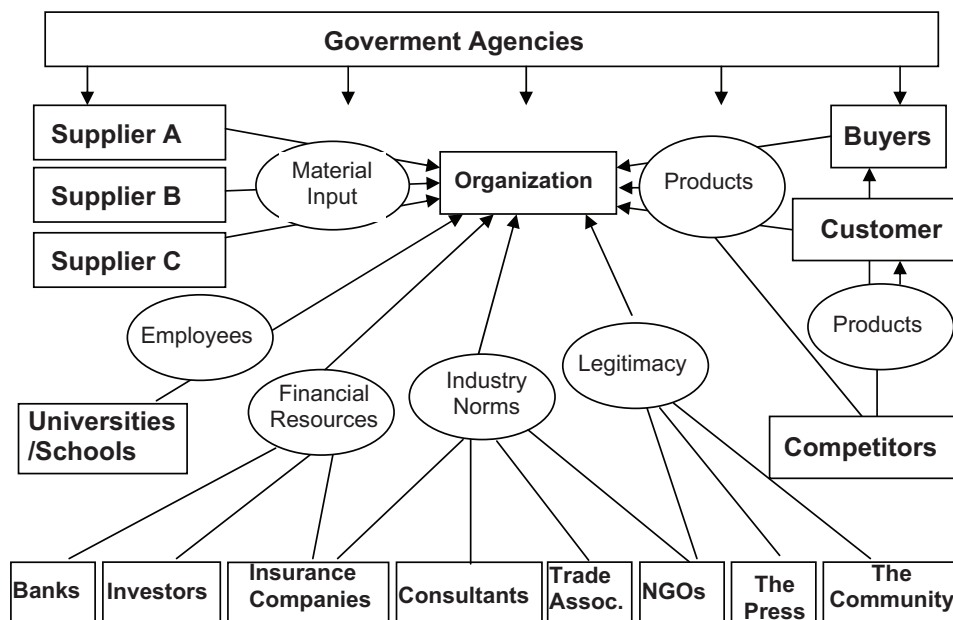


FIGURE 9 Sources of Pressure for Corporate Environmental Action. Source: Hoffman 2000.

7.4 Corporate environmental strategies

As explained earlier, this study embraces the view that strategy is a perspective, so it is interesting that Hoffman (2000) defines competitive environmental strategy as a change in perspective and a challenge to taken-for-granted notions of objects and actions. The author emphasizes that staying competitive requires thinking out-of-the-box and innovative approaches, it requires reconsidering how basic business processes, materials, and objectives are traditionally viewed. However, before considering competitive strategy it is useful to examine the basic environmental strategy options developed by Schaltegger et al. (2003), which are based on theory outlined by Steger (1988). As with any strategy building, the company has to consider its environmental opportunities and threats in order to assess its own position in the market. As a result, the combination of identified opportunities and threats give rise to consideration of the strategy options:

TABLE 3 Defining basic environmental strategies. Source: Schaltegger et al. (2003) as adapted from Steger 1988.

Potential threat	Potential opportunity	
	Low	High
High	<i>Defensive strategy:</i>	<i>Innovative strategy:</i>
	- Resistance	- Anticipation
	- Case-specific PR	- Differentiation
	- Retreat	- Acceptance of change
Low	<i>Indifferent strategy:</i>	<i>Offensive strategy:</i>
	- Ignore impacts	- Personal distinction
	- Re-evaluation	- Market penetration
	- Cost reduction	- Market enlargement

Defensive strategy implies that a company is trying to resist environmental pressure, sometimes completely retreating from the region, or using case specific PR to maintain its image. Perhaps the best example of defensive

strategy is ExxonMobil's actions ever since the first UN meeting on climate change that took place in 1991. This company continuously questioned the science behind climate change and findings that spoke in favor of global warming, while heavily investing in technologies that complemented a fossil fuel economy (Pulver 2007). The interests of ExxonMobil were represented both by direct messages at IPCC meetings, advertisements in newspapers and indirect interventions by different lobbying groups, e.g. Global Climate Coalition (ibid.). ExxonMobil's actions are usually contrasted with the route taken by BP and Shell that started exploring opportunities in the renewable energy sector along with their main oil business.

In industries where environmental impact is not that obvious (e.g. in the service sector) many companies adopt an *indifferent strategy*. Usually it means ignoring the impacts they produce on the environment as long as the law allows it and re-evaluating its activities only if some changes in environmental regulations occur. The indifferent strategy also includes achieving cost savings through reduced resource consumption and waste volume without any additional expenditure on investment (Schaltegger et al. 2003).

These two types of strategy could be grouped according to a different system developed by Sharma et al. (1999) into a general category of *reactive strategies of environmental responsiveness*. The dichotomy of reactive vs. proactive is based on the time aspect, referring to how promptly companies respond to environmental issues. Sharma et al. (1999) elaborate that reactive strategies are mostly about risk and liability reduction, the companies that adopt such strategies generally aim to comply, they accept industry practices and follow them, but there is little evolution in their strategies unless absolutely necessary due to regulation changes. Both defensive and indifferent strategies are mostly about reacting to the changes in regulation or in pressure from various groups, rather than implementing any kind of preventative solutions.

The *proactive strategies of environmental responsiveness* are directed towards creation of competitive advantage (Sharma et al. 1999). Their main characteristics are the use of preventative rather than end-of-pipe solutions with environmental issues, a longer time horizon for evaluating economic success and anticipation of societal or law changes before they happen. Such strategies are usually manifested through early and innovative actions of the companies in relation to environmental issues in order to manage organizational identity, image, and reputation, and to gain an early-mover advantage within the industry. Thus, the following two strategies (innovative and offensive) could also be characterized as being proactive in the context of time-reference.

Whenever some environmental problems receive a lot of attention in the media, companies pursuing an *innovative strategy* tend to anticipate societal changes, and emphasize their own achievements in environmental areas using media-created awareness. Moreover, they usually adapt their products or services to serve the newly-arisen needs of environmentally aware consumers, i.e. they start to differentiate themselves through marketing, by using environmental characteristics of the products/services (Schaltegger et al. 2003).

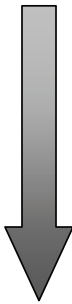


In other words, these companies are easily adaptable, they anticipate and respond to changes in society. For instance, organic food and clothing companies are the firms that attempt to exploit the trend in society for healthier and more environmentally-responsible lifestyles. Another example is DuPont's anticipation of the CFC ban in 1990s in connection to the discovery of the ozone hole. As a main producer of CFC DuPont had already heavily invested in research for CFC substitutes since the mid-70s, as well as cooperating with governmental and non-governmental organizations to bring about changes in regulation of ozone-depleting CFCs, thereby demonstrating its good-will and environmental orientation (Reinhardt 2000).

Finally, an *offensive strategy* in response to environmental issues is probably the rarest in the markets. Usually companies adopting the offensive strategy distinguish themselves purely based on their environmental performance or the additional benefits they provide to the environment through their products (Schaltegger et al. 2003). They also tend to enlarge their market share through cultivation of consumer needs to be close to nature, through improvement of consumer self-esteem based on environmental features of the products, and through health and well-being appeals. An excellent example of this strategy was the BodyShop company founded by Anita Roddick, although later sold to the giant-retailer L'Oreal. Among other examples are firms such as Secco (Sustainable Economy Collection Company) that utilizes all the different varieties of waste to create jewelry, accessories, souvenirs, utensils, and other small products with the help of innovative designers (Secco website). Their products gained international recognition and were introduced in such renowned design & art institutions as the Museums of Modern Art in Tokyo and New York (MOMA).

Earlier classifications of how companies approach environmental issues can be found, for example, in the writings of Roome (1992), Hunt & Auster (1990), Wartick & Cochran (1985). Within the stream of literature on corporate social responsibility Wartick & Cochran (1985) used a similar way of categorizing corporate approaches to the natural environment as cited above; namely, reactive, defensive, accommodative and proactive. Other authors, such as Roome (1992) came up with a more detailed classification, distinguishing between such categories as non-compliance, compliance, compliance plus, commercial and environmental excellence, and leading edge. This classification clearly indicates that even though some companies do go a bit further with environmental issues than mere compliance, their efforts might be rather piecemeal and inconsistent. Therefore, the author identified two more categories beyond compliance, excellence, and leading edge, to emphasize the consistency of involvement – the win-win approach and the scarcity of true leaders. In addition, Henriques & Sadorsky (1999) provide a useful comparison of the different classifications of corporate approaches to environmental issues where present – the leading edge and the commercial and environmental excellence approaches, which are both part of the proactive approach. In short, all approaches could be broadly classified as either proactive or reactive, but it

is certainly useful to have a frame of reference to distinguish between the levels of activity. For this reason, table (4) below presents a modification and development of that presented in the work of Henriques & Sadorsky (1999) in order to reflect on and relate two additional classifications to the earlier ones.

TABLE 4 Classifications of Corporate Approaches to Environmental Issues (modified, adapted from Henriques & Sadorsky 1999).

Environmental Management Literature		CSR Literature	Environmental Strategy Literature		
Roome (1992)	Hunt & Auster (1990)	Wartick & Cochran (1985); Carroll (1979)	Sharma et al. (1999)	Schaltegger et al. (2003)	
<i>Noncompliance</i>	<i>Beginner</i>	<i>Reactive</i>		<i>Indifferent</i>	
<i>Compliance</i>	<i>Firefighter</i>	<i>Defensive</i>		<i>Defensive</i>	
<i>Compliance plus</i>	<i>Concerned citizen</i>	<i>Accommodative</i>			<i>Innovative</i>
<i>Commercial and environmental excellence</i>	<i>Pragmatist</i>				
<i>Leading edge</i>	<i>Proactivist</i>				<i>Offensive</i>

Interestingly, Sharma et al. (1999) conclude that reactive and proactive strategies of environmental responsiveness are simply reflections of managerial interpretations of environmental issues as either threats or opportunities. For instance, they observed that companies exhibiting proactive strategizing usually reported focusing on gains that could be achieved through close tackling of environmental concerns. A large number of authors emphasize the fact that the success of companies dealing with environmental issues largely depends on how these issues are perceived. For example, Menon and Menon (1997) claim that strategic competitive advantage is created only once environmental concerns are perceived as opportunities, rather than as barriers and constraints. On the other hand, some authors admit that although the green movement has been considered as an opportunity by many companies, the consumer responses to marketing efforts did not meet expectations (McDonald & Oates, 2006). Perhaps part of the answer is that gaining a competitive advantage and turning environmental issues into one of the core competencies of the company is a challenging task. Being proactive, according to Sharma & Vredenburg (1998), requires that companies exhibit a consistent pattern of

environmental practices across all dimensions relevant to their range of activities, *NOT* required to be undertaken in fulfilment of environmental regulations or in response to pressures within the industry as standard business practices. In other words, only a few companies manage to be truly competitively proactive with environmental issues within their own industry.

7.4.1 Competitive environmental strategies

Hoffman (2000) claims that competitive environmental strategy is not concerned with regulatory compliance at all. Regulatory compliance and what businesses should do to decrease their negative influence on the environment (what he calls social responsibility) are the focus of environmental management. The author reminds us that corporate management is most often driven by legal sanctions (civil, administrative and criminal) or social sanctions (protests, negative press, bad image and reputation), so the task of management centers on providing the operative core to explore, identify, and manage an organization's environmental impact in order to avoid any of the sanctions. However, achieving sustainable competitive advantage requires making environmental concerns central to the core objectives of the firm, while management of pressures that are perceived as external to the company, is not sufficient. Hoffman (2000) maintains that it is precisely the shift from environmental management to environmental strategy that moves the issue from the outside to the inside of the corporate mind-set. This also reflects Banerjee's (2002) point of view that in order for corporate environmentalism to become a source of competitive advantage it demands organization-wide recognition and close integration of environmental issues into the strategic thinking and planning process.

At the same time, Pesonen (2003) sees corporate environmental strategy and eco-competitiveness as the most advanced form of environmental management, where the closest possible integration and acceptance of environmental issues as central for the organization are achieved. As a result, the organization benefits from its own efforts in the environmental area and has a chance to develop them into a core competence and compete on different levels: ranging from environmentally friendly technologies and processes to serving the needs of environmentally conscious customers (Banerjee 2002).

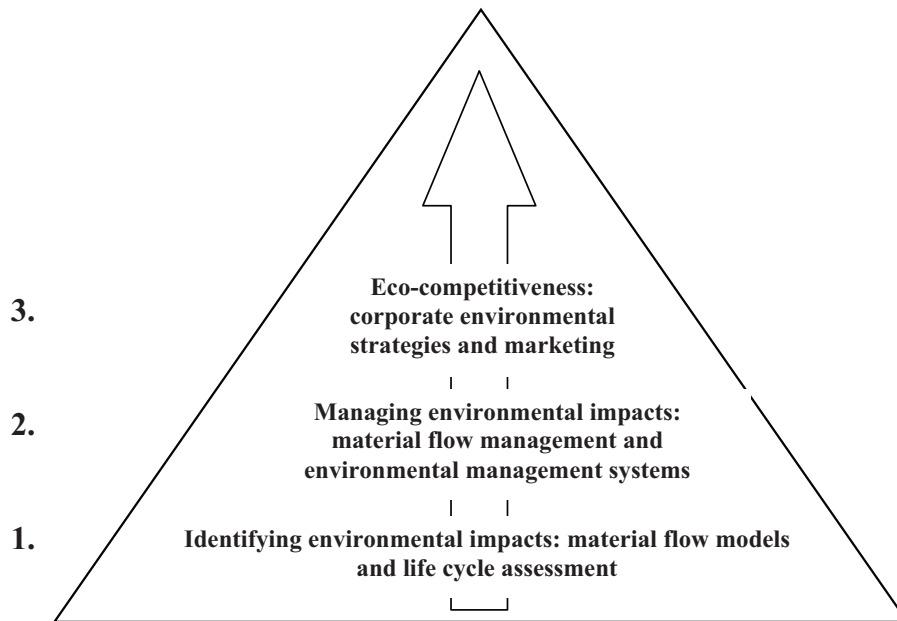


FIGURE 10 Levels of Corporate Environmental Management. Source: Pesonen (2003).

Using Schendel & Hofer's (1979) system of hierarchy for strategy levels in an organization, it is easy to relate each level to the steps identified in the triangle above. For instance, at the functional and business strategy levels many decisions concerning process and product development from the environmental point of view are taken, which obviously relates to the levels one and two of the triangle. However, Banerjee (2002) also observes that at the corporate level of strategy, major decisions about development and use of technology are made, so this is partly related to level two of the triangle. An important part of corporate level strategy-making is about integrating different businesses into a portfolio within the industry context, as well as making product-market decisions. In other words, since the third level of the triangle deals directly with environmental product-market decisions it is very closely connected to the corporate level of strategy. Finally, according to Schendel & Hofer (1979), the enterprise level of strategy is concerned with the company's role in society and its mission – thus, at this level just how deep and extensive corporate environmentalism will be is defined. As described by Schendel & Hofer (1979), the enterprise level of strategy appears to be outside the triangle developed by Pesonen (2003), but there are many companies where enterprise and corporate levels of strategy-making is closely integrated, thus in such cases the third level of the triangle could be closely related to both corporate and enterprise levels of strategy.

Porter (1998) claims that depending on the market, companies usually adopt one of the three main strategies for securing a competitive advantage (table 5), or in this case, to secure eco-competitiveness. These three strategies come down to cost leadership, differentiation, or to concentration (either by emphasis on cost or on quality). Simply speaking, gaining a competitive advantage is either about cost leadership or product differentiation, while, in Porter's (1999) experience, adopting both strategies is not usually effective. Schaltegger et al. (2003) describe environmentally oriented cost strategies as those focused on the most efficient use of natural resources in production and logistics. The authors also observe that environmental costs are often difficult to measure (e.g. sometimes they are seen as externalities) and companies should be very systematic in identifying and revealing environmental costs and associated savings, only then such strategy will bring substantial benefits. However, another problem is that measures with the greatest cost reduction effect and lowest expenditure are usually implemented first, while later this effect wears off since such measures usually require one-time implementation, and they are not repeatable. Thus, from the point of view of Schaltegger et al. (2003) environmentally oriented cost strategies (both in broad and narrow business fields) are mostly considered as defensive, while successful cost strategies require the close consideration of customers and their demands for products and services, which means shifting towards a more differentiation oriented strategy.

TABLE 5 Competitive strategies. Source: Porter 1999.

Competitive advantage		
Business field	Lower costs	Higher quality
Broad	Cost leadership	Differentiation
Narrow	Concentration by emphasis on costs	Concentration by emphasis on quality

Schaltegger et al. (2003) suggest that many of the environmentally oriented differentiation strategies are offensive in their nature, or what Sharma et al. (1999) term proactive. Tackling existing environmental problems requires innovative thinking, delivering new solutions in the form of products or services, or redefining existing business fields with significantly improved environmental offerings. Moreover, often it is necessary to cultivate the latent needs of customers – the ones that are not obvious to some people, such as the need to feel closer to nature, thereby creating meaningful experiences with

nature to increase its value for people. Environmental differentiation is possible both in narrow business fields (eco-niches) and in broad ones (environmental mass markets), depending on the needs that the product/service is supposed to meet, or on the target group of customers. Businesses in eco-niches profit from satisfying groups with special interests, which allows these businesses to charge higher premiums provided there are no (or very few) similar services available in the area. Niche businesses are often pioneers in what they do because they tackle precisely the latent needs of the customers. On the other hand, if certain customer interests and attitudes gain in strength larger suppliers may choose to green at least part of their offerings in order to make some environmentally friendly products widely available to people.

However, some authors point to the fact that consumer responses to environmental efforts of companies in 1980s and 1990s have been rather disappointing despite the rise in green marketing and numerous attempts to identify new markets with green consumers (Davis 1993, Prakash 2002, McDonald & Oates 2006). In order to properly explore some of the reasons for failed environmental initiatives, it might be useful to examine the role of marketing in competitive strategy-making.

7.5 The role of marketing in competitive environmental strategy-making

There have been various attempts to coin a term for marketing that tries to balance the techno-economic market perspective with a broader socio-environmental approach (Peattie 1995). Prakash (2002) summarizes that this has been referred to as environmental marketing (Coddington 1993), green marketing (Peattie 1995, Ottman 1998), ecological marketing (Fisk 1974), and greener marketing (Charter & Polonsky 1999). These terms are often used interchangeably and the differences between them are not very significant, except for the fact that some definitions may include references to social issues in addition to environmental perspective. Peattie (1995) points out that, in any case, the ultimate goal of environmental marketing is satisfying consumers, and in that it resembles conventional marketing, the difference comes from the fact that environmental marketing should achieve its task in an environmental-friendly, sustainable way. For a few decades now marketing in general has been increasingly becoming customer-oriented, its focus has explicitly shifted from "satisfying customer needs" to "building lasting and profitable customer relationships" (Kotler & Armstrong 2004). The rise of customer relationship management (CRM) reflects this tendency in marketing. The main assumption of CRM is that there is a strong link between customer loyalty and corporate profitability; hence companies should proactively seek to build and maintain long-term relationships with customers (Zablah et al. 2004). However, the relationship building aspect from conventional marketing has not found its way into the definitions of environmental marketing. The latter is most often defined

in terms of marketing process activities (e.g. identifying and satisfying customer needs in a profitable and sustainable way, Peattie 1995), or in terms of product promotion using their special environmental characteristics (Prakash 2002).

7.5.1 Environmental marketing: getting it right and getting it wrong

Several authors attempt to explain why green/environmental marketing has not proved to be as successful as it was expected to be. Firstly, when green became the new “hype” in society, many companies attempted to benefit from it without doing much – in essence, practicing all types of creative greenwashing. As a result, much distrust, cynicism and skepticism has been generated in society in response to green marketing (Mohr et al. 1998). For example, what some companies chose to do was simply to market their environmental compliance as an outstanding environmental achievement (*compliance marketing*). No wonder such marketing attempts resulted in consumer distrust (Peattie & Crane 2005). In addition, authors such as Davis (1994) found that consumers responded much more positively to environmental advertising of companies that already had an established positive environmental reputation or image, while the response to the advertising of companies that have had a negative record with environmental issues showed a much more skeptical attitude. However, Davis (1994) warns that this should not discourage the companies with a negative environmental record from getting involved with environmental marketing, it just implies that they would have to put more effort to demonstrate credible evidence and sincerity of their environmental endeavors. Peattie & Crane (2005) suggest that many of the companies from the “dirty industries” (e.g. chemicals, automobiles) started to actively use green marketing, but only as a PR function, in order to brighten up their image. This often led to the opposite result – bringing about even more skepticism. In short, these companies did not manage to make the best of green marketing because it was reduced to PR, or to *green spinning* as Peattie & Crane (2005) refer to it. Another form of shallow green marketing is described by these authors as *green selling*: inspired by the green theme some companies simply highlighted one or another environmental characteristic of a product (which was always there), but were unwilling to invest into further product or process development. Their strategy was focused on maximizing sales with existing products and their qualities, but they basically ignored the opportunity to embrace further greening as a means to expand their green marketing activities in the future.

Rex & Baumann (2007) criticize the existing practices of green marketing that essentially center on eco-labels as the main means of promotion. They argue that eco-labelling is more of a policy instrument than a central marketing tool, and that labels in general have traditionally included technical information and played subordinate roles in conventional marketing, but never the central one. Thus, Rex & Baumann (2007) call for a much more creative use of promotion tools (beyond the eco-labels), as well as for the active consideration of other factors that are important in positioning – such as place and price. The

authors observe that environmental marketing concentrates on green premiums too much, often charging significantly higher prices – although in some cases it is not justified in terms of costs, yet at the same time other costs to the consumer (such as convenience, search costs, etc.) also remain high because factors such as adequate promotion and distribution (place) have not been tackled properly. Belz (2005), for instance, emphasizes that marketers should not forget about all of the different costs and benefits consumers might face when they are considering greener purchases. Moreover, these costs and benefits tend to extend well beyond the purchase point (which is especially true for environmentally friendlier products or services), thus marketers should consider the whole life cycle of the product/service, and utilize the information either for development or for appropriate marketing strategies. Figure 11 presents good examples of different benefits and costs that constitute the final value to the consumer, and which should be considered while building a greener marketing strategy. Peattie & Crane (2005) refer to the tendency of charging unreasonably high green premiums (while other consumer costs remain the same) as the practice of *green harvesting*. The *harvesting* companies utilize certain environmental achievements (such as reduced packaging, reduced use of energy, and natural resources, etc.) to set higher prices as compared to conventional products, instead of competing through improved environmental performance and *lower prices* based on the costs savings they have achieved (NB: this does not concern those companies that charge green premiums because they internalize environmental costs). In practice, research shows that products with improved environmental performance sell successfully when all other consumer costs (price, search, use, etc.) are equal to the costs of conventional products (e.g. see Meyer 2001).

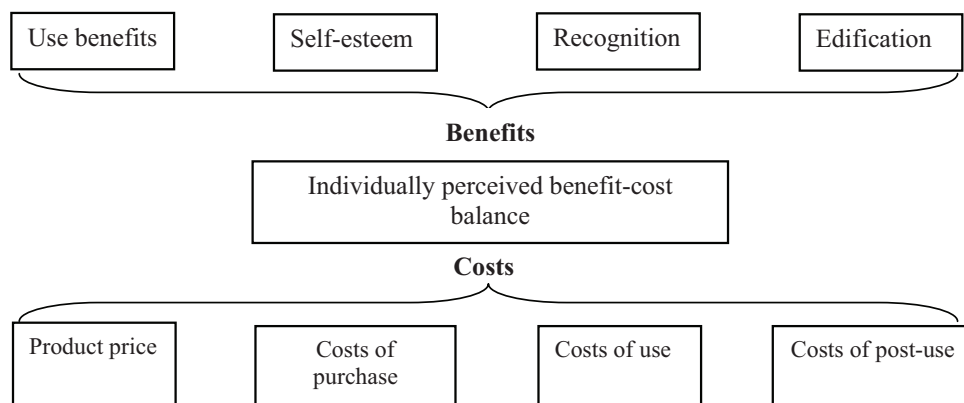


FIGURE 11 Customer perceived value – difference between all benefits and costs. Source: Belz (2005).

In general, Peattie & Craine (2005) and Rex & Baumann (2007) observe that consumer needs and wants are discussed surprisingly little in the environmental marketing literature, and although businesses produce green products/services, they often end up being far from what consumers would actually appreciate. Peattie & Crane (2005) argue that such a lack in customer orientation and failure to conduct proper market research are amongst the main reasons companies fail in their environmental marketing attempts. The authors make a point of showing how a general belief that people will want anything green leads to companies creating unwanted products with unrealistic prices. On the other hand, Rex & Baumann (2007) note that another typical mistake with green marketing seems to be the exclusive targeting of environmentally-minded consumers, while there is the potential to enlarge market share by educating consumers and promoting a different kind of lifestyle and consumption. As summarized in table below (6), Rex & Baumann (2007) suggest that environmental marketing could learn much from conventional marketing along the traditional marketing processes.

TABLE 6 Comparison of focal areas in green and conventional marketing in the marketing strategy process. Source: Rex & Baumann (2007).

MARKETING STRATEGY:	Demand measurement	Segmentation & targeting	Positioning	Competitive advantage
Focus in green marketing	Market size	The green consumer	Eco-label (product)	Doubtful
Other means in conventional marketing	Market need and wants	All consumers	Place, price, promotion	Possible

The overview of research literature concerning environmental marketing's misfortunes indicates that much of the implemented strategies turned out to be rather reactive, defensive and shallow. Happy to engage with a new theme, too many companies tried using "green" as their winning point while there was not much evidence of development to back it up, nor was there much effort to research consumer needs emerging out of environmental concerns. Such strategies backfired and even discouraged some companies that were considering going green and exploring potential opportunities. The lack of innovative approaches to the tricky balance of customer costs vs. customer benefits, excessive price premiums, and unjustified claims, resulted in a confused and reserved response of consumers to the enthusiastic green offerings. Only very few strategies were evaluated as proactive and innovative

in the reviewed literature, while the rest were described to be centering around the “low-hanging fruits” of easy cost savings, short-term or immediate benefits based on existing environmental characteristics, risk reducing green PR, and compliance based achievements (e.g. CFC free products). Much criticism revolves around poor implementation of marketing process activities (market research, segmentation, positing, etc.), the short term orientation of the majority of the companies, and scarcity of true innovative future-oriented thinking. As it turns out, the role of marketing in competitive strategy making was reduced to taking advantage of immediately obvious cost savings and poorly planned advertising, which was either based on doubtful environmental claims or completely entrusted to the whole variety of newly emerged environmental labels. In fact, what marketing should be concerned with is associated with extensive customer orientation, market research, long-term market development strategies, and innovation.

7.5.2 Environmentally and sustainably oriented development strategies

Peattie & Crane (2005) explain that what has been perceived as environmental marketing up until today has mostly had little to do with either marketing or the environment. However, they also note that environmental marketing is just at the very beginning of its own story, and much development, commitment, and patience are needed before it reaches the maturity stage. Schaltegger et al. (2003) argue that in order to be able to take advantage of the “win-win” opportunities in the field of sustainability, companies should be prepared to overcome and reduce the barriers in socio-cultural, legal, and political spheres. Thus, one of the most vital roles of marketing is connected to environmentally oriented market development strategies. Among the issues such development strategies could address through marketing, Schaltegger et al. (2003) place current lifestyles and consumption habits first, while they also mention certain infrastructural barriers (e.g. lack of recycling infrastructure), lack of reliable and transparent quality standards, and various bureaucratic hindrances to environmentally oriented businesses in the service sector. The authors elaborate that development strategies represent proactiveness, paving the way for progressive expansion in environmental innovation. Peattie & Crane (2005) also deem the willingness to change markets as important as the willingness to change and redefine products. They observe that the development of new products will require the development of markets, so that alternative forms of production and consumption could be created and accepted. Achieving sustainability is a very challenging task, and it will require companies to go beyond current consumer needs, focus on future needs, and reorient marketing communication so as to inform consumers rather than just impress them. The features of new innovative communication should, for example, focus on highlighting the use of products, rather than their ownership, dematerialization and creative use of services. Finally, Peattie & Crane (2005) come to the conclusion that new markets and conditions will require companies to take the responsibility of being the guiding force for consumers, rather than carrying on

the image of passive consumer servants. More sustainable marketing has to consider consumer and societal welfare, and guide consumers towards sustainable behavior – and that is the reason why companies should be willing to “manage demand and expectations downwards!” (p.366). The expectations of consumers concerning costs, availability, and convenience, should be brought closer to reality, and even though it is traditionally thought that this responsibility belongs to the area of governmental action, the body of literature on proactive thinking, innovative strategies, and sustainable marketing, offer an alternative way of thinking about the role of companies in today’s society, and about future opportunities that might open up to them.

7.6 Sustainability marketing and the natural case of corporate sustainability

In fact, the idea of managing and shaping demand is not new. Kotler & Levy already emphasized in 1971 that the marketer’s task is to actually shape demand, so that it conforms with the *long-run objectives* of the organization. They point to the fact that the most popular misconception about marketing is that it deals with the problem of expanding demand. In their writings Kotler & Levy (1971) address various occasions when companies practice what they call “demarketing”. The three types of demarketing include general, selective, and ostensible; and while all are interesting, the general type corresponds to the purposes of this study. General demarketing is implemented when a company wants to shrink the level of total demand (Kotler & Levy 1971). The reasons for such motivation might be various: complete product elimination, temporary shortages in production, or chronic overpopularity of the products/services. Essentially, when faced with excess demand, the task of marketing shifts to limiting the demand, while keeping customers satisfied in order to maximize profits over the long run. In fact, it is part of a long-term risk management strategy, which includes active communication and engagement in dialogue with customers and other stakeholders (Schaltegger et al. 2003).

Strategic marketing thinking has always required creativity and out-of-the-box thinking, rather than conforming to what is traditionally practiced. Fodness (2005) suggests that although strategic marketing thinking sometimes embraces orthodoxy, it very often has to do the opposite, that is to challenge orthodoxy. This calls for new ways of thinking, for example, lateral thinking (de Bono 1970), which is the ability to switch from old patterns of thinking to new patterns that reveal situations in a different perspective in order to derive unique approaches. Fodness (2005) advocates lateral thinking to be most appropriate when the purpose of the marketing strategy is to respond to new opportunities and challenges in unconventional ways; this may include restructuring markets and creating new categories. Breaking the vicious circle of conventional industry thinking (“the way we’ve always done marketing

around here”) often requires breaking the main assumptions; such as, what is the role of companies for the society and societal change.

One of the examples of marketing that claims to go beyond the conventional is *sustainability marketing*, developed by Belz (2005). He defines the approach as “building and maintaining sustainable relationships with customers, the social environment *and* the natural environment” (p.2). This definition, attuned with the latest trend in marketing, has a strong customer orientation, but at the same time it assigns the same value to the social and natural environment. Thus, the activities involved in the sustainability marketing process include analysis of the socio-ecological problems along with analysis of consumer behavior. Sustainability marketing comprises both the strategic and operative levels, and while segmentation, targeting and positioning should be accomplished on the former level, the integration of social and ecological criteria into the marketing mix is part of the latter (Belz 2005). Strategic thinking in sustainability marketing is reflected through its long term focus, futurity, and orientation towards relationships, rather than transactions. In addition, it goes far beyond conventional or even environmental marketing because one of its key features is consideration of social and environmental problems along the whole life cycle of products/services, and the identification of creative and innovative solutions at the intersection between socio-ecological problems and consumer behavior. Peattie & Crane (2005) write that in order to be sustainable it is necessary for marketing to address both purchase and non-purchase behavior, which includes product use, sharing, maintenance, disposal, and take-back. The concept of sustainability marketing manages to do just that because of its life-cycle perspective. But perhaps the most distinguishing feature of sustainability marketing is its transformative aspect directed at societal, political, or economic constraints that should be overcome. In essence, the transformative aspect indicates a willingness to implement market development strategies and assumes the responsibility for societal level changes, instead of simply adopting the existing situation.

Dyllick & Hockerts (2002) observe that many companies address sustainable development through the business case for sustainability – which basically comes down to efficient use of natural capital. In other words, most businesses use eco-efficiency as their main guiding principle for the implementation of sustainable development. In addition, eco-efficiency is often complemented by socio-efficiency (the relationship between a firm’s value added and its social impact). Socio-efficiency is concerned with minimizing the negative impacts (e.g. work accidents) and maximizing the positive (e.g. donations, creation of employment). But both eco-efficiency and socio-efficiency contribute to economic sustainability, although there are still natural and societal dimensions to be considered. As described earlier, eco-efficiency is often offset by various rebound effects (Hertwich 2005, Hofstetter et al. 2006), hence Dyllick & Hockerts (2002) argue that businesses need to consider eco-effectiveness in order to develop the natural case for corporate sustainability.

Eco-effectiveness is concerned with absolute thresholds (as opposed to relative ones), so, for instance, if businesses chose to consider the absolute amount of mobility-induced CO₂ emissions worldwide, they would have to shift the focus from fossil fuel efficiency to the effectiveness of solar powered fuel cells (Dyllick & Hockerts 2002). However, producing eco-effective products can be easily undone by rapidly increasing societal consumption; that is why sufficiency should serve as another criterion for the natural case of corporate sustainability. Dyllick & Hockerts (2002) observe that ecological sustainability should be evaluated based on eco-effectiveness and sufficiency, while businesses and society are their main drivers respectively (figure 12a). Sufficiency is not driven directly by businesses, it is rather an individual's choice, which might turn into a trend in society. Thus, the question explored in this study is concerned with whether businesses would be willing and capable of driving not only eco-effectiveness, but also sufficiency-oriented consumption lifestyles in society (figure 12b).

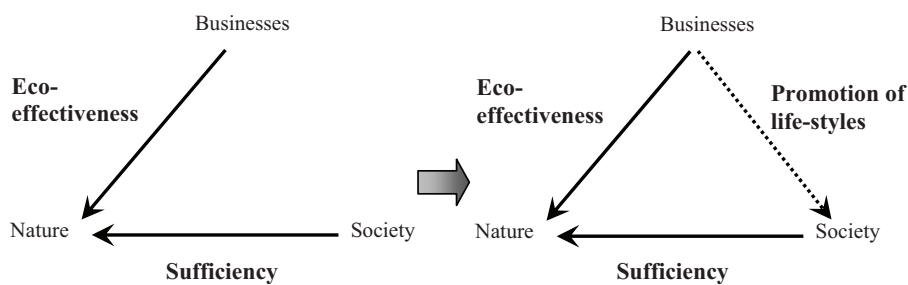


FIGURE 12a
The natural case of corporate sustainability. Source: Dyllick & Hockerts 2002.

FIGURE 12b
The natural case of corporate sustainability strengthened by sufficiency-oriented life-style promotion. Source: Dyllick & Hockerts 2002, modified.

The concept of sustainability marketing (Belz 2005) is a good example of how businesses could contribute to both eco-effectiveness and sufficiency at the same time. Analysis of the socio-ecological problems along the whole life cycle of a product or service, long-term orientation, and futuristic thinking are the ideal premises for eco-effectiveness implementation, while the transformative aspect of sustainability marketing suits well the purposes of influencing lifestyles in society. However, sustainability marketing is certainly a very challenging yet comprehensive way for businesses to approach sustainable development. Thus, very few businesses would be willing to follow this path at the moment, and to step so far beyond the traditional eco-efficiency approach. On the other hand, studying even corporate attempts to engage with

sustainability marketing or the like could be valuable in terms of developing the concept further in terms of practical implementation by identifying motivations, barriers, successes, and challenges that companies come across in the process.

7.6.1 Why not social marketing?

Some marketing concepts seem to be very similar to sustainability marketing. While it has been previously discussed that green, environmental, and ecological marketing are different in a sense that they focus on environmental issues, there are still societal and social marketing to be considered. Usually, the notion of “social” is rather broad, and whenever one refers to social issues this may well include environmental issues as well. Hence for many, the concept of corporate social responsibility includes both social and environmental responsibility (e.g. Belz 2005, Cornelissen 2008).

The concept of societal marketing holds that organizations should satisfy consumer needs in a way that preserves and enhances the well-being of individual consumers and of society as a whole (Kotler 1997). It calls for marketers to build social and ethical considerations into their marketing practices. Although very similar to sustainability marketing, it lacks the transformative aspect; as some authors observe, it does not necessarily involve influencing target consumers in any way (e.g. Hirschman 1991, Andreasen 1994).

Although originally developed by Kotler & Zaltman (1971), the concept of social marketing has been further developed by other authors. Alan Andreasen, in particular, develops and promotes the concept of social marketing in a series of articles (e.g. 1994, 1997, 2002), emphasizing that the earlier definition was characterized by many uncertainties and caused some confusion around the concept. The definition proposed by Andreasen (1994) works best to highlight the difference with sustainability marketing: “social marketing is the adaptation of commercial marketing technologies to programs designed to influence the voluntary behavior of target audiences to improve their personal welfare and that of the society of which they are a part” (p.110). As becomes evident from the definition, social marketing’s most distinguishing feature is benefiting target consumers and society as a whole, but *NOT* the marketer. Thus, organizations that engage in social marketing are those that are non-commercial. Sustainability marketing, in turn, is aimed at benefiting the marketer, the customer, and the natural and social environments. One may wonder though, if the idea of social marketing is very similar to sustainability marketing, then why implement the latter, and not the former (as it has traditionally happened)? In order to properly answer this question, it is necessary to apply a case-by-case approach, reviewing a whole range of factors, such as the issue to promote in question, current consumer behavior, obstacles to change, and the characteristics of the industry involved. For example, in the case of energy conservation promotion, it is worth examining whether energy companies are already involved in energy conservation promotion with regard to household consumers due to their strategic long-term marketing thinking and customer-

oriented approach. If this is indeed taking place, then, depending on the effectiveness and scale of the corporate efforts, it is possible to conclude whether there is a need for social marketing in addition to discovering what is already operating in the industry.

8 ENERGY CONSERVATION IN FINNISH HOUSEHOLDS: THE SURVEY OF ATTITUDES AND EXPECTATIONS

8.1 Description of the survey

In order to explore the attitudes, opinions and expectations of Finnish household energy consumers a questionnaire was first developed in English, and subsequently translated into Finnish for administering. The questionnaire consists of 26 questions, mostly multiple-choice and one open-ended question. Both versions of the questionnaire are presented in appendices 4-5. The questionnaire went through pre-testing with four people, and was revised accordingly. The survey was conducted by a group of marketing students (68), who were each instructed to interview seven households. Since the sampling frame for the survey was convenience based, quota sampling was employed to improve the representativeness of the sample. According to Davies (2007), quota sampling constitutes an improvement on convenience sampling and improves the quality of the data. The quotas were assigned according to the rough structure of different size households using national statistics of Finland as a reference point. Babbie (2007) claims that when implemented properly, quota sampling ensures that the overall data provides a reasonable representation of the total population. Babbie (2007) also notes that interview surveys are preferable since they result in fewer incomplete questionnaires. Thus, for this survey each student-interviewer noted down the replies of the interviewees to minimize any misunderstanding and mistakes in the questionnaire. In accord with the recommendations of Neuman (1994) for survey reporting, the main characteristics of the survey are summarized in table 7.

As described earlier (see chapter 2), the survey was administered during the period 25.01.2006 – 06.02.2006. One should keep in mind that since this took place quite early in the research process, it was later found that not all the questions included in the questionnaire were fully relevant to this study's

research questions, which had evolved over a period of years. Moreover, the results of the survey are relevant for the year 2006, and if the same survey took place now, or even a year earlier, the results would probably be very different because the discussion around climate change and the role of energy consumption has been steadily gaining strength and intensity over the last 2-3 years. Nevertheless, the results of the survey are valuable because they provide a point of reference to the current societal views on energy conservation and their expectations from the key energy industry actors. One may, for instance, assume that due to active discussions about energy conservation the awareness level has risen, as probably have the expectations of consumers. The results of the survey allow free reflection on such issues as how dynamic and flexible are consumers' views, how much time is necessary for a certain discussion to gain momentum, and what are the current consequences of the changes in society.

Even though a geographical focus in the survey was not intended, many of the respondents are from the city of Jyväskylä and the surrounding region, which comprises around 130 000 inhabitants (see results). This is connected to the fact that the students that conducted the survey studied in Jyväskylä. This bias is explicitly recognized and should be borne in mind while examining the results of the survey. At the same time, this is not thought to be a reason for significant concern since Central Finland has traditionally been considered as representative of an "average Finland". In addition, as described later in the chapter, survey results were validated during the interviews with the energy companies.

TABLE 7 Characteristics of the survey of Finnish households exploring attitudes, opinions and expectations of Finnish population.

Categories for survey reporting	Survey-specific information
1. The sampling frame (phone directory, etc.)	No specific listing, convenience-framed
2. The dates of the survey	25.01-2006 - 06.02.2006
3. The population that the sample represents	Finnish household energy consumers (single households, co-habiting without children, co-habiting with children)
4. The size of the sample	477

(continues)

Categories for survey reporting	Survey-specific information
5. The sampling method	Quota sampling (quotas roughly corresponding to the categorization of households used in energy consumption statistics in Finland)
6. The exact wording of the questions asked	Questionnaires were originally designed in English, and then translated into the Finnish language. Both versions are presented in appendix 4 and appendix 5 respectively.
7. The method of the survey	Face-to-face interviews
8. The organizations who sponsored the survey (paid for it and conducted it)	<p>This is an independent survey conducted by a PhD candidate for research purposes. The survey was not sponsored by any of the organizations that are part of the study.</p> <p>The survey was conducted in cooperation with the marketing course "Marketing research" (University of Jyväskylä), where the students of the course (68) conducted face-to-face interviews. Each student was required to interview 7 households.</p>
9. The response rate of completed questionnaires	100%
10. Problems and missing information in responses to specific questions	<p>One student interviewed 8 households – hence the odd number of interviewed households (477).</p> <p>For details on missing information and responses see section 8.2.</p>

8.1.1 Aims and themes of the survey

The survey conducted within the framework of this study is of a descriptive nature, thus it does not test any hypotheses. The primary aim of the survey was to explore the attitudes of Finnish household consumers towards energy conservation in their everyday lives. Considering the tendency of positive bias

in responses to direct questions, the questionnaire includes a range of other topics that may allow indirect conclusions about the attitudes towards energy conservation to be made. For instance, some of the consumer expectations and preferences in the area of energy consumption may speak for their energy attitudes, and how passive or active they appear to be. Also, although the aim of the survey was not to test the knowledge and awareness of consumers, some of the questions may provide indirect insight into these issues. Moreover, constructing a fuller picture of the household consumers provides more insight into their attitudes towards energy conservation.

Another major aim of the survey was to build ground for a subsequent qualitative part of the research. The information obtained through the survey guided the choice of themes for semi-structured interviews. Moreover, part of the information obtained through the survey was presented directly during the corporate interviews, so that the responses to the information could be included in the combined analysis of the two sets of data. For example, the information on consumer expectations concerning sources of advice on energy saving was presented to the companies for their comments in order to better understand the corporate communication strategy and motivation behind it.

Collected data were coded and summarized using SPSS software; the results are reported in section 8.3. For purposes of readability, the results of the survey are reported using wider themes, each of which contains replies to several questions (table 8). Corresponding question numbers are presented in brackets.

TABLE 8 The structure for reporting survey results according to themes.

Survey themes	Variables
Characteristics of surveyed population:	Age (1)
	Sex (2)
	Place of residence (3)
	Education (4)
	Number of household residents (6)
	Type of housing (7)
	Ownership (owned or rented housing) (8)

(continues)

Survey themes	Variables
Energy profile and structural conditions:	Energy provider to the household (9) Choice of energy provider according to the source of information (10) Satisfaction with current energy provider (12) Separate or integrated bills for electricity and heating (13) Means of monitoring household's energy consumption (20)
Energy habits, awareness and interest levels:	Habits and household's lighting (14) Habits and heating (room temperature) (15) Visit to the energy provider's website (16) Energy conservation practices, open-ended (21) Interest to know more about energy saving (26) Interest to know about energy saving in financial terms (22)
Information sources and channels:	Current source of information about energy conservation (23) Preferred channel for receiving information about energy conservation (24)
Attributed responsibility:	Actor responsible for delivering information about energy conservation (25)

8.2 Limitations and corrections of survey questions

Some of the questions originally included in the survey did not appear to bring any value to the study in the context of the research questions that evolved over time. Therefore, the reporting of results omits some of the questions, although all data were entered into SPSS and are available for analysis. The explanations below are presented for the information that remained unused, as well as some of the limitations that became apparent only after the survey was completed.

Question five (5) addresses the profession of the respondent. The range of professions reported was extremely large, and it did not appear practical to

include such extensive data in the reporting. The data on education level is more standardized and gives some direction as to the professions of the respondents, therefore it was deemed sufficient to report just on education levels.

Although not apparent during the testing of the questionnaire, question 11 proved confusing during the actual survey. Due to missing responses and confusing data, the results of this question were omitted.

Question 17 concerns the main source of energy production delivered by the energy provider. Probably due to incorrect/unclear phrasing and insufficient instructions from student-interviewers the question turned out to be very problematic. Most of the respondents chose several sources, while the interviewers did not insist on selecting just one source as was originally intended. Due to numerous mistakes, it was not possible to evaluate the responses to the question 17.

Question 18 was designed to explore the knowledge of consumers about energy consumption of their household appliances. However, while the question asks responders to mark the most energy-consuming appliance in the household, the option of marking which appliances were present in the household and which ones were not was not included. Thus, it is not possible to make any sound conclusions based on the responses to the question since most of the respondents probably marked the most-consuming appliance that was present in their household – and there is no way to evaluate the replies. Unfortunately, this problem did not become apparent during the testing of the questionnaires, and was not timely corrected.

The original thought behind question 19 concerning the brands of different household appliances, was to distinguish the most popular brands from different categories of household appliances and contact them for further interviewing. This was meant to bring more insight into the interaction concerning energy conservation between consumers, energy providers, and household appliance manufacturers. However, this would have made the scope and the scale of the study too large within the resources of one researcher. Therefore, the results of the question 19 are omitted in this study, but are available for analysis.

Question 21 is about the energy conservation practices of household consumers. Although it requires a “yes” or “no” reply, it also asks for a brief description of energy conservation practices if it is the case that the respondents claim that they do implement energy conservation. This was supposed to reduce the social desirability bias by imposing an effort to list the practices. The results of the question 21 are quantifiable by the “yes/no” principle, however the more qualitative results (descriptions of energy conservation practices) were not quantified. Instead, some of the practices are quoted in the results section as examples.

Question 25 includes a list of actors that play important roles in energy consumption, and the respondents were asked to select those that they deem responsible for delivering information on energy conservation. A significant

limitation of the question, which arose during the interviews with representatives of energy providers, is that the list does not include the consumers themselves as actors who could seek out the information on their own. The list, however, does include the option of "other", "which?" Thus, in theory the respondents were able to mark themselves if they so wished. An examination of the questionnaires did not reveal any such replies, although some respondents marked "relatives" and "friends" in the option of "other" – which does point to the consumers as sources of information, albeit indirectly.

Question 26 inquires whether consumers would be willing to receive more information in the most preferred way (preferred channel) about energy conservation. Possible responses to this question are "yes", "no" and "not sure". The latter option proved problematic when comparing the results of this question to that of question 22, which does not include "not sure" option in the responses. In such situations, Babbie (2007) recommends recalculating the percentages with the "not sure" responses excluded. According to the recommended method, the percentage of respondents with any opinion ("yes" or "no") was calculated and amounted to 91,6%. Then, the percentages of positive and negative replies are simply divided by 0,916 to result in the percentages of positive and negative replies out of those who had the opinion – whereas the "not sure" responses are excluded. Thus, for comparison purposes the numbers provided in table 19 were calculated according to this methodology, and do not include the "not sure" responses. However, in cross-tabulations the percentages from responses to question 26 were kept as original.

Some of the questions in the survey include the possibility to answer from one to three options in response to the question (numbers 11, 20, 23, 24, 25). This has resulted in certain difficulties in entering the data to SPSS, and using cross-tabulation function. Therefore, the options for checking statistical significance were limited.

8.3 Survey results

8.3.1 Characteristics of the surveyed population

As mentioned above, the results of the survey are organized according to wider themes. The first part of the results provides more general, demographic information about the respondents. Table 9 presents a detailed overview:

TABLE 9a Demographic characteristics of the surveyed population. Gender

	Survey 2006, frequency	Survey 2006, percent (%)	Corresponding data from Finnish national statistics 2006 (%)
Gender			
Female	214	44,9	51,0
Male	212	44,4	49,0
Both present	51	10,7	--
Total	477	100,0	100,0

TABLE 9b Demographic characteristics of the surveyed population. Age

Age	Survey 2006, frequency	Survey 2006, percent (%)	Corresponding data from Finnish national statistics 2006 (%)
17-29	247	51,8	20,5
30-40	65	13,6	17,4
41-85	165	34,6	62,1
Mode	24		
Mean	36,7		

TABLE 9c Demographic characteristics of the surveyed population. Education

Education	Survey 2006, frequency	Survey 2006, percent (%)	Corresponding data from Finnish national statistics 2006 (%)
Secondary, unfinished	35	7,4	35,88
Secondary school	157	32,9	38,29
Vocational degree	147	30,8	11,30
University level degree	138	28,8	14,54
Total	477	100,0	100,0

TABLE 9d Demographic characteristics of the surveyed population. Number of household residents

Number of household residents	Survey 2006, frequency	Survey 2006, percent (%)	Corresponding data from Finnish national statistics 2006 (%)
1	195	40,9	40,1
2	145	30,4	32,6
3 or more	137	28,7	27,3
Total	477	100,0	100,0

TABLE 9e Demographic characteristics of the surveyed population. Ownership

Ownership	Survey 2006, frequency	Survey 2006, percent (%)	Corresponding data from Finnish national statistics 2006 (%)
Owned housing	235	49,3	71,6
Rented housing	242	50,7	24,9
Right-of-occupancy housing	--	--	1,3
Other or unknown	--	--	2,2
Total	477	100,0	100,0

As one can see from the table 9 above, gender-wise the representation is rather equal, and in fact the corresponding data for the whole Finland concerning gender distribution is very similar. When it comes to age, the largest group is 17-29 (51,8%) – it is more than half of the surveyed population. The prevalence of young respondents is also confirmed by the mode of the distribution (most frequently encountered value in the distribution), which is 24 years. The average (mean) age of the respondents is 36,7. The fact that over half of the respondents are young is interesting when considered together with responses to other questions – as becomes evident later on in the chapter. When compared to the data from Finnish national statistics, one can see that the largest group by number is the oldest group (41-85), indicating that the Finnish population on average is not very young. The discrepancy between the survey data and Finnish statistics is probably due to the fact that student-interviewers tended to approach the interviewees of roughly the same age group as themselves.

The largest group in terms of completed education corresponds to the secondary education group – 32,9%. Again, coupled with the mode of 24 years in age distribution, this reflects the fact that many of the respondents are most probably students enrolled in educational institutions in order to obtain a higher degree. Actually, the differences between the percentages of the three groups (secondary school education, vocational degree and university level degree) are not that big: 32,9%, 30,8%, 28,8% respectively. In other words, the opinions of groups with different education levels are quite well represented in the survey. The smallest group in terms of education is that with unfinished secondary education (7,4%). The situation is almost the contrary when compared to the data from Finnish national statistics: the group with unfinished

secondary education is second largest (35,88%). However, as in the survey results, the group with completed secondary education is the largest (38,29). All in all, when comparing survey respondents by education to the data from Finnish national statistics, it appears that the survey respondents have significantly higher levels of education than the population in general. This is most likely due to the fact that university students were undertaking the interviewing, so they often chose among people similar to their educational background.

The distribution of the number of household residents corresponds to the assigned quotas, with the largest group being the single households (40,9%), and the two other groups being roughly equal (30,4% and 28,7%). As can be seen from table 8, the corresponding data from Finnish statistics is very much the same: in other words, the method of quota sampling ensured that the sample reflects the real structure of household sizes in Finland.

When it comes to the type of housing, apartments are most dominant (56,8%), while the next largest group is houses (27%) and the final group – row house apartments (16,1%). However, according to corresponding statistics in Finland 2006 (see table 8), the percentage of houses and apartments is about the same. This difference can be explained by the prevalence of young respondents in the survey who most often tend to live in apartments. According to the results, the ownership of the housing is roughly equal: 50,7% being rented and 49,3% being owned. Finnish statistics 2006 reports that the percentage of people owning their housing is higher than this – up to 71,6%. As previously mentioned, this difference is most likely due to the majority of survey respondents being comparatively young. Even though the demographic characteristics may not appear to be very telling on their own, when combined with other responses, they help to construct an interesting picture of the surveyed population.

Figure 13 aims to help visualize the geographical distribution of the respondents. Almost all the regions in Finland are represented except for five, which are nonetheless listed in table 10 among with other regions. Even though the clear majority of the respondents are from Jyväskylä region (Central Finland), it is not believed to contribute to a significant bias in the replies of the consumers. As mentioned above, one of the main goals of the survey was to construct an overall picture of consumers in the context of energy consumption and conservation. The picture obtained was validated in subsequent interviews with the representatives of the energy providers, who described the consumers in a way that agrees with the findings of the survey. Moreover, as will become apparent in the reporting of the interview findings, geography does not seem to play an important role in energy market segmentation; instead, other factors are seen as more important.

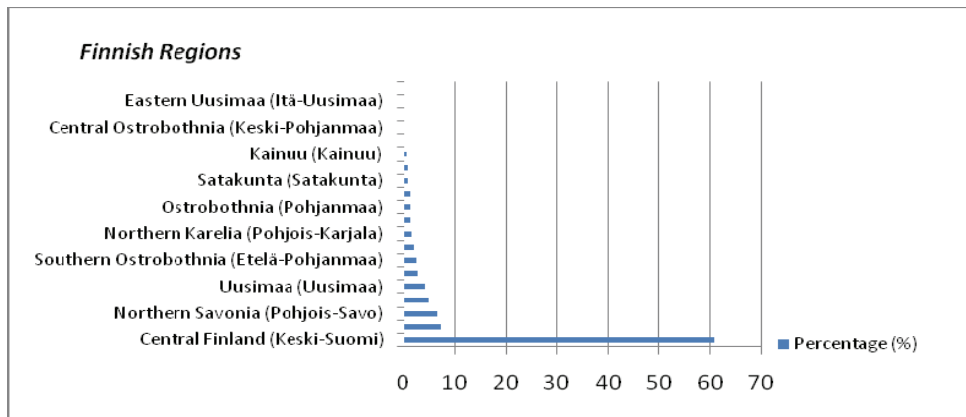


FIGURE 13 Geographical distribution of the survey respondents in Finland.

TABLE 10 Geographical distribution of the survey respondents by region in Finland.

Region in Finland	Frequency	Percentage (%)
Central Finland (Keski-Suomi)	289	60,6
Pirkanmaa (Pirkanmaa)	35	7,3
Northern Savonia (Pohjois-Savo)	32	6,7
Northern Ostrobothnia (Pohjois-Pohjanmaa)	24	5,0
Uusimaa (Uusimaa)	20	4,2
Southern Savonia (Etelä-Savo)	14	2,9
Southern Ostrobothnia (Etelä-Pohjanmaa)	13	2,7
Finland Proper (Varsinais Suomi)	10	2,1
Northern Karelia (Pohjois-Karjala)	8	1,7
Kymenlaakso (Kymenlaakso)	7	1,5

(continues)

Region in Finland	Frequency	Percentage (%)
Ostrobothnia (Pohjanmaa)	6	1,3
Tavastia Proper (Kanta-Häme)	6	1,3
Satakunta (Satakunta)	5	1,0
Päijänne Tavastia (Päijät-Häme)	5	1,0
Kainuu (Kainuu)	3	0,6
Lapland (Lappi)	0	0,0
Central Ostrobothnia (Keski-Pohjanmaa)	0	0,0
South Karelia (Etelä-Karjala)	0	0,0
Eastern Uusimaa (Itä-Uusimaa)	0	0,0
Åland Islands (Ahvenanmaa)	0	0,0
Total	477	100%

8.3.2 Energy profile and structural conditions

The number of energy companies mentioned by the respondents amounted to 142. However, from this number three companies in particular were identified as being the most popular providers of energy; a total of 52,4% of respondents were customers of the aforementioned companies. These three companies were therefore picked to be the targets for interviews during the second phase of the research. In order to keep the reporting as neutral and objective as possible, the names of the companies are omitted – they are referred to as EC1, EC2 and EC3. There was a large number of other companies, but these each had significantly less customers among the respondents, thus they were grouped as “others” in the results (see table 11). About 18,4% of the respondents did not know the company that provided their energy, which is most probably due to the fact that their energy bills are fixed amounts and made as part of their rent payment.

For instance, this is often the case for students living in the housing provided by the university.

TABLE 11 Distribution of customers between energy providers identified in the survey.

Energy provider	Percent (%)
EC1	28,7
EC2	14,9
EC3	8,8
Other companies	29,2
Don't know	18,4
Total	100,0

} 52,4%

In response to the question about how the current energy provider was chosen, 23,5% of the respondents mentioned previous experience as the basis for their decision. Almost equal numbers of respondents identified either the housing committee as the driving force in the selection of energy provider (17%) or a combination of different factors (17,4%). This has a potentially important implication for the energy companies (in terms of marketing segments), and in terms of structural conditions/institutions that frame consumer behavior. Interestingly, only 6,9% of the respondents relied on an advertisement as the basis for their decision, and even a smaller proportion (4,4%) consulted their friends or relatives on the issue – which points to the weak word-of-mouth effect in the selection of energy provider (see table 12). About one third of the respondents (30,8%) indicated that they did not choose the provider, which could be explained by the fact that half of the respondents rent their premises and this may have been limited their choice.

TABLE 12 Response to the question about how current energy provider to the household was chosen.

	Percent (%)
Didn't choose the provider (didn't choose)	30,8
Previous experience (experience)	23,5
Combination of different factors (combination)	17,4
Housing committee (h.committee)	17,0
Advertised well-known option (advertised)	6,9
Advised by friends or relatives (friends)	4,4

When cross-tabulated with basic data on whether the respondents owned their premises or rented them (p-value of 0,000), it was found that a large proportion of owners of their housing rely on previous experience for their energy provider selection (35,3%), while the largest share of those who rented their premises simply did not choose the provider themselves (44,2%). The results of cross-tabulation are presented in more detail in table 13.

TABLE 13 Cross-tabulation of the energy provider selection and ownership of the living premises.

		How energy provider was chosen? (%)				
Owner-ship	Friends	H.committee	Experience	Advertised	Combination	No choice
Own	6,0	12,3	35,3	7,2	22,1	17,0
Rented	2,9	21,5	12,0	6,6	12,8	44,2

Respondents' satisfaction with their energy providers is overwhelmingly positive: almost 75% are satisfied, while about 15,9% are partly satisfied; only about 3,1% explicitly expressed their dissatisfaction (see table 14). The remainder of the respondents were not sure whether they were satisfied or not (6,3%). Since only a very small fraction of the respondents were openly negative about their energy providers, it is possible to conclude that overall the customers appear to be satisfied and happy with the energy services they are currently receiving. Moreover, this result may also be considered a sign of a trusting and loyal relationship between energy companies and their household customers.

TABLE 14 Customer satisfaction with current energy providers.

Satisfaction with current energy provider	Percent (%)
Yes	74,6
No	3,1
Partly	15,9
Don't know	6,3

The next two questions provided more insight into the structural conditions of energy consumption in Finland. For example, it is possible to use the services of different companies for electricity and for heating. The number of respondents that pay their electricity and heating bills separately is about equal that which receive a combined bill (about 40% each). In addition, 19,3% indicated that their energy bills are part of the rent payment (see table 15). As described previously, according to the current system, energy bills that household customers receive are usually estimations based on the number of residents in a household and the type of household itself, while the final balancing occurs on a quarterly or even yearly basis. Therefore, the bills are not exactly descriptive or reflective of the consumption at a particular time period. Moreover, some combined bills might even be less descriptive, indicating just the overall sum (e.g. if the customer lives in an apartment block with central electrical heating). In this context, it is interesting to examine the results of the next question, which addresses the means of monitoring household's energy consumption. Here, 41,2% of the respondents monitor their consumption using monthly bills, while another 17% use energy meters for monitoring. Yet, as many as 36,8% openly admit that they do not monitor their consumption. On the one hand, this might

be an indication of low consumer involvement and interest in their energy consumption (especially if the bills do not make a significant part of the overall expenses). On the other hand, it might also be due to the fact that the bills are not very telling, do not provide timely feedback (as they are just estimations), or might even seem complex (as commented upon by the respondents in a few cases). However, it should also be kept in mind that 19,3% of the respondents indicated that their energy payments are part of the rent, so this could also be the reason why some do not monitor their energy consumption. Notably, a few of the respondents (1%) use web services for monitoring purposes. Table 15 combines the responses regarding the payment and monitoring of energy bills.

TABLE 15 Energy bills' payment and means to monitor energy consumption.

Electricity and heating bills	Percent (%)
Separate bills	40,0
Combined bill	40,7
Part of the rent payment	19,3
Total	100

Means to monitor energy consumption	Percent (%)
Monthly bills	41,2
Don't monitor their consumption	36,8
Energy meters	17,0
Other	4,0
Web service	1,0
Total	100

8.3.3 Energy habits, awareness and interest levels

The responses to the next set of questions allow certain conclusions to be drawn about consumer practices in energy use and their interest and awareness of energy issues. In fact, one of the survey questions addressed the issue directly by inquiring whether the respondent practices energy conservation in any way. Although one has to be aware of a social desirability bias when examining such responses, in this case, where the answer was positive, the bias was minimized by asking for a short description of such practices. Thus, 37,5% of respondents confessed to never having practicing energy conservation (at least intentionally), while a relatively large proportion of respondents (62,5%) answered positively (see table 16).

At the same time, when it comes to habits relating to lighting and heating it is interesting to observe that despite the social desirability bias, a noticeably smaller number of people replied that they regularly monitor room temperature (33,5%) than those who replied that they always turn off the lights when leaving the house (58,5%). Moreover, only 9,9% of respondents report not paying any attention to lighting, while almost one quarter of the respondents (24,5%) admit to not paying attention to the room temperature (see table 16). Based on these differences to the seemingly similar questions concerning consumer habits it is possible to imply that the respondents were being quite honest and reflective. It is also easily observable that although people try to behave more environmentally responsibly, they are quite passive in their efforts and prefer implementing actions that do not require much concentration and effort. For instance, turning off lights is easier because it is more obvious and does not require any special checks, while monitoring of the room temperature is more awkward and requires conscious effort.

TABLE 16 Consumers and energy conservation: implementation and practices.

	Percent (%)
Do you practice energy conservation in any way?	
Yes	62,5
No	37,5
Habits with lighting	
I always turn off the lights when I leave the house	58,5
Usually I turn the lights off, but sometimes I leave some on by accident	31,7
I don't pay much attention to the lighting	9,9
Habits with heating	
I regularly monitor the room temperature	33,5
I check the room temperature now and then	41,9
I don't pay attention/hardly notice to the room temperature	24,5

When cross-tabulated with gender, the results of the question about practicing energy conservation become even more interesting (p-value of 0,000). As can be seen from table 17 the proportion of women who claim to practice energy conservation at home is 71,5%, while the corresponding proportion of men is almost 20% less (52,4%).

TABLE 17 Cross-tabulation for the question about practicing of energy conservation at home with respondents by gender.

Gender	Do you practice energy conservation in any way? (%)		
	Yes	No	Total
Female	71,5%	28,5%	100%
Male	52,4%	47,6%	100%

When examined further, monitoring of room temperature reveals that it is dependent on the type of housing (p-value of 0,000). Cross-tabulation of the two questions shows that a significant proportion of those who reside in a house tend to monitor room temperature regularly (61,2%), while of those who reside in an apartment only 20,7% report that they monitor the room temperature on a regular basis. For residents of row house apartments the proportion is somewhat higher, 32,5%, but still considerably smaller than for the residents who live in a house. Thus, it is possible to conclude that heating practices and habits are definitely affected by the type of housing (see table 18 for details). In other words, apartment residents require more motivation to pay attention to their heating habits. On the other hand, it also means that there is much potential to reduce household energy consumption if apartment residents start to pay more attention to heating. However, one should not forget that lower interest in heating might be due to certain structural conditions, whereby apartment residents are not able to influence the room temperature. In this case, the key question is whether anything should be done, so that apartment residents would have more opportunities to influence the temperature within their homes.

TABLE 18 Cross-tabulation for the question concerning room temperature monitoring with the type of housing.

Habits with heating				
Type of household:	Monitor regularly	Monitor now and then	Hardly notice	Total
House,	79	44	6	129
Percent within category	61,2%	34,1%	4,7%	100%
Apartment,	56	119	96	271
Percent within category	20,7%	43,9%	35,4%	100%
Row house apartment,	25	37	15	77
Percent within category	32,5%	41,8%	19,5%	100%
Total	160	200	117	477
	33,5%	41,9%	24,5%	100%

The results concerning visiting the energy provider's website were of great interest to the marketing departments of the energy companies that participated in the subsequent interviews. Even though, on average, the respondents of the survey are quite young, more than half of the respondents never visited the website of their energy provider (62,9%). The proportion of the respondents that visit the website from time to time is only 23,4%, and 13,4% had visited the website just once. These numbers are striking if one considers that most of the respondents are probably active users of the Internet (considering the average age). It appears that the consumers are rather passive in their independent search for energy-related information. One possible explanation is simply the lack of interest in energy issues, and therefore a lack of motivation to browse an energy provider's website. The results are presented in more detail in table 19.

TABLE 19 Visit of their energy provider's website by the respondents.

Visit of the energy provider's website	Percent (%)
Yes, once	13,4
Yes, a few times	23,5
No, never	62,9
Don't remember	0,2

The willingness of the respondents to know more about how to reduce their household's energy consumption was explored using two questions. The purpose of asking a similar question twice was two-fold: to tackle the social desirability bias and to explore consumer sensitivity to financial incentives. Initially, the question was phrased so that consumers were asked if they would like to know how much they could save, in monetary terms, through energy conservation. This resulted in a high rate of positive responses (74%), the remainder being negative (26%). The second time the same question was posed differently making the emphasis on receiving information about energy conservation through a preferred (convenient) channel, with no mention of the financial aspect. As can be seen from table 20, the positive rate of responses went down to 66,8%, while the negative increased to 33,2%. Even though the difference may not seem very great, it does show that consumers tend to be more interested in energy conservation when there is a prospect of monetary gains. Thus, they would most probably be prone to financial incentives.

TABLE 20 Comparing consumer interest to know more about energy conservation in monetary terms to simply using a convenient channel for information.

	Percent (%)
Interest to know more about reducing household's energy consumption in money terms	
Yes	74,0
No	26,0
Interest to know more about reducing household's energy consumption through a preferred channel	
Yes	66,8
No	33,2
Not sure	Excluded*

*See section 8.2 (question 26) for a detailed description of the methodology.

In order to further explore consumer interest to know more about energy conservation, two cross-tabulations were performed. The first explored the relationship between the issue in question and the type of household of the respondent (p-value of 0,000). The results show that more of the respondents that live in a house (76%) are interested in knowing about energy conservation compared to the respondents that live in an apartment (56,8%) or in a row house apartment (51,9%). Once again, this confirms that the type of household has an influence on how interested people are in energy conservation. In addition, it is easy to assume that it is due to the role that energy costs play in a household. The results are presented in table 21.

TABLE 21 Cross-tabulation of the type of household of the respondent with the question concerning the interest to know more on energy conservation.

Type of household	Interest to know more on energy saving			Total
	Yes	No	Not sure	
House (frequency),	98	29	2	129
Percent within category	76%	22,5%	1,6%	100%
Apartment (frequency),	154	87	30	271
Percent within category	56,8%	32,1%	11,1%	100%
Row house apartment (fr),	40	29	8	77
Percent within category	51,9%	37,7%	10,4%	100%
Total	292	145	40	477

The next cross-tabulation sheds light on the dependency between interest to know more about energy conservation and the method of paying energy bills (combined or separate). The results of cross-tabulation are presented in table 22 (p-value of 0,002). As one can observe, among those who receive combined electricity and heating bills there are more respondents interested in knowing about energy conservation possibilities (70,6%), while among those who pay the bills separately the corresponding proportion is lower (58,1%), and it is even lower for those whose energy bill is part of the rent payment (50,8%). Based on these results, it is possible to suggest, for example, that those who receive combined bills would be willing to receive more detailed information about their energy consumption in order to understand it better, because they seem to be rather interested in energy conservation in general.

TABLE 22 Cross-tabulation of payment mode of energy bills with the question about consumer interest to know more on energy conservation.

Electricity and energy bill	Interest to know more on energy conservation			Total
	Yes	No	Not sure	
Separate bills (frequency),	111	62	18	191
Percent within category	58,1%	32,5%	9,4%	100%
Combined (frequency),	137	45	12	194
Percent within category	70,6%	23,2%	6,2%	100%
Part of the rent payment (fr),	33	28	4	65
Percent within category	50,8%	43,1%	6,2%	100%
Don't know (frequency),	11	10	6	27
Percent within category	40,7%	37%	22,2%	100%
Total	292	145	40	477

8.3.4 Information sources and channels

The responses to the next two survey questions are somewhat mixed because the response options about the information sources included both organizations (e.g. energy provider, NGO) and channels (e.g. TV) – this concern is openly acknowledged, but it is still worth examining the results, although keeping the limitation in mind. As is evident from table 23, about one third of the respondents (30,5%) report campaigns on TV, radio, and in newspapers as being their current source of information on energy conservation. Handbooks for household appliances also appeared to be an important current source of information (18,9%), and thereafter came guidance from the energy provider (13,4%). In line with the findings of the previous questions, the Internet did not score highly (7,5%) as a current source of information on energy conservation. Possibly, this is an indicator that energy conservation is not among people's

priorities in daily lives, so they are not willing to invest their time and effort into searching for information independently. It is also striking that environmental NGOs and local environmental centers scored very low (2,2% and 1,3% respectively), especially as compared to advice coming from energy provider. One could interpret this as an important indication of consumer trust into responsibility and quality of service from energy providers.

When asked about the best channels for information on energy conservation, the respondents again confirmed their overwhelming preference for TV, radio, and newspapers (22,4% and 18,6%). On the other hand, e-mail and Internet searching scored very low (8,8%). However, since only 3,2% report a complete lack of interest in information about energy conservation, one can assume that consumers simply were not actively interested in energy conservation, although they did not mind learning about it through more passive ways, such as TV and radio. Brief instructions in leaflets, symbols on packaging, and guidance in appliance handbooks scored almost equally (table 23), so it was difficult to highlight any real preference among these channels.

TABLE 23 Current sources of information on energy conservation and information channel consumer preferences.

Current source of information on energy conservation	Percent (%)
Campaigns on TV, radio or in newspapers	30,5
Handbooks for household appliances	18,9
Guidance and advice from energy provider	13,4
I don't pay attention to such information	10,6
Internet search	7,5
So far I haven't received any such information	5,3
Consumer organizations	5,3
Other	5,0
Environmental NGOs	2,2
Local environmental centers	1,3

(continues)

What is the best channel for receiving information on energy conservation?	Percent (%)
TV and radio	22,4
Newspapers	18,6
Brief instructions in a leaflet	16,7
Symbols and pictures on packaging	14,8
Handbook for household appliances	14,2
E-mail and Internet search	8,8
I'm not interested in that kind of information	3,2
Other	1,4

8.3.5 Attributed responsibility

The findings of the question concerning the responsibility of energy industry actors to provide information about energy conservation turned out to be rather surprising, although in line with the findings related to the previous survey questions. A level of 25,6% of the responsibility to provide such information was attributed to energy providers, while manufacturers of household appliances was attributed 22,3% and retailers of household appliances 16%. Notably, taken together, these three types of private industry actors were attributed over 60% of responsibility. As can be seen from table 24, state and non-governmental organization scored comparatively lower. For example, contrary to the seemingly logical assumption that educational institutions would score highly as actors that provide information, they scored only 6,2%. Thus, as mentioned above, these findings also indicate that not only do consumers expect good quality service from private energy industry actors, but also they expect to be educated and informed by them. At least it seems that household consumers allocate the responsibility of energy education to the key private industry actors much more than to the others. The most important implication of this finding is that these three energy industry actors have great power and influence on consumers, which could become even greater if they

choose to closely co-operate with each other on certain issues, e.g. energy conservation.

TABLE 24 Attributed responsibility for providing information on energy conservation options to consumers.

Responsibility for providing information on energy conservation options to consumers	Percent (%)
Energy providers	25,6
Manufacturers of household appliances	22,3
Retailers of household appliances	16,0
Local environmental centers	13,3
Environmental organizations	7,0
Educational institutions (schools and universities)	6,2
Energy industry association	5,8
Industrial association of appliance manufacturers	3,3
Other	0,6

8.4 Summary of the survey findings

Key findings of the survey are summarized below, highlighting the issues that continuously emerged in the different parts of the survey.

8.4.1 Demographics

Concerning the demographics of the surveyed population, it is important to keep in mind that the average age of the respondents was 36,7 years, while the mode in the distribution was 24 years. This means that the surveyed population is rather young, and has the necessary skills, knowledge to widely access information.

It is also worthy of note that roughly half of the respondents owned their housing, while the other half rented their living premises. As became apparent, the ownership factor seems to be important in the context of energy conservation.

8.4.2 Energy consumption: structural conditions, habits and interest to know more

According to the survey results, previous experience is typically the main criterion for selecting an energy provider. However, other factors – such as housing committees and a combination of different factors – also seem to be quite important. On the one hand, in the context of energy conservation it is important to bear in mind how housing committees frame consumer behavior, but on the other hand, the factor of previous experience is a valuable observation for marketing. In addition, previous experience gains even more importance when consumers own their housing. In cases where the housing is rented, the majority of the consumers do not choose the provider themselves. Here the issue of structural conditions that frame consumer behavior, to a certain extent, comes up again.

Quite a noteworthy number of respondents admitted that they do not monitor their energy consumption (almost 37%). Partly, this is again due to the structural conditions – since, for instance, in student housing energy payments are fixed amounts that constitute part of the rent payment. Another explanation is the overall low consumer involvement with energy issues, especially if energy expenses are not noticeably large in a person's budget. It is also possible that people do not monitor their energy consumption because energy bills are quite often confusing and do not describe real-time energy consumption, but rather represent estimates.

Almost 38% of the respondents confessed to never having practicing energy conservation intentionally; this is a comparatively large number considering the tendency for positive bias in consumer self-reporting. However, as becomes apparent from other questions, consumers do not mind receiving information about energy saving options, especially if it is associated with monetary gains. In other words, consumers might be sensitive to financial incentives in the area of energy conservation.

Based on consumer responses about their habits with lighting and heating, it is possible to imply that positive bias in responses was minimized. The findings indicate that consumers implement energy conservation practices that do not require much effort or concentration much more willingly. Thus, the majority of consumers regards the issues of energy conservation positively, but is rather passive in implementation.

Interestingly, the proportion of women who claim to practice energy conservation is significantly higher than the corresponding proportion of men.

Further analysis of heating practices revealed other factors that affect energy behavior in households. For example, the household type influences the monitoring of room temperature by consumers. Simply put, those who reside in

a house (whether they own it or not) pay much more attention to the temperature. Moreover, a self-declared interest to know more about energy conservation was found to be more pronounced among house residents (as compared to apartment residents). In other words, apartment residents appear to be more passive when it comes to energy conservation. Thus, they would need more motivation to become active, although one should not forget that the lack of interest might simply be due to limiting structural conditions. In this case, it is worthwhile thinking how structural conditions could be altered, so that apartment residents would have more opportunities to become involved with energy conservation.

An interest to know more about energy conservation also proved to be stronger among those who receive combined electricity and heating bills (as opposed to separate billing). Based on this fact, it is possible to assume that these consumers would also like to understand their own energy consumption better. However, the group that demonstrated the lowest interest towards energy conservation was that whose energy bills are a part of rent payments. This could be again an indication that consumers need to be financially motivated to take more active interest in energy issues.

8.4.3 Information sources and the responsibility of energy industry actors

Low consumer involvement with energy issues became most apparent with regard to visiting an energy provider's website. Considering that the surveyed population is young, it is striking that over 60% never visited their energy provider's website. Consumer passivity was also manifested in their preference for TV, radio, and newspapers as the main channels for receiving information on energy conservation. Means for an independent search (such as Internet browsing) scored very lowly, which indicated a lack of interest and lack of motivation to spend time and effort on search. On the other hand, only about 3% did not express any interest in receiving such information through other channels (such as TV), which means that the overall consumer attitudes are positive even if they are passive.

The survey findings indicated several times that consumers both trust in the quality of services that they get from their energy providers, and expect responsible decision-making and conduct from them. Firstly, the overall satisfaction with energy providers was high. Secondly, consumers reported energy providers as currently being one of the important sources of information on energy conservation. And thirdly, consumers attributed the responsibility for delivering this information to three business actors from the energy industry: energy providers, manufacturers of household appliances, and retailers of household appliances. As mentioned earlier, this means that these actors have great influence on consumers. Thus, there is great potential to promote energy conservation should these three actors decide to co-operate on the issue, and address it in a creative, concerted, and reinforcing way.

As a final remark, it is worth emphasizing that key issues emerging from the survey in connection to energy conservation in households come down to

positive overall attitudes but rather low consumer interest; consumer sensitivity to financial incentives and related factors (e.g. type of housing, mode of energy payments); the importance of the structural conditions in promoting or limiting consumer involvement; and the potential to promote energy conservation through co-operation of energy providers, manufacturers, and retailers of household appliances due to consumer trust and expectations.

9 COMMUNICATING ENERGY CONSERVATION TO HOUSEHOLDS: THEMES, STRATEGIC ASPECTS AND CHALLENGES IDENTIFIED IN THE INTERVIEWS

9.1 The interview process

In total, six interviews were conducted with the representatives of three energy companies between May and November 2007. Although the interviews were kept as unstructured as possible, a few questions were prepared in advance in order to keep the interview running naturally should the interviewee have difficulties in elaborating on a certain topic. The list of the questions is presented in Appendix 2. Johnson & Turner (2003) classify this approach to interviews as the “interview guide approach” – its main features are the list of pre-specified topics, which can be reworded as needed in the course of the interview, and can be covered in any sequence or order by the interviewer. The interviews typically started with a few conservation-openers that allowed the interviewee to learn more about the research and about the background of the interviewer, as well as to say more about her/himself. Most of the questions employed during the interviews were of a descriptive nature, since these types of questions most encourage eliciting large amounts of information (Sayre 2001). For instance, many of the questions in the interviews started with “How would you describe...?” In addition, to make the flow of the interviews even more natural and relaxed, the interviews were conducted within the working premises of the interviewees: either in their office rooms, or in one of the meeting rooms of their company. Davies (2007) comments that providing natural, predisposing settings for the interview is one of the key factors to the uninterrupted flowing conversation.

As mentioned earlier, the exact job titles of the interviewees varied, but their tasks were closely connected with marketing and communication to the household sector. Thus, the interviewees were either in charge of the household sector within the energy company, or were directly responsible for

marketing/communication with household sector consumers. The exact title of the research was not revealed to the interviewees, but rather they were informed in more general terms that the research was focusing on communication between energy companies and household consumers. Naturally, in order to avoid more direct and focused questions, four main themes were created that served as the axes for the interviews: the energy itself, energy companies and industry, household consumers, and communication. Thus, the reporting of the results is organized around these themes. The analysis of the interview data was conducted using a thematic analysis technique; identifying the “themes” and categories that extend beyond a single interview, and across all of them. After several readings of the transcriptions, the data were organized into four tables (corresponding to the four large themes), each of which contains more specific sets of categories that were characteristic of one of the topics. The number of categories for each table varies, and each category contains direct quotations from different interviews, which were later grouped to form certain “themes” within a given category and across them. A sample table is presented below to illustrate how the data were organized for analysis (table 25). The findings from the interviews are presented in four parts, according to the four larger themes that are discussed in detail using the descriptive sub-themes, which were identified in the categories. The sub-themes within each category, their intensity and extensiveness allow conclusions to be drawn about the structure, content, and priorities in communication between energy companies and household consumers, as well as about the assumptions and perceptions prevalent in companies about certain issues.

TABLE 25 Household consumers, interview results (sample table).

Description of, characteristics	Expectations	Preferences
1. Interviewee XX, company XX		
But when prices go up - of course customers are worried about the total cost, which is based on volume;	Fair treatment, fair service and prices;	People feel it's their right to choose what they do with energy;
2. Interviewee XY, company XX		
Customers have become more active in the past 2-3 years for two reasons: electricity prices have gone up.. , and environmental issues became visible;		...there are certain groups that we don't want to overload with information;
Common sub-theme: price sensitivity, higher prices as drivers for increased consumer activity		

Based on what constitutes the content of the categories, the prevalent sub-themes are summarized towards the end of each larger theme. In other words, this chapter will provide four summaries for four corresponding larger themes, as well as a common final summary at the end of the chapter in order to aggregate, merge and finalize the themes.

Before the findings are presented, it is worthwhile noting that many of the sub-themes identified were found to belong to many different categories and wider topics. This is due to the fact that there is much overlapping discussion between the different categories, and it was often challenging to “artificially” delineate pieces of interviews into strict categories. For instance, the topic of “communication” includes such category as “channels”, where interviewees describe the variety of channels used in communication, their usefulness, advantages and disadvantages, and promising developments. However, “communication” as a topic also includes a category entitled “problems and challenges”, which was used to describe the challenges of communication. Thus, whenever interviewees described communication challenges related to a specific channel it was difficult to decide how to categorize that information. In the process no particular rule was elaborated in connection to such instances, instead each was simply treated on a case-by-case basis. On the one hand it highlights the degree of subjectivity characteristic of qualitative methods, but on the other it did not distort in any way the findings of the research since once the sub-themes from the different categories were identified, they were analyzed and aggregated when necessary to produce a more comprehensive and consistent picture of the findings. The categories were essentially used to facilitate the processing of the large amount of text, but once the processing was completed some of the resulting sub-themes were merged and aggregated for more concise and clear reporting. The categories are not actually utilized in reporting because they are quite neutral and not very telling on their own, instead the sub-themes are reported under each of the larger themes. The names of the sub-themes are quite descriptive and immediately provide the reader with leads concerning the content, making it easier to follow the flow of the report and to search for specific areas of interest.

The quotes from interviewees in the text are presented using “*italics and double quotation marks*” in order to clearly indicate the wording of the interviewees. As it was not the intention of the research to compare the opinions of the representatives from different energy companies, the quotes in the text do not contain any indication as to exactly which interviewee (and from which energy company) is being cited. The basic reason is that it would not provide any value to the reader, and would not contribute to the research findings in any way. The only noticeable differences between the opinions expressed by the interviewees were related to the size of the energy company. These differences are clearly addressed in the reporting by simply indicating (whenever applicable) that one or another opinion should be considered in the context of the company’s size, taking into account the limitations and/or peculiarities of being a bigger or a smaller company in the energy industry.

9.2 The findings from the interviews

9.2.1 Energy as a product

In order to set the background for discussion of interview results, it is interesting to first understand such issues in terms of how the topic of energy has evolved in the general discussion, how it is perceived as a product, what kind of special features are characteristic of energy as a product, and how sustainable energy use is perceived in the corporate context.

In the general discussion

Notably, most of the interviewees emphasized the role of the general discussion in how awareness and understanding of energy issues increases in society. In fact, it was the general discussion of climate issues that brought energy as a product to the attention of the public. The interviewees made a point that now people are able to better relate climate issues to their personal consumption, while earlier the relationships between these issues were not so clear to the average consumer: *"...climate change that they have sometimes heard talking about, but could they connect that to their own electricity usage? No."* Moreover, the discussion also brought under close scrutiny the activities of energy companies, which actually resulted in more communication from their side: *"..environmental or climate issues are creating more pressure... that we need to be doing... and explain that we are doing this because our customers were wishing it and advising us to do so.."*

In addition, among energy related issues that interest the public as a result of the general discussion is the capacity of energy supply and demand: *"...do we have enough resources to make sure that everyone gets enough heat and electricity... I think that people are actually waiting for energy companies to clarify those issues"*. Thus, energy companies tend to perceive it as their role to reassure people that there is a sufficient supply of energy, whatever the winter would be like.

All in all, people are becoming more aware due to the general discussion of climate change and related energy issues. Energy companies recognize that consumer expectations and interest towards both energy and its providers are rising. However, they also highlight the fact that much influence on consumers is produced via media coverage of governmental decisions, which in turn reflects on the way energy companies operate. It is interesting that the interviewees, despite portraying their own companies as proactive trend-setters, emphasized that general discussion as probably the most powerful instrument when it comes to consumer awareness: *"The influence comes from... by the political decisions, and... when journalists are writing about these decisions, which reflects to energy companies, and etc... Via that process customers get aware.."*

Bulk and uninteresting

One of the main characteristics of energy as a product is that although it is one of the essentials, it is of very low interest to consumers. The interviewees admit that energy companies have to “*compete for people’s attention*”, but due to the invisible nature of energy (electricity especially) the companies feel disarmed because energy does not appeal to any passions, people do not relate easily to it as it is a “*bulk product*”, and “*you can’t make it so interesting*”. On the other hand, this means that in the case of energy companies all the attention is shifted to the things that surround energy – to how companies act, how they price their products, and what they do for society. All interviewees commented in one way or another that “*...we cannot make electricity different, but the things around it we can..*”. In other words, differentiation in energy industry on the level of household consumers often happens through issues that surround production and consumption of energy. For instance, one of the interviewees observed that electricity has always been considered more like being part of the infrastructure, thus people perceive electricity as something similar to water that comes from the tap, and “*it is a bit of impacting still our business*”. In other words, the important implication here is that people’s perceptions have a great impact on how business is being conducted in the energy industry.

How does differentiation happen?

Currently, what businesses see as important to consumers in connection to energy are its cost (consumer price), convenience, reliability, and environmental issues. The pricing remains to be the most decisive factor for the majority of consumers: “*...the reputation is important but only in the last game – where they [consumers] choose the three most economical companies...*”. Nevertheless, the variation in terms of price when it comes to electricity is very small. Thus, other factors like convenience and reliability of service, as well as environmental issues come into play. Convenience, for instance, is a major issue – many people feel that they are ready to pay a little more for easy solutions. As one of the interviewees pointed out: “*People want easy energy, they want security, they want easiness... and they are ready to pay for it...*”. In this sense, the reputation of the company is extremely important in terms of how fast can one become a customer, how smoothly the process happens, whether it involves a lot of bureaucracy, whether the company can provide ready-made solutions, and whether the company is able to provide high quality customer service (e.g. accurate timely invoicing, customer friendly phone service). Another interviewee suggested that the reliability of deliveries is number one for customers, while everything else, information in the web, environmental issues, etc, are secondary.

However, due to increased interest towards climate and energy issues, energy companies find it important to address environmental issues in their branding and communication. In fact, environmental issues are often used as a “*spearhead*” in communication – that is, they are utilized as a weapon to break

through the bulkiness of electricity's nature and get consumers more involved and interested in a particular company. This position can be summarized by quoting one of the interviewees: *"The prices are high, and then the climate is hot topic... so that's the reason why we bundle it together right now"*.

Understanding low media spending

According to the interviewees, another peculiar feature of energy as a product is low media spending on branding, advertising, etc. (*"...the media spendings in energy sector are extremely low.."*). This situation is most likely due to the fact that energy is difficult to differentiate, so energy companies compete by means of reputation rather than through product features. Since corporate reputation typically cannot be established through advertising, energy companies invest comparatively less in media spending than what is the practice in other industries: *"...if you think of any other industry, I mean, they are doing advertising and that kind of brand campaigns all the time, but the energy sector is totally different"*.

Competition in terms of reputation is tougher as it relies much more on customer experiences, because the energy that the customer gets remains the same no matter what, it is the quality of the service that mainly counts. As yet there are too few companies that position themselves as offering a completely different product – e.g. green energy exclusively – while all of the existing energy companies have already proceeded to make sure their product offerings include greener energy packages. Instead of advertising investments, energy companies tend to build up their reputation by raising and maintaining the discussion around topical issues like security (and sufficiency) of supply (which for the end customer mean reliability of services), and climate change issues (which in more practical terms comes down to greener offerings and energy conservation advice). In essence, by addressing these concerns the consumers energy companies try to gain trust and solidify customer relationships they already have.

Sustainable use of energy is "wise use": no purposeful wasting

An interesting trend that emerged during most of the interviews was the way the interviewees referred to *"wise energy use"*. The interviewer did not introduce this term, however it was used by representatives of every energy company that participated in the study. In fact, the interviewees usually referred to giving advice on energy saving as to *"advice on how to act wisely"* and *"telling about how to use energy wisely"*. Also, interestingly, when confronted with an inquiry to describe what is sustainable energy use, all interviewees had difficulties and emphasized that they could not give any definition. However, when encouraged to describe it in their own words, they emphasized the aspect of purposeful wastefulness, and the fact that Finnish consumers almost never (very rarely) waste energy (or anything) on purpose. In other words, the understanding of sustainable energy use is closely connected to the notion of not being wasteful, and especially on purpose. Rather, as most of the

interviewees pointed out, it is the fact that many people do not know about what is wasteful and what is not. Thus, sustainable energy use is, for instance, about:

- *“..being aware – if you don’t know, you can’t make corrections..”;*
- *“..taking most of the electricity use, not wasting..”;*
- *“..no people is actually wasting energy on purpose, it’s rather the fact that you don’t know where the energy is going from, and you don’t understand..”.*

All in all, wise use of energy is identified with making smart choices both in terms of every-day actions (e.g. *“putting lid on the pot”*, *“using appliances wisely”*), and in terms of more significant decisions, such as greener vs. conventional electricity products, insulation, and heating options in the house. Wise use of energy is about avoiding wasteful attitudes too, and finally wise energy is the way to simply refer to sustainable use of energy. This is an important finding if one considers that energy companies operate according to consumer perceptions, and that while the word “sustainable” might not mean much to a person in practical sense, the use of the term “wise, wisely” is apparently how one thinks about personal consumption and behavior in Finland. Moreover, keeping in mind that people would probably avoid being perceived as “wasteful on purpose”, it might be a viable option to direct communication towards the description and emphasis of what is considered wasteful, in addition to general education and awareness raising about the “wise” practices.

Summary

The findings of the energy-as-a-product theme suggest that due to its invisible and bulk nature, energy is a special product whose strongest differentiation factors are price and corporate reputation (especially in terms of reliability and convenience). Thanks to the general discussion, rising consumer awareness in climate and environmental issues has led to corporate reputations being considered in environmental dimension, along with other dimensions.

Due to the importance of the reputation factor in energy business, companies spend much less on branding and advertising, and instead try to build up their reputation via other means. For instance, demonstrating corporate achievements in order to maintain solid reputation is implemented via active participation in the general discussion on topical issues, such as security of supply and climate change. The participation in discussions provides energy companies with ways to highlight corporate activities and achievements in the discussed areas in order to secure consumer trust.

Sustainable use of energy, as described by representative of energy companies, is associated with *“wise use”*. They believe that the majority of consumers are never being purposefully wasteful, so the failure to use energy wisely is most often connected to lacking understanding, knowledge, or awareness. An important implication here is the notion of “wise” being more understandable and easier to relate to for people (as compared to “sustainable”).

Thus, it might prove more effective to communicate the examples of what being wasteful means, as well as giving directions on more wise energy use, rather than talking about sustainable energy use.

9.2.2 Energy companies

Themes that came up in connection with energy companies mainly address their consumer approach, strategies, and their changing role in society. Much of the discussion actually evolved around the challenges in reputation and image building, hence the description of strategies to deal with these challenges, which are typical for the energy industry. Notably, the size of the energy company is important, as it seems that bigger companies face more image challenges.

Good citizenship and proactivity in response to customer needs

The good citizenship theme emerged inevitably in connection to the role of energy companies in society. Most of the interviewees made it clear that due to the scale of the impact that energy companies have on the environment and society, it is a must within the industry to abide by the good citizenship model: *"...this industry really honestly has a big impact on the future of the whole globe, so I think that the specialty in the industry is that we have to bear that responsibility.."*. Interestingly, good citizenship implies improvements both on the production side (e.g. *"...replace oil-based generation with biofuels.."*), and on the consumption side. The latter is addressed through providing tools and solutions for customers that enable them to act more environmentally (e.g. greener energy packages; advice on energy saving), and through the actual promotion of *"the consumer power to choose"* (e.g. between providers, choosing more responsible ones). Thus, it is implied that the responsible provider not only gives the consumers the possibility to choose green products, but also guides them to manage their own consumption in order to become more environmental.

This approach has been termed by at least one of the interviewees as *"proactive"*. The interviewee emphasized that contacting their customers proactively, taking interest in their needs and providing solutions and tools to fulfill these needs is the key to building long-term and trustful relationships. Here, for instance, is how the interviewee described possible customer feelings in response to proactive advice of the energy company: *"Ok, they actually contacted me proactively, and my electricity went a bit down, I want to be with them for a longer time..."* In fact, many of the interviewees pointed out that increased sales are no longer the most important goal in the household sector; instead the focus on customer needs comes first in order to build long-term relationships: *"...our biggest goal is to secure the existing customer base we have... I would say that we want to focus on the customer loyalty, we want to keep the customers we have and we want to keep them satisfied..."*.

The focus on customer needs appears to be very strong in the energy sector, and it is probably again connected to the nature of energy as a product

(i.e. being invisible) – this factor strengthens the trend of focusing directly on the needs, rather than on certain features of the product. However, it is notable that the focus on customer needs is different depending on the size of the company. For example, smaller local companies strongly position themselves as the experts on understanding and knowing the needs of the customers: “...they [employees] know the surroundings, and they know the local needs...” In other words, bigger companies struggle much more with being perceived as impersonal, and have to invest more effort into demonstrating to customers how they are ready to meet their needs.

Securing reputation and warming up the image

The interview findings indicate that bigger companies face the problem of being perceived as “cold” and “somewhat distant”. For instance, as one of the interviewees put it: “We are the bad guys in a way”. Another interviewee observed that contrary to what many might think, the goal of marketing in the energy industry is often not about increasing the number of customers, but about softening the image of the company. As became evident, much of the communication content is directed towards picturing energy companies as a “personality” and towards “building a warmer image”. Even smaller companies try to build their communication in such a way that they are perceived as a “popular companion”, who understands and fulfills the needs of the local customers.

In practice, such an image is often achieved via a good reputation and friendly advice-giving to customers. One way to promote the good reputation is promotion of a greener range of products in addition to conventional electricity supply – this is what many energy companies have done, emphasizing both their greener developments and improving the corporate image at the same time: “...what we have done – you’ve probably seen on TV, we’ve been telling about our Norppa [environmentally-labeled electricity], we’ve been in the local papers, we talked to our own customers and so on..”. Another means open to the companies is to outline that their activities are not just profit-making, but also doing good for the people: “...we want to be good company to our customers, and we want to help them to use right and properly, and wisely our products.. I think this is part of the good citizenship and good corporate image”. Thus, advice-giving is seen as an instrument to promote the good image of the company. As was discussed previously, maintaining a good reputation requires that companies address topical issues in their communication, so by combining the discussion on climate change and practical tips on the implementation of energy conservation practices, energy companies attempt to gain consumer trust, secure the reputation, and initiate more interest, involvement, and loyalty from consumers.

Visibility as a long-term strategy

The majority of the interviewees admitted that despite modest media spending on advertising, the most important strategy in the energy sector is staying visible, especially in its own area of distribution: *"...we want to be constantly visible in our own network area"*. Understandably, it is an important issue in the business where retention of the customer base is one of the key goals. Moreover, (positive) visibility is a tricky goal in the energy business, where consumers do not pay too much attention to different brands or company names: *"In Finland, as I said, that the brands don't differ in people's mind that much... So, if you go on the street and actually ask from an average consumer that – how many energy companies can you name? You're lucky if you get three names"*. Another challenge is keeping visibility positive since many energy companies are attacked in connection to, for instance, their production processes, construction of new power plants, unfair remuneration procedures in top management, etc. Thus, energy companies are also forced to deal with negative visibility: *"...even though the environmental organizations would be highly critical to us, we try to show appreciation"*.

According to the findings, it appears that there are at least two main ways by which energy companies strive towards positive visibility in society. Firstly, they try to participate in ongoing discussions and to be active members of the discussion, introducing and promoting positive practices: *"...to be an active part of discussion, to provide solutions, and to be visible in this – that's the role I would like us to have"*. Some of the interviewees referred to the campaigns their companies have been doing in connection to climate change in order to demonstrate their responsible attitude and preparedness to cooperate and act, while others observed that large scale campaigning is not always a feasible strategy and compared it to *"screaming"*. Instead some companies prefer to spend less on large campaigns, and invest more on more consistent calm communication: *"...we want to be more like... instead of screaming – talking all the time"*. The latter path refers to so-called reassurance communication to customers, which will be discussed in more detail in the section on communication. In reality, the two paths are not mutually exclusive, and in practice most energy companies end up implementing both, with various degree of balance between the two.

Interestingly, the interviewees noted that the best results are achieved via real interaction with customers, for instance: *"...staying visible by organizing happenings for customers"*. However, as will become evident in later sections, interactive communication is still very much in development, and much of the communication between energy companies and household consumers still remains a one-way flow.

Energy conservation promotion and the lost kilowatt hours

The attitude towards the promotion of energy conservation inside energy companies proved to be very enthusiastic and practical at the same time. The interviewees referred to giving information about energy conservation as a

natural response to the consumer needs of today, e.g.: *"...if the need is to decrease energy consumption, that is what we will then reply to.."*. On the one hand, it is obvious that energy companies are emphasizing that long-term customer relationships are important to them, and that the most essential thing is to keep customers satisfied and happy: *"I think that the only way to build those [long-term relationships] is actually to advise customers how to act wisely"*. On the other hand, one can definitely trace the strategic logic behind the simple ambition to keep customers happy. This logic is connected to the scarcity of natural resources, and especially the scarcity of non-renewable energy sources, which is becoming ever more apparent with time. One of the interviewees referred to it rather openly when discussing the goals of energy companies: *"...because we all know that at some point there will be a time that we don't have that much energy as we would like to have... So, and if we don't have customers, then we don't have anything to sell actually"*. Thus, retaining a stable extensive customer base, rather than increasing the sales per person seems to be a rational choice in the long-term for energy companies.

Nevertheless, the logical arguments presented by the interviewees somewhat lost their persuasiveness against the backdrop of subtly disbelieving remarks about consumers. For instance, one of the interviewees observed that: *"Customers can save only small amounts of electricity, which does not reflect on company's sales"*. Another interviewee made more precise estimations concerning the effectiveness of consumer energy conservation: *"...and households consume about 20%... So it's not marginal, but it's not so big... big share in total picture... For example, if households will save 10% of their energy use – it will not reflect very dramatically"*. Thus, in practice, in the perceptions of energy companies the benefits of promoting energy conservation outweigh the potential losses. Partly this is related to how energy companies perceive Finnish consumers and their potential for savings – which is discussed in more detail in the section on household consumers. Yet, partly it is due to the fact that a positive image and resulting consumer loyalty are thought to bring much more to the company than potential losses in sales: *"Promotion of energy saving increases loyalty, improves brand image – we don't worry about the lost kilowatt hours"*.

The new role: hub for solutions

In fact, promotion of energy conservation by energy companies today seems to be a popular practice rather than an irrational oddity. Even in the words of one of the interviewees it is *"something that almost all utilities have done"*. So, it is interesting to examine how companies have come to it.

Almost all interviewees observed that the role of energy companies has changed over time, today energy companies do not just sell energy, but rather – they are perceived as *"..the hub in the network of giving customer solutions.."*, *"..not only supplier of electricity or heat, we are somehow also energy consulting"*. The findings from the interviews clearly indicate that energy companies today aspire to fulfill a much wider scope of activities than simply being a supplier.

The change in perception towards the role of energy companies explains why energy conservation promotion is viewed as something logical, rather than controversial. This change seems to be the result of strategic involvement and considerations of how consumer expectations have changed over time: *"..we know that people expect us to give information about the saving, and they want to know that we are a good corporate citizen.."* Thus, as discussed previously, communication of energy conservation advice is expected to fulfill several functions for the energy companies. Besides the information alone, it is an important tool in the area of brand, image and reputation management.

In terms of how the shift has occurred, it is worthwhile considering the changes in society and in the energy markets. As one of the interviewees observed, the retailing business in a deregulated energy market first filtered out many of the "unnecessary" activity areas. In particular, the provision of energy saving advice was found to be one such area due to energy prices being low, and hence the total cost of energy services not being that significant. However, over the last several years interest towards climate change and environmental issues has been steadily rising, and along with them so have energy prices. The key triggering issue, perhaps, was the change in the market system and the resulting consumer freedom that prompted energy companies to compete more: *"I think that at first when the deregulation started it was a lot simpler, and the industry didn't promote this consumer freedom to the extent that it does now."* In summary, all of these emerging new challenges have led to the slow transformation of energy companies' role, assigning more responsibilities to them, but also introducing more opportunities in the context of service provision. Today energy companies recognize the opportunities, but it seems that the uncertainty of how consumer preferences will be developing has been holding much of the development back. Thus, in order to fully understand the situation one needs to understand just how energy companies currently perceive household consumers in Finland.

Summary

Promotion of energy conservation to household consumers is a common practice among energy companies today. In the context of rising environmental pressures, increasing consumer freedom, awareness and expectations, and under the pressure of competition, the role of energy companies in society has been transforming from suppliers into energy consulting and acting as the provider of solutions. Among the driving factors of proactive responsible communication are the peculiarities of operating and competing in the energy sector, such as the need for energy companies to constantly remain visible (especially in their own distribution areas) despite low media spending, as well as the need to secure corporate reputation and image via active participation in the ongoing discussions in order to demonstrate the responsiveness to current consumer needs. The transformation of energy companies into the future hub for solutions is undermined by uncertainty concerning the development of consumer preferences. This uncertainty is closely examined in the following section on household consumers.

9.2.3 Household consumers

Since companies usually act and elaborate their strategies based on how they perceive consumers and their preferences, this section proceeds to describe corporate perceptions in the energy sector of their household customers. The description of current consumers' characteristics also benefits from the insight into the change in expectations that has occurred over time with regard to energy services. The way that energy companies perceive consumers also shows what kinds of challenges exist in consumer communication today, and what are the consequences for the development of energy services in the future.

"A history of not being that interested" and more recent trends in consumer awareness

According to the interviewees, the best characteristic of consumers is that they are becoming increasingly interested in environmental and energy issues, even though this process might be happening slowly: *"..the amount of active people have been raising gradually.. not very fast, but gradually.."*. The degree of just how active and interested consumers are today varies from interviewee to interviewee, but they all do agree that thanks to the general discussion the interest is now much more than it used to be.

The level of awareness and consumer activity is evaluated by energy companies based on the number of people who choose to buy green energy, and also based on the number of environmentally-related questions coming from consumers. For instance, when it comes to purchasing green energy one of the interviewees observed that *"Normally, there were just marginal groups, which were buying green energy... But now there are also, let me say, normal consumers, which want to do something for the environment."* In other words, buying green energy becomes less of an oddity, and more part of an ordinary thing to do, in the same way as buying recycled paper products. However, another interviewee pointed out that perhaps only about 10% of their customers are interested in green products, but due to the higher prices the number that actually buy them is even smaller. It also became apparent during the interviews that consumers' interest towards energy companies is increasing since they have realized that these companies have a large impact on the environment, thus *"..the amount of environmental or CO2-related questions is raising all the time.."*

As discussed previously, among the major influencing forces on consumers is the general discussion, which has helped over the last several years to turn the interest of consumers towards their own consumption choices and practices as well as towards energy companies. In addition, all interviewees claimed that prices are probably the most powerful way to attract the interest and raise awareness at the same time. Indeed, it appears that while the general discussion stimulates mostly awareness, prices are the driving force for activity levels of consumers: *"The high prices are the drivers, that's why customers are a bit more active now, switching suppliers."* Even though with regard to a time

perspective, most interviewees confessed that *“it has been a history of customers not being that interested”*, they now recognize that customers become active because *“electricity prices have gone up, become more volatile...”* It is also interesting that one of the interviewees mentioned customers being more active in connection to their electricity contracts rather than in connection to the heating contracts. Apparently, the decision regard a heating system is one of the most well-thought through choices that people make (provided that they live in a house), thus once the decision has been made it is something people do not later easily change. At the same time, according to the interview data, those customers that reside in houses heated by electricity are the most sensitive group in a financial sense. For instance, one of the interviewees expressed it this way when comparing the attitudes of electrically-heated house residents and other householders: *“...if you’re living in an electricity heated house, of course, that [energy saving] is something that interests you... But otherwise they are not that... you know... So, that they care that the electricity comes and the invoice comes in time, and it is correct...”*

In general, most interviewees admitted that marketing segmentation conducted by energy companies is mostly based on the amount of energy consumption – *“because that has an impact on how big of a thing this is for you”*. In other words, house owners are more interested in reducing their own energy consumption and learning about energy conservation, while the residents of small apartments generally do not pay that much attention to such issues because their energy spending is not that large when the prices are low.

Reliability and convenience are high priorities

Despite the rigorous discussion concerning the role of prices, interviewees also emphasized that consumers do not always opt for the cheapest option in energy provision. For example, two of the interviewees brought up the reliability of services and the underlying security of supply as becoming the most important factors in decision-making concerning the provider. Meanwhile others observed that it is often a question of fairness, i.e. not actually looking for the lowest price, but at least having the feeling that *“my price is reasonable”*. So, in fact, *“fair treatment, fair service and prices”* are frequently the basis for consumer decision-making when it comes to energy services.

In addition, convenience also appears to play an important role. During the interviews, the theme that consumer freedom was too cumbersome for them emerged very strongly. One of the interviewees described the feelings of an average consumer in relation to selection of energy providers in one question: *“Why do I have to choose even?”* The only way energy companies have learned to deal with such attitudes is seizing consumers at the right time, e.g. when consumers are moving, or otherwise changing life circumstances. Other interviewees further elaborated on the topic by pointing out that the attitude of consumers is still such that they simply do not want to bother: *“But it’s not only about the money, it’s about the easiness...”* Thus, interviewees mostly felt that the

future of services in the energy sector is in providing people with easy solutions, especially in more complex areas such as heating systems.

Two of the interviewees went so far as to describe the consumers as “*very passive, very lazy*”, yet expressed a strong belief that once prices go up customers start to worry much more about the total volume of their consumption. Continuing this line but going beyond the question of prices, it was interesting to identify one additional factor that was shown to be important but often remains unnoticed – the sacredness and the scale of importance of owning a home: “*...own home, and own yard is the biggest and most expensive thing that people, perhaps, ever buy... So, it's sacred land in that sense, you have to understand it...*” The implication of this notion is that it is probable that the most effective way to promote a certain change in consumer convenience-oriented attitudes and behavior is relating the message to the sacredness and well-being of a consumers' home.

Energy conservation and guilty consciousness

According to the interviewees, many people today suffer from a guilty consciousness in connection to their consumption choices and related environmental problems. The great controversy of today is the increasing awareness and concern about the state of the environment in the world, and at the same time the increasing intensity and creativity of advertising messages appealing to consumers, stimulating their purchasing impulses. Notably, much of electricity consumption is indirect, i.e. it takes place via consumption of what various household appliances have to offer. So, even though consumers do not directly intend to spend large amounts of electricity, it just happens so that “*...on the consumer side, more and more equipment, the electricity consumption is increasing, customers are increasing their comfortability at home..*” On top of this, convenience-oriented attitudes among people are growing stronger, people are much more ready to pay for ease of use and convenience than for energy saving advice: “*...it's obvious that the amount of people who are not technically very educated, and who would not be interested in technics at all... it's increasing... so people want easy energy...*” Thus, electricity consumption of households is increasing, but people are more motivated to search and pay for easy energy solutions (e.g. electrical heating) than to invest time and effort into energy conservation.

However, as one of the interviewees pointed out, today there is hardly anyone who is not aware of global warming and its connection to consumption, so many people “*...feel of a bad consciousness about that*”. This is why consumers often prefer to avoid thinking about the impact of their everyday behavior and practices, and this is also one of the main explanations for the social non-participation phenomenon mediated by the strategies of emotional management. In some cases, the guilty consciousness even results in reactance – when people start to feel that their sovereignty is threatened: “*...people feel it's their right to choose themselves what they're doing with the electricity*”. On the other hand, as the interviews further revealed, considering the current product

structure and energy market mechanisms, it is not that difficult *NOT* to think of the household's energy consumption until it is the due date of the energy bill.

Interestingly, a few times emerging from the interviews was the point that the best solution to the current situation might be a governmental or even EU-level regulation that would force everyone to act in a certain way: *"I think there has to be some kind of changes, perhaps, in law or some kind of... you know... EU regulations, ...or something like that... which actually forces people to change something what they're doing"*. One of the interviewees observed that consumers (in Finland) would most likely seriously change their actions only if something or someone forces them, be it a regulation, or a natural disaster. On the other hand, this interviewee expressed disbelief in effectiveness of any communication as opposed to the forceful changes: *"...it could be obviously good if we could... you know... communicate and do activities, which would inspire people... But on the short term I cannot see that happening..."*.

Understanding the energy market system: the great uncertainty

One of the most striking results from the interviews was a perceived consumers' lack of knowledge and understanding of how the energy market functions in Finland. It appears that everyone working in the energy sector is well aware of the poor consumer understanding of the energy market, yet nothing has changed for tens of years. In the interviews, the roots of the confusion were traced back to the deregulation period, when the structure of the market underwent many changes, but the results of the changes seem to still remain unknown to many consumers: *"...the challenge from our perspective is really the fact that electricity markets have been deregulated, but to a large extent, the consequences of that are not really clear for the customers."* According to different interviewees, the points of confusion concern various issues, for example: electricity price formation, the freedom to choose the provider independent of the geographical location, the different roles/functions of retailer and transmission companies, the resulting complex nature of invoices, current billing practices (e.g. estimations vs. real consumption), the mechanisms of green energy market, etc.

The interviews revealed that the two issues most often inquired about by consumers are energy price (formation) and the invoice itself. One of the interviewees commented that *"...people normally don't understand what they are receiving by paying their bills..."* – the reasons for this are a combination of different issues, such as the complex presentation of the invoice itself, the complicated structure of energy market and the interconnections between the actors, but also a simple lack of knowledge and lack of supporting structures for consumer to be able to relate their consumption numbers to their everyday practices and behavior. In the course of the discussions, the interviewees frequently compared and related the energy sector with telecom sector, as well as with gasoline companies. They pointed out that these sectors are all very dynamic, with fast-changing environments, prices, and with many competing firms operating in the market. However, consumers seem to understand well

the reasons behind the daily gasoline price variations, as well as the mechanisms of telecom services and differently-priced service packages. Although the comparisons were abundant, they did not provide the reason why the same issues in energy services are so poorly understood: *"...they know to a larger extent that they have the possibility to choose, it's a deregulated market, but then – how is it working? And why are things moving, why are prices moving? That's not understood."*

In other words, complexity is not a sufficient explanation for why so many people still do not know about and understand the mechanisms of the energy market. There are many other service sectors that are equally complex and dynamic, in which consumers seem to manage very well. The underlying reasons must be much more profound, hence one of the interviewees supposed that it might also be due to the fact that *"...we don't communicate enough about the price, and people don't understand it... they don't understand how the electricity market is working..."*.

The lack of understanding of the way that the deregulated energy market functions, how relationships between retailer and transmission companies function, and how price formation occurs, all result in further problems that go beyond understanding the price and the invoice. One such problem is a skeptical and distrustful attitude towards green energy. As the interviewees pointed out, some consumers still cannot understand just how they could receive greener energy, if they make a green (or partly green) energy contract. Thus, they fear being cut out of energy supply if the weather is not windy enough, or they are fearful of being forced to change all their wall sockets in order to receive greener energy. Another implication is the previously mentioned trend towards convenience-oriented solutions – the consent to pay more for an easier solution due to a personal lack of knowledge and lack of confidence to deal with energy issues. Other implications can include, for instance, an unwillingness to think of energy issues in general, and energy conservation in particular, due to their perceived complexity. As a result, there can be low perceived consumer effectiveness, passivity and various emotional strategies in response to feelings of helplessness and guilty consciousness.

It is, in a way, natural that people start to expect more and more from their energy providers; being unable to deal with energy issues themselves, they hope to get advice from more expert structures. The interviewees also admitted that *"...customers are actually expecting something more than just to receive electricity or heat from the energy company"*. Interestingly, in a situation where the pressure of corporate responsibility is constantly growing due to climate issues, energy companies have started to feel uncertain about the services and solutions that will be needed in the near and long-term future. This uncertainty might partly be due to the fact that energy companies also perceive the uncertainty of consumers with regard to energy issues, and feel unsure about whether the consumer market is ready for dynamic and complex solutions, such as more flexible real-time pricing and other demand response developments. Hence, at present it is clear that the future will require energy companies to provide new

solutions and new services, but there is too much uncertainty about what types, the precise nature of the complexity, and other characteristics.

Therefore, the interviewees outlined the need for more cooperation inside the energy industry, as there are common problems all energy companies are struggling with. The problem seems to be a lack of trust as a result of lacking understanding: “... *the customers these days are seeing this whole industry – that it’s so unclear, and they don’t really trust...*” This lack of understanding is strategically important in communication because its scale is large – “...*that’s concerning the whole industry - it’s not just our problem...*” – and this increases the uncertainty in the energy sector, at the same time slowing down the introduction of possible innovations, and innovative services into the market. Ongoing discussions in energy companies concern possible 24h supervision services for heating systems in houses, and the introduction of leasing systems for heating equipment, etc. However, the uncertainty about what people will need and what they will be willing to handle in the future slows down the introduction of services. At the present time it seems that the uncertainty in consumer attitudes perceived by energy companies is simply leading to more uncertainty: “...*we don’t know yet what kind of services we should have in the future*”.

Summary

The interviews revealed that energy companies still perceive household consumers in Finland as rather passive and confused. Although with time the number of environmentally-related questions regarding energy companies, the level of consumer activity in relation to greener energy, and supplier switching have increased, they still remain rather modest. At the same time reliability of services, security of supply, and convenience have increased in importance for consumers. For instance, prices have traditionally been viewed as the main driver of consumer behavior in the energy sector, but more recently the trend has turned towards consumers being willing to pay more (or at least a “fair price”) for easy, convenient solutions that do not require consumers to deal with energy issues too much, e.g. electrical heating. In addition, it appears that energy companies evaluate consumer knowledge and understanding of the energy market systems to be very poor. It has been pointed out that the most common confusing issues are price formation and understanding of the invoice. Moreover, the mechanisms of green energy market, as well as the roles and interaction between retailer and transmission companies in the energy sector also typically remain misunderstood. The roots of the problem go back to the time when the energy market became deregulated and therefore its mechanisms changed, but in practice the changes still remain unclear today.

In summary, a lack of understanding, the resulting lack of trust, and lack of proper communication (e.g. about the price) were identified as possibly important reasons for overall consumer passivity and disengagement. Confusion and uncertainty contribute to a slower adoption of more environmentally beneficial behavior (e.g. switching to greener energy suppliers), while feelings of confusion, lack of confidence and perceived consumer

effectiveness might be preventing consumers from examining their own energy consumption practices more closely, and implementing energy conservation. Finally, perceived consumer uncertainty also contributes to slower development of new practices and new services in the energy sector; e.g. demand response. As will be discussed in more detail in the following section on communication, a lack of appropriate measurement technology and the demotivating structure of current energy products deprive consumers of opportunities to adopt more active attitudes towards their own energy consumption. It seems that energy companies currently see more radical regulation as the best solution to override the existing uncertainty, while prices, a general discussion, and political forces are identified as the most powerful drivers for changes in consumer attitudes.

9.2.4 Communication “with no hard feelings”

The theme of communication was the most extensively discussed in the interviews. The following section includes detail of the issues considered to be important in the process of communication: types of communicated messages, their frequency, channels of communication, current challenges, the risks in communication, promising developments, opportunities and cooperation needs. Using these topics as the structure for the discussion, the topic of energy conservation is examined further in the process of communication between energy companies and household consumers in Finland.

Types of communicated messages: wake-up, reassurance and “did you know?” messages

In the interviews, the discussion of messages that typically go out to the consumers from energy companies mainly concentrated on three issues (even though many more exist). The first type is the so-called “wake-up” messages, which are directed at consumers that have yet not chosen their provider for one or another reason, and at consumers who use the services of a competitor company. In order to create a “wake-up” message, companies use various themes that are perceived to be important to consumers. So, for instance, the issues of reliability and friendly customer service are often utilized both in written and image communication. Also, as previously discussed, environmental responsibility has lately become an important theme and criterion for differentiation between energy companies. Thus, energy companies today promote both the consumer freedom to choose the right energy product, and the right to choose between suppliers, as a way to make a positive environmental impact: *“You have the possibility to impact a lot more than a consumer can understand, that they can choose, first of all suppliers, but then they can choose different kind of products”*. Notably, the wake-ups are usually organized as large campaigns in the media, although energy companies also implement more targeted communication – e.g. by sending brochures to *“...some block of flats, or some areas where we find that our... where we lack customers most”*.

The next two types of messages are in general part of customer care communications, but they slightly differ from each other in a sense that one is more calming, while the other is more directed towards the creation of interaction. The former type is reassurance messages, which are sent to customers once in a while to let them know that they have made the right choice in terms of energy provider. In practice, reassurance messages also require some relevant themes through which companies could demonstrate to consumers why they made the right choice. In order for the message to work in full strength, the customer should also be able to easily relate to the issues in the message: *"I mean, the content has to be very relevant to the customer"*. It appears that energy saving, for instance, is one of such themes. One of the interviewees explained that their communication of environmental issues to customers consists of two main themes: how electricity is produced (green vs. conventional) and energy saving (*"...that every customer has a possibility to impact through decreasing consumption.."*). Another interviewee, pointed out that they wanted to emphasize both their environmental responsibility in production processes, and their responsible caring attitudes towards consumers through the messages they sent to them, such as: *"...don't spoil energies, don't use too much – but when you need it, use it with good feelings..."* and *"...choose a company that produces it so that it pollutes so little as possible, and the company that acts well in other terms – then you can use it by good heart.."*. In other words, among other topics, such as corporate reputation, and environmental achievements, companies also use the energy advice they provide to consumers as one type of reassurance. The interviewees referred to these types of messages as, *"more calm communication"*, which creates a positive image of the company, but is not very stimulating for consumers (in terms of concrete actions).

Reassurance communication is sometimes combined with the so-called "did you know?" messages (the third type) that are typically thought to be more effective since they stimulate response and action from consumers, thereby creating interaction. These messages often describe customer benefits, new products, corporate initiatives, special campaigns, and various happenings or meetings in which customers could participate. Some of these messages are closely connected to the promotion of energy conservation, e.g. a campaign that consisted of sending each customer-household an energy-efficient light bulb (*"So we sent each customer that light bulb, and we... at the same time we had an advertising campaign on the local newspapers in our own distribution area.."*). According to this interviewee, this kind of campaigns is effective because consumers can easily relate to the content, they become more involved with the issue, the relationship link between a customer and the company becomes stronger, plus the publicity achieved through media contributes to positive corporate image and draws the attention of potential customers. Although such means of getting the message is recognized as the most effective, the interviewees also observed that it is challenging to sustain this communication on a consistent basis as it requires a lot of creativity and resources, so campaigns of that scale are typically conducted about once a year. Less costly campaigns are easier to organize, and since the channel of communication often

makes an important part of the cost, cheaper channels are often given preference in consumer communication.

Web as a major channel for communication

Corporate websites were reported as the most promising and most extensively used channel for communication conducted by energy companies: *"I think that web is going to be the major channel one if we talk about interaction with electricity companies in the future..."* The interviewees especially outlined that the Internet is the best channel for creating interaction with consumers: *"Internet is pretty much the only tool we can actually use if you want to really discuss with your customers..."* At the same time, some interviewees observed that despite the fact that a lot of detailed information concerning various energy issues is available online (e.g. corporate website), questions about the very same information keep coming from consumers via different channels: *"Even if they [customers] have a chance to read it from our net pages, it's.. it's sometimes a little bit surprising... because all information is available... but they want to ask it from our customer service center"*. In other words, even though all interviewees identified corporate websites as their major and most important tool for communication (and especially interaction), for consumers, this is clearly not always the most preferred way of communication with energy companies. For example, people of certain age groups might be using the Internet much less than others: *"Most of the questions from younger people come via Internet"* – older people probably use the Internet much less in communication generally. In addition, although one of the interviewees stated that *"...we are trying to attract customers to come to the web"*, it does not actually mean that they do visit the pages of their energy provider. On the one hand, it is partly due to the fact that energy is not an interesting product for many people, and they cannot relate to it so much that they would spend their time reading some extra information online. On the other hand, since many people already take care of various issues online (e.g. banking, library services, etc.), a greater number of people could be attracted to energy companies' website if they could access a personalized account there, and deal with issues like monitoring of household's energy consumption, renewing their contracts, switching between different energy products, etc.

Apart from the Internet, the interviewees outlined that call centers and invoices have always been the most consistent ways to communicate with customers. Further, when it comes specifically to promotion of energy conservation the interviewees listed a wide variety of means being applied to energy conservation promotion. Typically, energy saving instructions are sent once in a while (e.g. usually during autumn) as invoice attachments or along with yearly reports on household consumption, but probably the largest portion of energy conservation communication is via corporate websites. Usually, energy companies have a section in their website entitled "Energy saving tips" or something similar, some companies even have special sections for children that inform about energy saving using cartoon characters or fairy-tales. Moreover, larger companies sponsor TV-campaigns, newspaper articles,

and various advertisements on the streets (e.g. billboards, etc.) as a means to raise awareness about energy conservation. Smaller companies tend to find more local ways to promote their environmental efforts and responsible energy consumption behavior, by participating in local exhibitions about energy, supplying schools in their local transmission area with energy-saving packages for children (published by other expert organizations), and cooperating with organizations that support the education of people who could later act as energy experts within their community. The findings from the interviews indicate that the range of means applied in energy conservation promotion is surprisingly wide and creative – thus, why communication efforts have not proved that successful needs to be explored further.

Two-way communication flow is not fully in place

In retrospect, the majority of the interviewees recalled in one way or another that earlier the “...invoice has been the only way to communicate to the customers, and that’s it”. In this regard, it is clear that the goals of interactivity and two-way communication flow are rather recent developments in the energy sector. Moreover, smaller companies often invest less on customer communication, so apart from reminders to renew the contract “...customer magazine, price info and bills are the only ways to contact them”. In other words, if customers do not get in contact on their own initiative, and do not visit the website of the provider, they just receive bills and customer magazines on a quarterly basis. As a result, consumers might not pay attention to energy at all, and perhaps do not really bother to change their behavior towards more sustainable energy use.

As for the interaction, despite the interactivity provided by the Internet today, most of the interviewees admitted that there is still very little interaction taking place between energy companies and household consumers: “...we don’t know that much about what do the customers think... and what is their response... And we don’t have... like... an ongoing dialogue with them”. It seems that at present energy companies are still searching for creative ways to keep the dialogue running and thereby motivate consumers to become more involved: “So we have been thinking that what could be the possible way to be in an interaction with our customers, and... we haven’t found it yet.” The findings of the interviews suggest, that the driving forces for increased interaction are fiercer competition among energy companies and higher consumer expectations towards them. In addition, interaction is seen as the key to increased customer loyalty – one of the major current goals for energy companies.

One of the interviewees noted that the trend today is to modify all existing communication in such a way that it would include elements that initiate interaction. For instance, a regular newsletter should always have “...something, which would create again an interaction with customers... Competition, or questionnaire, or... whatever”. Thus, energy companies perceived the disinterest and disengagement of people with energy issues as a problem, so they try to elaborate strategies to get their customers more involved – although this seems not to be working that well at the moment. As frequently observed by the

interviewees, the only time that customers become interested in electricity is when there is an outage, and in the words of one of them: “...so then everyone is interested about us... That’s not a good meeting point anyway.”

Lack of feedback and rewarding as undermining factors

Despite the creative promotion of energy conservation, the interviewees seemed to recognize that currently the savings that can be achieved by their customers are very modest. Moreover, the interviewees emphasized that energy conservation promotion is more of a customer loyalty tool than a tool for consumer demand shaping, e.g. during peak load times. It was openly acknowledged that “...the current electricity products and the measurement technology that we have in Finland – that is not promoting demand-side flexibility”. As further described by the interviewees, it is not possible to, for instance, measure whether a private customer has consumed less than others during the peak hour. However, more importantly, the observation was made that even if technology allowed such measurements to be performed, the present product structure does not motivate consumers financially to consume less during peak load times. In this regard, one of the interviewees noted that energy saving tips are usually sent out during autumn time – in the hope that this will help to decrease the peak.

In other words, from the interviews emerged the issue that consumers are not able to monitor their own consumption, or at least it is not a service that is yet widely available. Most energy invoices sent to private customers are estimations that they receive about once in three months. The balancing out of the estimations is often conducted only once a year; therefore implementing energy conservation does not bring notably tangible benefits to consumers in the short run. In essence, in the short term consumers are deprived of an opportunity to experience financial and/or psychological satisfaction from the achievement of certain results in reduction of their energy consumption. Due to the structure of energy products in the market and existing measurement technology, energy consumption remains an invisible and impersonal process.

The risks of communicating too often too much

Unexpectedly, the issue that emerged during all the interviews was the problem of inducing guilt on consumers through promotion of energy saving. In fact, one of the interviewees identified this as one of the main problems: “...key thing is that I don’t want that our communication makes people feel guilty”. The other interviewees made similar remarks pointing to the fact that it is a highly sensitive area, and one should avoid impinging upon consumer sovereignty and freedom to do what they like, lest it lead to people feeling offended. For instance, in one interview it was emphasized that the risk especially increases if energy prices grow, so people might start feeling skeptical towards corporate energy conservation promotion: “...a little bit risky situation: if prices go up and energy companies promote energy saving”.

In essence, promotion of energy conservation is meant to supply consumers with feelings of security, friendliness, and trust towards the energy provider. It is meant as a kind and thoughtful response to consumer needs that have arisen in the situation where people (might) feel that they would like to modify their consumption in order to slow down their environmental impact. Therefore, while providing customers with advice, energy companies would like to keep it as gentle and non-intrusive as possible in order to avoid negative responses as reactance. As one of the interviewees commented it: *“I mean, you have to be very careful that you don’t communicate too much, or too often”*. Some even suggested that certain technology might cause irritation from consumers, such as devices that would indicate when electricity consumption is high, e.g. going above a pre-defined monthly amount: *“...they get annoyed about it if the meter, for example, shows red light when the consumption is high...”*. In addition, considering the climate in Finland people might start feeling deprived of their traditional rights – such as going to sauna, and enjoying in general a warm and well-lit atmosphere at home during dark winters.

All in all, communication about energy conservation was pictured in the interviews as the one concern that needs to be implemented with a fine sense of balance: *“It’s a thin line that some people might feel offended”*. However, it appears that such communication with *“no hard feelings”* – as described by the interviewees – has not yet proved to be that successful at promoting energy conservation. Thus, one may wonder whether communication is the right means to promote change towards more sustainable behavior at all, or whether it is simply the case that the wrong actors are involved?

The future with smart metering: benefits all around

Interestingly, when it comes to concrete means of implementing energy conservation, the interviewees mostly mentioned following the advice available over the Internet; for example, everyday things such as monitoring of room temperature during the heating season, keeping windows closed to avoid wasting energy (etc.), investing in insulation, and technology like heat pumps. However, not a single interviewee mentioned the role of automatic meter management (AMM) and smart metering – as viable solutions to the existing situation. Notably, the question of AMM and smart meters always came from the interviewer as a separate topic in order to raise the discussion.

Despite the fact that AMM and smart metering never emerged as a “natural topic”, during the interviews, when asked about them all interviewees responded positively and praised the advantages. For instance, it was suggested that such technology enables real-time feedback to customers, ensures accurate invoicing, eliminates the negative sides of the current system (e.g. sending estimated bills), cuts operational costs for energy companies, enables better customer profiling, and allows customers to manage their own consumption over the Internet. One of the interviewees pointed out that the obstacles to energy conservation on the customer side would be resolved if AMM were in place: *“...the other obstacle, which I referred to, – that the customers*

cannot be rewarded or they cannot be measured in a detailed enough level – that will be taken away.” Another interviewee suggested that the use of AMM or smart metering *“...eventually will create more interaction with the customers”* because it will provide consumers with feedback, and possibly generate more interest towards implementation of personal energy consumption management. Yet another interviewee referred directly to the benefits that automatic meter reading can bring in terms of energy conservation efforts: *“...they [customers] can really see if they are trying to save energy – how does it reflect? They will receive the feedback immediately”*.

Thus, even though the interviewees suggested that AMM and smart metering would solve most of the current problems in customer communication, they never initiated the discussion about such approaches. One possible explanation is that at the time of the interviews such technology was just starting to enter Finland, and it was rather unclear how fast the development would take place. Another interesting point is that smaller companies might be taking on the new technology more slowly than bigger companies as they have less resources to invest in this kind of technology: *“So, we are waiting for the price of those meters to come down, and... we are waiting also to see what is the leading... what are the leading and best ways to read it”*. Hence, it is most likely that smaller companies will need greater stimulation, support and motivation to proceed with implementation of smart metering.

Opportunities for innovative services and cooperation needs

As discussed previously, energy companies are preparing and examining the different services they could be offering in the future to their household customers. For instance, it has been suggested that AMM would support the consulting role of energy companies in the future – enabling them to provide better advice about energy efficiency, etc.: *“...we are also able to provide better reporting services to our customers... so we can actually tell them exactly how the customers are using their energy, and also we can combine that with the advising services”*. However, many questions remain unanswered, and understandably, smaller companies are waiting for the initiatives and experiences of the larger ones, so that they can step into the game on safer ground.

Some ideas about very different energy products have been circulating in the strategic discussions of energy companies, such as whether energy companies would ever sell electricity with the right to turn it on and off for an hour when necessary (*“pätkäsähkö”*), for example in peak load consumption times. The discussions have concentrated on whether it is worth developing new services that could become popular among households, such as various leasing offers for more complex heating systems, special 24h supervision services, or whether it is more worthwhile to simply offer more dynamic pricing systems for greater convenience (e.g. having more customers with electric heating but providing them with motivation to consume less at peak times). Some energy companies have considered whether they should have expertise on various combined energy solutions for houses, e.g. offering

consulting and highly tailored solutions on combined renewable and conventional energy systems (*"Should we, for example, have expertise in our own house in solar energy?"*).

It seems that the uncertainty that has been building up in the energy sector is the result of combining the great pressures of the increasing scarcity of energy resource, climate change related problems, growing expectations towards corporate responsibility, and sector-wide consumer related problems that have been there for many years. The latter is, for example, poor knowledge and understanding of the energy market systems among customers that have, at least, partly contributed to the slow acceptance of green energy products. Under public pressure many energy companies have been widening their product scope to include green energy, but too often their efforts have remained unsuccessful in that area and did not provide further stimuli to seriously invest in greener business. The perceptions of today's consumers, their attitudes, and their preferences have been formed in the older context of their desire for high volumes of cheap energy, and their confused state and little knowledge about the mechanisms of the energy market. However, today's environmental pressures are, at the same time, providing energy companies with the signals that the energy market of the future needs to be developed in a very different way. Thus, it seems that the development of the market is trapped in the uncertainty of knowing exactly in which direction it should move: providing ignorant consumers with increasingly convenience-oriented services, or offering services oriented towards more complex, but much more sustainable energy solutions – with the risk that these services become as popular as green energy.

Addressing industry-scale problems requires co-operation and an integrated approach by all industry actors. The interviewees mentioned that the Finnish Energy Industries Association (Energiateollisuus) plays a significant role in bringing attention to the problems that need to be resolved, and to suggest different means by which to address them. However, the problem of consumer levels of knowledge and understanding of the energy market system, for example, has remained an open issue for many years. The reasons behind a lack of action might be complex, but it is clear that so far there has been the lack of industry will and a lack of an adequate external push to address it. It also seems that disintegration instead of co-operation is more descriptive of what has been happening in the energy field in the recent years: *"I mean, there are... our government and our politicians who say one thing and then the companies are doing something else, so I mean... it's hard to co-operate actually together... and also gain the trust of the customers"*. Clearly, effective promotion of energy conservation requires a very purposeful, dedicated, result-oriented and integrated approach, where raising the awareness of consumers' understanding of energy market systems and the widespread implementation of smart metering are two concrete and obligatory steps. These steps will require co-operation between different industry actors, as well as serious contributions and co-operation from the government.

Summary

Even though energy companies have been providing a lot of information on energy conservation via various channels, it appears that this communication did not bring any significant results. Moreover, much of the communication between energy providers and household consumers still remains a one-way flow. The findings from the interviews indicate that the promotion of energy conservation is perceived more like a customer loyalty tool, rather than a tool that would contribute to significant customer energy savings. The current structure of energy products and lack of measurement technology are among the major contributing factors, as outlined by the interviewees. In addition, communication of energy conservation practices should be developed in a careful, non-intrusive manner in order to avoid inducing any bad feelings in consumers, such as guilt, irritation, and annoyance. The danger of communicating too much and too often is in provoking the reactance in consumers, who might take advantage of their freedom to change to another provider. AMM and smart metering are seen as solutions to many existing problems in communication; the benefits seem to be equally generous both for energy providers, and for consumers. Among the benefits described in the interviews are, for instance, accurate consumer invoicing, the possibility to monitor personal energy consumption in real-time online, timely feedback to consumers, better profiling of consumers for marketing purposes, and reduced costs in data acquisition for energy providers (meter reading). New technology will enable the provision of new services; hence many energy companies are currently pondering which opportunities should prove to be the most competitive in the energy market of the future. However, it appears that in order to proceed successfully, some industry-wide problems need to be addressed in an integrated and purposeful manner, which will require the close co-operation of different energy industry actors, as well as stimulation and co-operation from national government.

9.3 Overview of the findings

In order to condense the findings and focus them on the most relevant points this overview is structured around three key areas that correspond to three (of four) research questions: understanding of energy conservation in the context of household consumption; reasons for communication of energy conservation practices; perceptions of consumer preferences and expectations in the context of energy conservation.

Energy companies' understanding of energy conservation in the household context is strongly framed by the characteristics of energy as a product. The bulk nature of energy leads to a perception that the energy consumption process is very impersonal, and therefore there is nothing interesting about that process except for the financial aspect. Since energy

consumption is mostly experienced through consumption of what household appliances have to offer, the emphasis in the interviews was on how energy conservation should not deprive people of what they enjoy doing/experiencing. Sustainable energy use was closely associated with “*wise use*” of energy, focusing rather on avoiding purposefully wasteful behavior than promoting saving type behavior. Based on these aspects, energy conservation was portrayed as a rational way of saving some money, behaving wisely and efficiently – in essence being much closer to the concept of consumption efficiency rather than conservation. At the same time, consumer sovereignty and freedom to behave according to personal tastes and wishes emerged strongly as important borderlines shaping all communication into careful, non-intrusive and non-committal suggestions, which customers can follow if they so choose.

So, if promotion of energy conservation to household consumers is risky, then what are the reasons and motivation for energy companies to become involved? In today’s context of increasing scarcity of natural resources, escalating climate change problems, and growing expectations towards corporate responsibility, companies in different industries, but especially in the energy sector, are looking for creative and innovative strategies by which to cope and succeed. For strategic reasons the major goal of energy companies is not high consumption per household, but an extensive customer base in the long term. Thus, the reported current focus of interviewed energy companies is building long-term relationships with their customers, focusing on their customers’ needs and keeping them satisfied. With environmental issues high on the world agenda and in the general discussion, energy companies attempt to strengthen customer relationships and trust by extending their product range to include greener energy packages, and by providing customers with detailed information and advice on energy conservation, – should they feel the need to make their households more environmentally friendly. Careful servings of energy saving communication is considered to be one of the tools for increased customer loyalty – especially in the special conditions of energy industry where consumer involvement, brand awareness and media spending are low – but the need to secure corporate reputation by remaining constantly visible and part of the discussion is significant.

Current practices in energy conservation promotion are diverse and creative: they vary from company to company, and are also dependent on the size of the company. For example, bigger companies invest in promotional information through advertisements on TV, billboards, and in newspapers, while smaller companies often work on a more local level – printing success energy saving stories in customer magazines, sponsoring the purchase of energy saving leaflets for children to local schools, etc. In addition, the most popular ways to communicate with consumers are probably invoice attachments (e.g. relationship management pages) and corporate websites. Some companies admitted that for some customers quarterly invoices and customer magazines are the only pieces of communication that are sent from

their energy provider, unless customers take the initiative and visit the corporate website. In the meanwhile, energy companies reported that corporate websites are constantly growing in importance in terms of communication, and especially interactive communication. Indeed, it was reported that the websites will become the first channel in terms of importance because they are flexible, interactive and convenient. For example, every energy company already has a section on their website that is devoted to energy saving tips. Despite the reported flexibility and convenience of the Internet, it was admitted that communication flow between consumers and energy companies is still very much one-way, and getting customers more involved with energy issues remains a problem.

The problem of consumer passivity with energy issues, as perceived by the interviewees as a vicious circle of low interest towards the invisible product of energy and poor understanding of mechanisms in the energy market systems. In other words, low interest does not motivate consumers to learn more about how the energy market works, while poor understanding often prevents consumers from taking more interest in the process of energy consumption because it is thought to be unclear and overly complex. Consumers are, therefore, perceived as unwilling to receive too much of energy-related information and too often, hence the careful communication strategies from energy companies. However, it is also recognized by the energy companies that the biggest consumer communication challenges at present are connected to understanding the price formation and understanding of the invoice. In addition, in the perception of energy companies, when it comes to energy services consumers value highly reliability, fair pricing and convenience. Notably, a change in consumer preferences has gradually happened over time; where it used to be that prices were the most important drivers of consumer choices, now consumers are willing to pay a little more for higher convenience. On the other hand, due to the general discussion in the media, energy companies also perceive consumer expectations to be increasing in relation to corporate responsibility. Thus, it seems that energy companies are trapped in the uncertainty of whether convenience-oriented or sustainability-oriented energy solutions will be more competitive in the future, or a combination of both.

All in all, it seems that energy conservation promotion remains as no more than a customer loyalty tool since even energy companies themselves do not believe in the effectiveness of communication, and expect nothing but very minor savings from the consumer side. It is recognized that the true challenge lies in the fact that current product structure and measurement technology are rather demotivating with regard to energy conservation efforts, because they do not provide timely feedback and rewards. However, AMM and smart metering are expected to resolve many of the existing problems – enabling consumers to receive real-time feedback, monitor their consumption over the Internet, and take better advantage of dynamic pricing. Energy companies are expected to benefit from more accurate invoicing, reduced operative costs in gathering data,

better customer profiling and so on. Implementation of smart metering is still under development in Finland, and the findings indicate that in order to proceed successfully an integrated purposeful approach is necessary, which will rely on close co-operation between the actors of the energy industry, as well as on support and stimulation from the government.

10 DISCUSSION

If one considers the strategies of the energy companies interviewed in terms of the framework of potential threats and opportunities as suggested by Schaltegger et al. (2003), it is rather clear that energy companies face high potential threats because the energy industry in general is so carbon-intensive that it is under constant scrutiny and pressure. In terms of opportunities, the interview results show that it is possible to assume that participating companies earnestly try to follow the innovative strategy, although some elements of a defensive strategy might be present too (e.g. case-specific PR). According to Schaltegger et al. (2003), innovative strategy means anticipating societal changes, while at the same time highlighting corporate achievements in environmental areas by using all the different available means of communication. Innovative companies adapt and modify their existing range of products and services on offer to suit the changing societal expectations; that is they try to differentiate their offers using issues that matter in society. The interviews clearly indicate that all participating energy companies had already developed green energy products to offer to environmentally conscious consumers. Moreover, despite the fact that green energy remains not very popular, some energy companies try to increase sales by including some percentage of green energy with conventional energy products that consumers are already using, and subsequently informing their customers about it. In addition, as discussed in the interview results, providing consumers with information on energy saving is actually perceived as an opportunity to fulfill consumer needs, and therefore solidify relationships with customers through trust and satisfaction. In other words, operating in a high-threat industry, energy companies have learned to anticipate changes by following closely the general discussion in wider society. As the interviews show, they join the discussion in order to remain visible and demonstrate the eagerness to meet customer demands, and they try to be proactive by promoting energy saving to their own customers; – all because environmental issues are perceived as one of the opportunities to build stronger consumer loyalty and more long-term

relationships. Just as Sharma et al. (1999) suggested, proactive strategies of environmental responsiveness reflect the fact that inside the energy companies environmental issues are perceived as opportunities, in this case as opportunities for customer relationship management.

On the other hand, Sharma & Vredenburg (1998) write that in order to compete based on a proactive strategy, it is necessary for companies to act in such a highly consistent way across all dimensions relevant to their range of activities that it would stand these companies apart from the rest in the industry. Essentially, this means that simply fulfilling all the environmental regulations and following the standard business practices within the industry is not sufficient for a competitive advantage, which is why there are always only very few leaders in the industry. Yet, as one may recall from the interview findings, the promotion of energy conservation in the energy industry today is a popular practice, and even something that many companies are doing; i.e. a standard industry practice. Thus, one could actually say that one of the reasons to promote energy conservation is to follow a code of conduct in the industry, while another reason is to build up consumer trust for longer-term relationships in an industry where the main product is extremely difficult to differentiate.

The interviews revealed that energy companies, especially the larger ones, face challenges in reputation and image building. Operating in a carbon-intensive high profit industry leads to the situation where companies experience skepticism and suspicions from consumers, thus, being at least active or even proactive towards environmental and social issues is a strategic must in the industry. Banerjee (2002) writes that the higher the degree of integration of environmental issues into the strategy, the deeper is the level of penetration across all levels of strategy, and the higher is the degree of corporate environmentalism. In line with Banerjee's (2002) findings concerning greater degree of corporate environmentalism in highly regulated industries, the interviewed companies showed extensive levels of integration of environmental issues into the different levels of strategy in their organizations. For instance, at the functional level – with regard to marketing and communication – the interviewees admitted that much of the communication is planned around environmental and energy saving as topical issues to attract consumer attention, and reassure them of having made the right choice in terms of energy provider. At the business level, where many product development decisions are made, a range of green energy products is being developed and marketed. At the corporate strategy level, environmental issues are addressed, for example, to develop a long-term positive visibility strategy, as well as in the considerations of new business opportunities (e.g. leasing energy efficient heating equipment), and the widening of the energy providers' role into hubs for solutions. In summary, the companies interviewed demonstrated that today they find themselves at the third point of Pesonen's (2003) triangle, where they not only try to identify and manage their own environmental impacts, but also benefit from their environmental activities through consumer marketing and communication, even though this practice has already turned into a standard

industry procedure. It appears that in highly regulated industries being proactive is a norm, but being competitively proactive is a different story.

It is interesting that despite extensive environmental communication, energy companies do not see themselves as the changing force for consumer attitudes and awareness. This corporate perception of how influential companies are when it comes to changing consumer attitudes into more sustainable ones is certainly important, as it reflects the motivation and reasoning behind corporate actions. The companies interviewed viewed EU or national-level regulations, political decisions and their media coverage, the extent of general discussion in the society as the main channels of influence on consumers. Thus, even though energy companies reported being proactive and promoting consumer power choice (between suppliers and between different energy products), they do not seem to believe in the effectiveness of their messages: instead it seems that they believe in the effectiveness of such communication as a CRM and reputation management tool.

In order to understand how and why the effectiveness of corporate energy conservation communication remains low in terms of behavior change but succeeds as a reputation management tool, it is worthwhile examining the results from the perspective of sustainability marketing and communication theory.

10.1 Marketing and communication

In their article Peattie & Crane (2005) examine the different ways green marketing has fallen short of expectations and led to consumer disappointment, distrust and apathy. So-called *compliance marketing* and *green spinning* are of particular interest in relation to the energy industry situation examined in this research. As described earlier, *compliance marketing* is when companies market their environmental compliance as an outstanding achievement in order to attain higher scores from consumers. One should keep in mind, that all energy providers that have transmission of energy as part of their activities are obliged by law in Finland to provide information on energy saving to consumers. On the other hand, as reported in the interviews, energy companies always provided some information on energy saving, but because energy became cheaper after the deregulation of markets this issue lost in importance for many consumers, therefore communication was not that extensive. However, presently the issue has gained in importance again due to rising energy prices and rising environmental awareness of the consumers. In other words, energy companies today communicate about energy conservation in ways that are much more extensive and creative than actually required by law. It seems that the motivation for such communication is not in demonstrating corporate environmental achievements, but rather in providing the information consumers might be interested in, and through such means solidifying trust.

When it comes to *green spinning*, Peattie & Crane (2005) describe a reduction of green marketing to a PR function as a means of better reputation management. The authors observe that companies, which operate in industries that are constantly in the public eye often become trapped in *green spinning* and due to their efforts to prevent environmentally-related suspicions and attacks from various groups they go on a PR offensive, supplying brochures and press releases to fight a negative image. The main task of communication becomes the soothing, reassurance and allaying of public suspicions, the focus shifts from green issues being at the center of the strategy – to more effective reputation and risk management. Therefore, the authors call this approach reactive, and emphasize that one of its main features is the inability for such companies to engage in an open dialogue with various stakeholder groups, because they keep searching for solutions inside the company rather than trying to listen and identify the needs of consumers and resulting new opportunities in business.

Reflecting on the interviews with the energy companies, it is easily observable that both reputation/brand management and risk management are among the highest priorities for energy companies. In an industry where media spending has always been low, extensive communication with customers is essential for maintaining a warm friendly image and for building a positive reputation. This communication, however, is very much framed in terms of how much and what can be communicated in order to avoid the risk of instilling customers with feeling of fear, guilt, annoyance or frustration. In fact, it seems that the borderline in the energy industry between *green spinning* and environmental communication is blurred. The special features of energy as a product and low media spending has led to the great use of the so-called MRP (marketing public relations) approach in the energy industry. In other words, since energy companies are often unable to compete effectively in terms of price and to differentiate their energy from that of their competitors', it appears that many of them choose to compete based on reputation, by actively participating in the ongoing discussions, and even trying to generate discussion around their own brand in order to increase consumer awareness. The interviews reflected this tendency through explicitly expressed aspirations to always remain visible within their own transmission area, and frequently resorting to the role of the general discussion, its influence on consumers. Thus, instead of investing heavily in advertising, bigger companies can afford large campaigns regarding energy conservation on billboards, thereby contributing to the ongoing discussion about climate change and generating discussion and awareness around its own brand. Meanwhile, Dalton & Croft (2003) argue that MPR activities are very effective in informing and educating consumers in a credible way, so one may ponder whether MPR activities that involve energy conservation promotion really do have the negative connotation of *green spinning*, at least as long as they prove environmentally effective among consumers.

Rex & Baumann (2007) criticize that companies often concentrate too much on high green premiums, while other consumer costs, as well as proper

communication, promotion and distribution remain underestimated and under-addressed. In the context of Belz's (2005) customer perceived value model, and reflecting on the interview and survey findings, one can identify that when it comes to energy consumption, the two most significant consumer costs are product price and costs of use (e.g. in terms of convenience and reliability). Thus, not surprisingly, the interviewed companies demonstrated that in the framework of overall customer communication they try to highlight convenience and reliability in order to reduce the perceived costs of purchase and use. Moreover, energy prices in Finland are comparatively low in the European context. Besides, price differences between the different energy providers in Finland are not that significant, a detail that also applies to price differences between conventional/combined energy packages and green packages (e.g. price comparing service of Finnish Energy Market Authority, EMA). On the other hand, energy companies contribute to customers' self-esteem by engaging in extensive communication about environmental issues, energy saving advice; in other words, reassuring and convincing customers that they have made the right choice in terms of energy supplier. Thus, energy companies try to keep customers' perceived benefit-cost balance as positive by minimizing the costs of purchase and use, while maximizing the benefits.

The problem that remains, though, is that despite consumer freedom in the energy market, and despite easy and convenient energy package solutions, consumer interest in energy and their activity in the market both remain low, while household energy consumption continues to rise even though extensive energy saving advice and information is supplied by energy companies and other organizations. Rex & Baumann (2007) point out that today companies should be concerned with long-term market development, so it is worthwhile educating consumers and promoting a different kind of lifestyle and consumption. However, much of the current communication conducted by energy companies in relation to energy conservation appears to be ineffective, and brings these corporate efforts much closer to *green spinning* than to long term strategic development. As asserted by Peattie & Crane (2005), open dialogue with various stakeholders, two-way communication flow, is what sets apart *green spinning* and genuine environmental efforts. According to Cornelissen (2008), the dialogue strategy of communication is characterized by the involvement and commitment of stakeholders, which are achieved through consultations, collective problem-solving, and an early incorporation of ideas. It is also true, however, that open dialogue first requires awareness and understanding from the stakeholder side - those are typically gained using informational and persuasive strategies of communication. Cornelissen (2008) comments that an informational strategy mainly creates awareness through press releases, reports, and publicity, while a persuasive strategy is aimed at a deeper understanding, and requires discussions/meetings along with educational/advertising campaigns.

Incidentally, the interview findings showed that a two-way flow communication is not yet fully in place between energy companies and

household consumers. In fact, most of the interviewees admitted that invoice and customer magazines are the main means to communicate, and while many information and interactive opportunities are available on corporate websites, the survey findings indicated that only a very modest portion of people do actually visit their energy provider's website. Hence, based on the interview findings it is possible to assume that current energy conservation promotion conducted by energy companies mostly comes down to informational strategy, and consequently this creates and supports consumer awareness. Apparently, it has not yet led to any noticeable changes in consumer behavior in the area of energy consumption. At the same time, the interviews also indicated that energy companies are currently striving towards more interactive and meaningful two-way communication with their consumers, since the disengagement of consumers with energy is yet another obstacle for effective competition between the companies in the market. For instance, the Internet is considered a very promising environment for fostering interaction and communication between household consumer and energy companies. Yet one should also keep in mind that interactivity of the Internet does not automatically guarantee an open dialogue – since corporate websites can be edited to avoid certain negative comments and opinions. Studies by Cooper (2003) and Insch (2008) report that electricity retailers in the UK and New Zealand respectively mostly used the information push approach on their websites compared to a meaningful dialogue.

Belz & Peattie (2009) emphasize that communication as a two-way dialogue that builds relationships with consumers is one of the important features that distinguishes sustainability marketing from the conventional approach that is often based on unidirectional promotion of products. But, as the analysis in this research revealed, current communication between energy providers and household consumers is only in the develop stage of becoming fully a two-way flow. On the other hand, the authors also discuss other principle characteristics of sustainability marketing, which conform to the opinions expressed in the interviews with the representatives of energy companies. For instance, strategic and futuristic thinking in connection to the role of energy companies in society is already present. As the interviews showed, energy companies are aspiring to serve as hubs for solutions rather than simple suppliers or retailers. The realization that people need solutions and consultant services rather than just products is already there, and although slowly, energy companies are trying to modify the ways of operating to suit the new conditions. Unfortunately, it appears that the disappointments connected to earlier experiences with green products in the market and the uncertainty of market developments are slowing down and discouraging these changes from happening swiftly.

In addition, Belz & Peattie (2009) emphasize an extended, more holistic perception of consumption as a salient feature of sustainability marketing, and the resulting strong customer orientation, as well as the willingness to serve as a guiding force for consumers. Remarkably, the interviewees from all

participating companies frequently highlighted that one of the major changes that took place over time was the shift in focus towards customer relationships – towards serving customer needs, the built-up of trust and long-term relationships – as opposed to maximizing immediate profits per customer. In fact, giving advice about energy conservation and providing customers with information and tools to reduce their energy consumption as well as their expenses were brought up as concrete manifestations of the customer orientation and a mature consideration of customer needs, and of ways to fulfill them. According to the interviewees, energy companies are ready to help customers manage their own consumption because they feel it contributes to satisfaction and relationship-building. Yet this communication very carefully avoids bringing out the “hard feelings” from consumers, and moreover it has so far proved effective only in reputation management, but not in consumption management. Does this mean that energy companies are failing the transformative aspect of sustainability marketing with their efforts of keeping communication risk-free in terms of consumer reactance? In order to understand the factors that contribute to consumer passivity, lack of interest, and disengagement with information on energy conservation, it is necessary to move to the lens of consumer behavior and sustainability.

10.2 Consumer behavior and sustainability

10.2.1 Motivation

Overall, although implicit, the survey findings demonstrated low consumer involvement with energy issues. For instance, around 38% of the respondents admitted that they have never practiced energy conservation intentionally. This is a significant number, especially considering the tendency for positive bias in self-reporting. Moreover, despite the fact that the surveyed population is young, over 60% of the respondents never visited their energy provider’s website (where most information about energy conservation is communicated), and many of those who did visit the website, only visited it once. In addition, consumers expressed a lack of interest to search for information on energy conservation independently (using the Internet); instead they preferred to receive it through more convenient means, such as TV and radio. The findings that energy conservation is a low interest issue for Finnish consumers agree with those of Salmela & Varho (2006) who reported that energy issues in general have a low priority in the lives of Finnish consumers.

On the other hand, the findings of the survey conducted within the framework of this research, as well as the findings of other surveys concerning energy conservation (e.g. Kiljunen 2008) suggest that attitudes towards energy conservation are generally positive, or have strengthened, starting from 2006. For example, the reported interest in knowing more about how to reduce household’s energy consumption is quite strong: around 67% of the

respondents were willing to receive such information, while if it came in the form of financial calculations, this was even stronger; here around 74% replied positively. Attitudes, however, are just part of the picture, and Guagnano et al. (1995) propose that they are strongly framed by e.g. structural conditions. Therefore, based on the survey and interview findings, the MOAB model can serve as a consistent way to examine the interplay between the different factors that influence energy conservation behavior.

Besides attitudes, the motivation domain of the MOAB model includes subjective norms and perceived control, which are based on values and beliefs, and altogether form the behavioral intention. Even though the survey results did not shed much light on subjective norms, the interview results revealed an important notion of "acting wise", in terms of energy consumption. In more detail, it showed that, culturally, it is very important *NOT* to be perceived as deliberately wasteful, but to be perceived "acting wisely". Thus, the implication for Finnish consumers' motivation to behave sustainably is to promote certain "wise behaviors" and specify which practices are "unwise" and "wasteful". It seems that once the consumers would be informed of what is straightforwardly considered wasteful, they would be more prone to change than when informed about environmentally friendly behaviors. Currently, it appears that the emphasis in energy conservation is on giving advice about increasing energy efficiency, and appealing through rational reasons, such as money savings. Moreover, communication that comes from energy companies is especially careful not to include any negative or potentially offending appeals due to possible consumer reactance. Thus, "unwise" and "wasteful" examples in energy consumption with a specific cultural context are rarely communicated, the discussion fades against the argument of consumer sovereignty, and it remains unclear how many times a week it is sustainable to fire up the electrical sauna, or the like.

From the point of view of perceived control, it becomes apparent that the overall passivity and apathy of consumers towards energy issues might be due to the lack of knowledge and understanding on how energy market functions. The interviews revealed that the energy companies perceive their customers to be rather confused about the current mechanisms of energy market, and what it has become after the liberalization some ten years ago. This is also consistent with the findings of Salmela & Varho (2006). Moreover, some of the interviewees even recognized that certain misconceptions of the energy market lead to the situation wherein people are not able to take full advantage of market opportunities, and these misconceptions even prevent some consumers from greening their consumption - i.e. from buying green energy. In the interviews it was also recognized that the presentation of energy bills appeared very complex to most consumers, possibly due to the fact that they did not understand the distribution of responsibilities between transmission and retailer companies. In other words, confusion and lack of understanding weaken an individual's perception of being able to participate in the energy market in a wise meaningful way, and via various emotional management

strategies deal with the confusion; i.e. weaken the perception that personal actions make any difference environmentally. Thus, the individual's perceived control suffers, reducing the motivation to act environmentally.

10.2.2 Ability

The ability domain of the MOAB model includes, as the main components, knowledge, habits, and personal resources. As mentioned earlier, current consumer knowledge and understanding of the energy market was evaluated by the interviewees to be quite poor. At the same time, the results from the interviews suggest that the efforts of energy companies are mainly directed at increasing their customers' knowledge about energy conservation, but not about the energy market and its mechanisms. The majority of the efforts in education about energy conservation are conducted via the Internet, through relationship marketing bill attachments, and sometimes via broadcasting media (e.g. TV in case of large companies). However, the survey results revealed that customers hardly ever visit their energy providers' pages, in other words, there seems to be a discrepancy between where consumers expect the information to come from, and where energy companies place it. Yet it is not the fault of the Internet as a channel, since many authors recognize its advantages of being easily accessible, interactive (e.g. Sharp 2001), and having minimal barriers to entry (e.g. Insch 2008). Rather, it is the initial lack of involvement from the consumer side that results in the unwillingness to invest personal time and effort into the search for energy conservation-related information. Just as Desmedt et al. (2009) report: information about energy saving is widely available, but it simply does not attract consumer attention – partly due to general information overload, and partly due to other reasons. Indeed, Desmedt et al. (2009) strongly advocate household-tailored (or at least household-type tailored) information about energy conservation as the most effective approach. These authors observe that even very motivated people would not usually pay too much attention to general tips. In addition, Kollmuss & Agyeman (2002) observe that knowledge alone is rarely a sufficiently powerful driver for behavior change, especially in the area of sustainability. Knowledge, as a behavioral motivator, can be strongly supported or counteracted by both situational and internal factors (e.g. perceived control, values, personal resources). In the case of energy conservation promotion conducted by energy companies in Finland, informational types of campaign online and in the media are framed with rational appeals to possible financial benefits, and to environmental responsibility of citizens.

Thus, personal resources are being somewhat tackled by energy companies in their communication – appealing to potential money savings through energy conservation. The problem, though, seems to be the vagueness of such appeals and lack of personalized approaches. Moreover, Brown (2001) comments that depending on the household size, energy costs might not be that high relative to the other household-incurred costs, that is why people might place low priority on energy issues. The survey findings confirm that, indeed,

more residents from bigger households (e.g. houses or semi-detached houses) are interested in energy conservation (76%) compared to residents of small apartments (56,8%, see table 21). Understandably, the residents of houses are more sensitive to monetary incentives, which also reflects how energy-conscious they tend to be. For instance, the survey results indicated that substantially more respondents among house residents (61,2%) monitor the indoor temperature regularly, compared to respondents from apartments (20,7%, see table 18). In other words, the argument of Kollmuss & Agyeman (2002) about people being motivated to act environmentally via various incentives (e.g. money) without any environmental concern has very good grounds. It follows that in cases when energy costs are not significant for a household, there is a strong need for additional motivating factors, and according to the review of previous studies these are a combination of personalized information (e.g. Benders et al. 2006), continuous and/or frequent feedback (e.g. Seligman & Darley 1981), tangible or intangible benefits (e.g. Throne-Holst et al. 2008), and environmentally-friendly infrastructures of provision (e.g. Sanne 2002; Southerton et al. 2004).

Overall, it appears that energy companies in Finland currently tackle the knowledge of consumers with regard to energy saving as an effort to promote conservation, but other components of the ability domain – habits and personal resources – remain mostly unaddressed, or addressed in a vague and general mode that does not result much change. The informative efforts to deepen consumer knowledge about energy saving are mostly impersonal, general, and not tailored sufficiently to different household types. Furthermore, the motivation domain of the MOAB model seems to remain “untouched”; as evidence by the fact that interviewees indicated that energy companies believe the general discussion to be the most influential driver for a change to consumer attitudes and norms. Due to confusion about energy market mechanisms in Finland, mediated by corresponding defensive emotional management strategies, weak perceived control seems to be characteristic of Finnish consumers when it comes to energy issues. This too, remains, unaddressed and untackled, despite the awareness of both energy companies, and other industry actors. In this context facilitating external framing conditions (the opportunity domain in MOAB) significantly grow in importance for the promotion of energy conservation.

10.2.3 Opportunity

As previously mentioned, external conditions are powerful forces that drive consumer behavior. For instance, Sanne (2002) discusses how consumers are often *locked-in* by the infrastructures of provision, while Levett et al. (2003) observe that in pursuit of certain practices (e.g. sports) consumers are forced to consume in special “choice sets”, which are pre-determined and interconnected to ensure that one is almost impossible without the other. Many authors emphasize that environmental knowledge, and positive environmental attitudes and intentions all have to be strengthened by facilitating situational

conditions in order to be implemented by consumers (e.g. see Guagnano et al. 1995).

Sanne (2002) summarizes that all too often the excuse of sovereignty in consumption choices overrides reasonable arguments for making external conditions more facilitating to environmental behavior, and it is commonly thought that consumers can be informed and educated, but not coerced. Remarkably, some of the interviewees while talking about passive consumer attitudes towards energy conservation expressed their certainty that very little could be changed unless external forces (such as national or EU level regulations) oblige consumers to behave in a certain way. Thus, they recognize that the need for external push is great, yet they do not deem their own influence or power to be sufficient for effectively changing consumer behavior towards that which is more responsible.

Furthermore, the interviewees recognized that current product structure and technology do not promote conservation for, at least, the following reasons: the product structure is not flexible enough to provide tangible financial benefits, and current technology is not visual and supportive enough to provide timely motivating feedback. Another factor that greatly contributed to consumer passivity, as outlined in the interviewees, was a lack of understanding of current market mechanisms and conditions. Indeed, one can easily observe that part of the consumer lock-in in Finland is constructed through two significant contributing factors: on the one hand, lacking understanding of energy market system, and on the other, lacking feedback due to insufficient product range, and technological reasons. These two factors reinforce passivity, a lack of interest, and a lack of involvement with energy issues, which lead to the situation where information, education, and communication are lost to increasingly convenience-oriented attitudes.

Ironically, as admitted by the interviewees, much of the communication is tailored according to consumption volumes. In other words, the more significant is a household's consumption, the more tailored information and different opportunities for saving tend to be directed towards them. These findings concur with Summerton (2004), who strongly criticizes Swedish energy companies for practices where consumer services are linked to consumer income. At the same time, the findings of the consumer survey conducted for this research indicated that apartment residents tend to be more passive with energy conservation (due to low priority of energy issues comparing to other household costs). Thus, they require greater motivation and promotion to change their behavior. Throne-Holst et al. (2008) stipulate that housing cooperatives, for example, have great influence on apartment residents both in terms of communication and in altering surroundings so that they become more facilitating for environmental behavior. Thus, at least one of the possibilities in addressing apartment residents is for energy companies to negotiate and direct their communication towards housing cooperatives, which could serve as an effective mediator for communication with apartment residents.

As a final remark in the discussion on facilitating and constraining factors in energy consumption, it is worthwhile re-examining the MOAB model in the context of the results obtained from the survey and interviews in order to identify which domains and parts are currently being addressed in the promotion of energy conservation (see figure 14).

The MOAB figure below provides visualization of how much more needs to be accomplished if indeed the goal was to achieve widespread shifts in consumer behavior towards more energy conservation. The survey results suggest that consumer satisfaction, and hence trust in the quality of services, are high. This means that corporate efforts in communication have achieved much in terms of customer loyalty, but have not really fulfilled the transformative aspect of sustainability marketing. Knowledge expansion oriented efforts are profoundly weakened by uninspiring low-feedback provisions for energy monitoring and by the vicious circle of poor system understanding, lack of perceived control, lack of interest, and lack of resources. Yet, encouraged by overall positive attitudes towards energy conservation, communication and discussion around this issue continues to expand in scale and creativity.

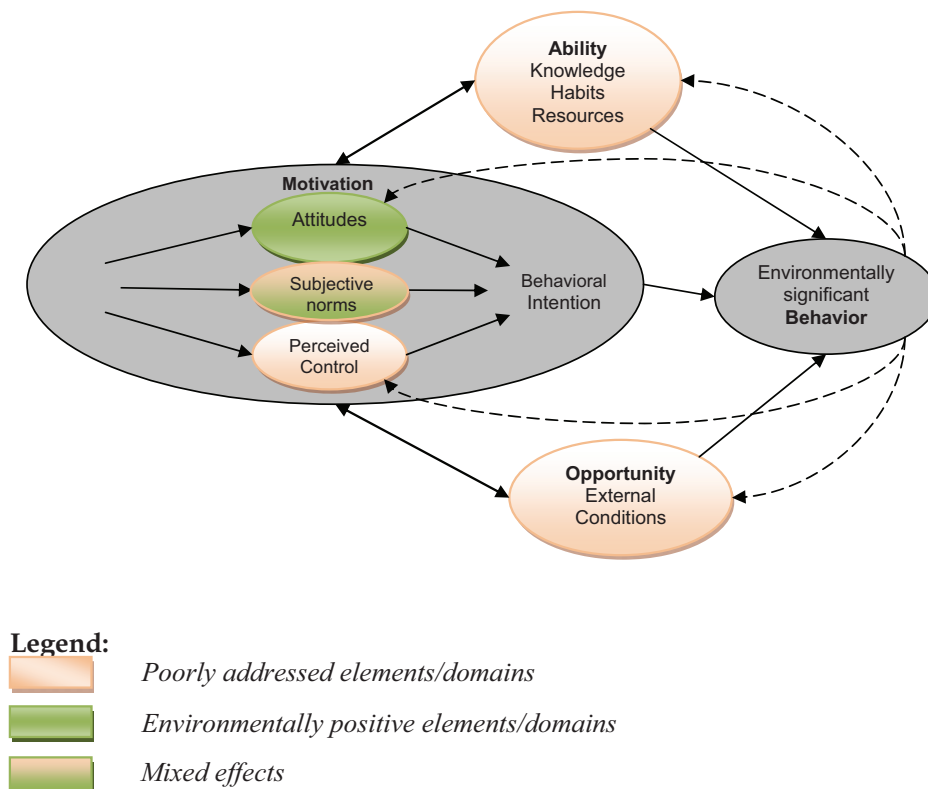


FIGURE 14 Motivation-Opportunity-Ability-Behavior Model. Source: Ölander & Thøgersen 1995; Thøgersen 2008, modified.

10.3 Energy conservation and sufficiency

The interview results indicated that most of the information sent out to consumers in connection to energy conservation is basically about consumption efficiency (efficient use of energy). The interviewees kept talking about “*wise use of energy*”, which was very closely connected to the notion of not being wasteful on purpose. As further elaborated, wise use of energy is about both smart everyday decisions (e.g. turning lights off in unused rooms), and more significant long-term investments (like insulation, heating). The notion of not being wasteful is the most defining one, as it means taking the most out of the electricity in use; in other words, using energy efficient household appliances and boiling just enough water for the two cups of tea in order not to waste the energy of warming up the unnecessary water.

According to the interviewees, for most consumers energy remains invisible not only to the eye, but also as an issue in itself. Energy is perceived through comfort, convenience, and general enjoyment of life, it is part of indirect consumption, being consumed in order to pursue a certain lifestyle. Tuomaala & Pihala (2007) point out how large household appliances are predicted to become increasingly popular in individual residencies. For instance, this is the case for tumble-dryers and for HVAC systems (heating-ventilation-air conditioning). In addition, the number and variety of various appliances per household have been both widening and growing (*ibid.*). Thus, promoting energy conservation has to involve promotion of a different lifestyle that does not just pursue increased comfort and convenience for less energy, but focuses on experiencing well-being without the increase in consumption of goods or services – in other words, focuses on sufficiency, the principle of “living well on less” (Young & Figge 2004). Yet the interviews showed that most of current energy saving-related communication from the providers is about how to increase the energy efficiency of today’s lifestyles, promoting more (or the same level of comfort/convenience) for less money, and with a benefit to the environment. Even though communication about energy efficiency and consumption efficiency constitutes useful and relevant information, it does not live up to the criteria of energy conservation, the latter being the absolute reduction of energy consumption over a period of time. Thus, such communication does not offer any solutions for the rebound and ripple effects of increased efficiency. This provides a sound (although partly incomplete) explanation of why household energy consumption is continuing to increase all over the world despite various efforts and initiatives in education, labeling, and modernization conducted by different energy industry actors.

11 CONCLUSIONS

This research started out with the complex goal and aspiration of understanding how energy providers in Finland perceive the communication of energy conservation practices to their household consumers. Educating and motivating customers to reduce and be more considerate about consumption of its own products/services is a seemingly controversial practice in a highly profit-oriented business environment. On the other hand, in the context of the increasing public and social pressure, profound changes in the environmental systems, and resource scarcity concerns truly proactive, unusual and novel business practices might be starting to emerge, such as sustainability marketing. After all, as Rex (2008) points out while debating whether marketing could ever be a positive contributing factor to sustainable production and consumption systems, the win-wins of sustainability are only possible within the world's current economic system if marketing's potential to serve environmental interests is fully explored and implemented.

In an attempt to provide a fulfilling and elaborate view of the communication and interaction processes between energy companies and their household customers, the research set out to answer four main questions, tackling both corporate perceptions of household consumers and household energy conservation, as well as the expectations and attitudes of household consumers towards conservation, and towards their energy providers. As is often the case with qualitative research, the main questions were refined and modified along the way (see e.g. Creswell 2003), and the foundation for the theoretical contribution emerged through the issues and aspects that came forth during the research process itself. However, the depth and genuineness of the understanding generated would not have been achieved if not for the supporting consumer survey, which allowed the flow of the qualitative data to filter through, and illuminate the key findings. Thus, the mixed method approach adopted fully justified itself, and allowed deeper and more reflective conclusions.

11.1 Main results

The main results of this research are organized in a way that provides straightforward links to the research questions presented at the beginning of this thesis. While reviewing the results one should keep in mind that the aspects brought out in this research are part of a complex societal system, where many more factors are involved. Within the scope of this dissertation only one relationship is explored in more detail, and this exploration could serve as a platform for further expansion of energy industry research. Thus, it is useful to remember that even the relationship in question is subject to many more influences, and in this context the answers below represent only a share of the total picture.

11.1.1 The outlook of Finnish households: energy conservation is good, but...

The findings of this research, as well as similar studies, indicate that, overall, Finnish consumers are positively oriented towards energy conservation. Positive attitudes, though, do not translate into serious efforts at reducing household energy consumption on a widespread basis. One of the explanations is the increasingly convenience-oriented attitudes in life and towards consumption. In other words, the findings suggest that people implement such practices that do not require the investment of much effort, resources, or concentration. Even the search for information online seems to be too troublesome, as the majority prefers to receive energy saving information through TV, radio, or newspapers. However, the findings also show that financial incentives and ownership of housing clearly have an influence on the interest and willingness of people to get involved with energy conservation.

Moreover, the expectations of people about the responsibility of communicating information on energy saving are mainly directed towards their energy providers, as well as towards manufacturers and retailers of household appliances; while expectations in that area towards governmental and non-governmental organizations are comparatively lower. So, the research shows that both satisfaction and expectations of consumers towards energy providers are high, but the interest towards the issue of energy itself remains low – which is actually a concern of the energy companies too. For example, this research revealed that in reality a large share of people (e.g. about 37% in the survey) do not even monitor their energy consumption in any way. Not surprisingly, an equally significant number of people have never tried practicing energy saving.

Behind such profound indifference is the fact, openly admitted by the energy companies, which comes down to the absence of technology that would allow easy and accurate monitoring of energy consumption in households (real-time meters). A lack of timely feedback, complex infrequent energy bills based on estimates, and a lack of market incentives (products), all contribute to energy being easily forgotten and phased out of people's attention and lives. In addition, their preferences become framed more and more by the habit of never

having to think about energy. Thus, energy companies today find themselves pondering over the question of whether the development of energy services should continue in the direction of increasingly convenient and invisible energy, or whether educating and sensitizing consumers towards energy issues might take the companies onto a new strategic level.

11.1.2 The outlook of interviewed energy providers: households need to feel good

Finnish energy companies perceive household consumers as rather passive and indifferent. Low interest and involvement with energy issues have been characteristic of the households for many years, but the attitudes especially towards energy saving have reduced in strength and relevancy since the mid-90s. This concurs with other studies that outline how energy conservation lost in importance in 1994 after the economic recession in Finland was over (e.g. Kiljunen 2008). However, the energy providers interviewed recognize that the awareness towards environmental and climate issues has notably increased over the last few years, and thus the attitudes of many consumers towards energy conservation have turned more positive. At the same time, higher energy prices are also acknowledged as effective drivers of increased consumer interest towards energy-saving solutions for homes.

Yet money does not always seem to be the decisive factor – consumers in Finland are perceived to be more oriented towards “fair treatment”, and willing to pay higher than cheapest price as long as they feel that it is reasonable and fair. This opportunity is very aptly taken advantage of by energy companies that are ready to offer slightly higher prices on the condition that their reputation and brand image allow claims of reliability. Moreover, the findings indicate just how accurately energy companies sense the convenience-oriented trends in current lifestyles. As reported in interviews, consumers are increasingly ready to pay for reliable, but easy and convenient solutions.

But in fact, the implications of such attitudes go much further as the findings here suggest. The emphasis that the interviewed energy companies placed on consumer sovereignty demonstrates how corporate communication is oriented towards making customers feel good – not only with easy solutions, but by means of reassuring communication too. The concern over possible consumer reactance to energy conservation messages, the danger of making a customer feel bad, clearly draw the borders for encouragement of energy conservation and instead give preference to communication “*with no hard feelings*”.

The essence of the problem, therefore, lies in the perception of customer needs held by the energy companies. Even though the interviewees present energy saving communication as a response to the needs of increasingly environmentally-conscious consumers, in reality such communication is a response to the need of consumers to feel good about themselves and their choices. In other words, companies do not feel that energy conservation is really part of consumer needs, but rather that communication about it might fulfill the

need of feeling good, along with easy and convenient solutions that are offered as products to the customers.

One of the most interesting aspects of this research's findings is connected to the fact that energy companies are well aware of an acute problem with people lacking knowledge and understanding about the energy market system and mechanisms. They acknowledge how poorly the adaptation to the liberalized energy market system has proceeded, even though the deregulation itself took place more than ten years ago. Obscure and piecemeal understanding of the energy market results in consumer confusion about price formation, understanding bills, freedom of choice in the market, and about the roles of retailer and transmission companies. The lack in background knowledge and understanding actually undermines the ability of energy companies to compete more effectively, and as they themselves recognize, results in even more consumer indifference to energy as a product. However, despite the fact that all the market actors (not only energy companies) are well aware of the problem, very little is being done in term of communication to promote a deeper understanding of the energy market system in Finland. Instead, the communication focus is placed on other issues (like energy saving), which are equally important but fail to get through effectively without the solid base of background knowledge for people to rely on. Even though the background knowledge by itself is not a decisive factor in determining consumer behavior, – when enveloped and reinforced by other factors (e.g. infrastructure), it forms a deadlock system for unsustainable consumption patterns.

11.1.3 Encouraging energy conservation is about relationship building

Strategic thinking in the energy companies interviewed is very much framed by maintaining a balance between generation capacity and profits – and increasingly so in the long-term. Therefore, the focus is not placed on high sales per household, but rather on an extensive customer base with long-term orientation for relationships. This means that customer communication is one of the essential tools for maintenance and management of relationships. Yet, as mentioned earlier, interest and involvement of people with energy issues are so low that energy companies can barely differentiate themselves, hence the modest spending on advertising, and the resulting preference for MPR approach and methods. Much of the corporate communication is built around so-called reassurance communication directed towards the strengthening of corporate reputation. Even though this type of communication is frequently associated with PR, its use for persuasion and reassurance of consumers in terms of the choice they made in energy provider selection clearly highlights the role of such communication as a marketing tool. Communication of energy saving information in particular, serves a dual purpose of contributing to environmentally responsible image of energy companies, and building more trustful and solid relationships with its customers by reassuring them about their choice of energy provider.

Even though the understanding and perception of the need for energy companies to increasingly provide solutions rather than just be a retailer, turned out to be rather explicit among the energy companies interviewed, their activities and communication structures are not yet in line with that understanding. As admitted in the interviews, much of today's corporate communication remains a one-way flow, and building two-way communication is one of the key challenges for the energy industry. It is recognized that achieving interactive two-way communication would greatly contribute to relationship-building, as well as make the communication itself more meaningful. However, a lack of consumer involvement leads to the situation where many of the corporate efforts remain unnoticed. For instance, extensive communication via corporate websites is taken advantage of by relatively few people. In this regard the survey findings showed that many people never visit the website of the energy provider. Thus, the root of the problem – namely, lack of interest – undermines both consumers' possibilities to become more sustainable, and corporate opportunities to become more competitive. Other means of corporate communication often come down to relationship marketing pages mailed together with quarterly electricity bills, and corporate magazines. The difference between larger and smaller energy companies is in the extent of resources they are willing to spend on MPR. Larger firms are able to afford communicating about e.g. energy saving through billboards and advertising stands in order to create more awareness of energy saving, together with awareness of its own brand and its approach to environmental issues. Smaller companies mainly communicate via local channels, such as newspapers and through contributions to the local community, like sponsoring energy saving booklets for school children.

11.1.4 Households are encouraged to increase their consumption efficiency

Understanding the paradox of energy companies encouraging less consumption is easier from the stance of theory on efficiency, sufficiency, and conservation. As the interviews indicated, a drastic reduction in profits coming from the household sector due to energy saving promotion is probably the least concern of energy companies. The companies interviewed share the same belief about the unlikelihood of households being so energy conservation-oriented that it would have any notable effect on the profits of the companies. Essentially, this is due to the nature of energy, and how closely it is integrated into the daily lives of people. In other words, even though hardly anyone thinks about energy, it is the basis for all daily activities, it is part of indirect consumption, and therefore its significance is only artificially diminished by its mediating and invisible role. Thus, there is an intuitive understanding that significantly reducing energy consumption in households would require major changes in lifestyles, and that the energy saving tips provided by energy companies are a good start, but much more is required for notable reductions.

From the theoretical point of view, as mentioned earlier, the energy saving advice coming from the providers is related to energy efficiency (technical improvements) and to consumption efficiency (efficient behavior). Energy conservation is perceived as “*wise use*” of energy, which comes down to both being smart in daily life related to energy consumption, and making smart investments for longer term savings (e.g. heating systems), however it is not perceived to include the elements of sufficiency (curtailment behavior). The only problem with such understanding of energy conservation (and the resulting communication about it) is that it does not necessarily lead to reductions in energy consumption in absolute terms; this is due to the rebound effect. Historically, it has been shown that as long as the sufficiency element is missing, all efficiency gains are offset by various rebounds and ripple effects. Of course, in the context of household consumption the direct rebound effect is much less obvious: e.g. it is not clear whether the outcome if the household installed an efficient heating system, would be that the extra money was used to acquire other appliances that would consume the saved energy. Therefore, one should not underestimate the value of encouragement for both efficiency and consumption efficiency – they could potentially serve as great sources of energy consumption reduction in households. However, the problem with current communication is that it has not proved to be effective yet, and even though consumer attitudes towards energy conservation have been growing warmer, the value-action gap remains strong. This research suggests that the underlying reasons of the ineffectiveness are connected to people having a very vague and unclear understanding of the energy market and its mechanisms, a lack of adequate technology (e.g. real-time meters), and a lack of a motivating product structure in the energy market. These reasons very much reinforce each other’s impact, and contribute to people’s overall low involvement with energy issues and passivity.

In addition, one should not dismiss sufficiency too easily, because it constitutes an important part of energy conservation. Sufficiency is the element that allows the reductions in energy consumption to become of absolute nature as compared to the relative gains. Even though the direct rebound effects might not take place in the context of one household, the likelihood of indirect effects turning into reality is very high. This means that all the monetary gains from energy savings might be directed towards other types of consumption, such as long distance vacation air travel, etc. In this sense, encouraging the change in lifestyles towards those that are more sufficient is an essential part of making consumption more sustainable. However, the interviews indicated that due to the perception of risks associated with such communication, companies are hardly willing to do it. It is true that transformational communication is very challenging, requires creativity and out-of-the-box thinking. So, the findings of this research indicate that even though energy companies go as far as trying to encourage energy saving, they are not willing to communicate about the lifestyle changes that are required to achieve energy conservation. The perceived need of making consumers feel good about themselves, as well as

about their sovereignty and freedom is so essential to the way business has always functioned that the perception of risks associated with possible consumer reactance is too weighty.

Thus, in order to achieve energy conservation it is necessary to both eliminate the current barriers that make corporate communication about efficiency and consumption efficiency fruitless, and create other supportive initiatives for communication about sufficiency, and less materialistic and more sustainable lifestyles.

11.2 Analytical contributions of the study

When examined closely, the main aim of this research study contains three major elements: energy providers in Finland and their perceptions about communication; household consumers; and finally, energy conservation itself. Thus, the contributions of the study are divided between these three elements. When considered altogether, they form a picture of the communication process in the energy industry in Finland between energy providers and their household customers, with a special focus on energy conservation. This unique picture represents the principal value of this study from a sustainable consumption promotion point of view. For example, Lorek (2009) observes in relation to sustainable consumption studies that it is important "to compliment the experiences and efforts of sector-, place-, product- and consumer-oriented approaches with analytical perspectives and practical initiatives treating production and consumption jointly" (p.66). So, as more similar types of studies accumulate, the complex mosaic of sustainable consumption promotion will become clearer and more complete, allowing different consumption areas to be addressed by more comprehensive yet tailor-targeted actions in order to motivate sustainable consumption. In the following sub-sections the contributions of this research are summarized, thereby constructing the picture of communication challenges that currently undermine sustainable consumption promotion in the energy industry in Finland.

11.2.1 The corporate angle and contribution to sustainability marketing

The results of the study show that encouraging energy conservation (or what is understood as energy conservation) has turned into a distinctive practice in the energy industry in Finland. The reasons are complex and include the special nature of energy as a product and related differentiation implications; today's global attention on climate change and energy issues; as well as the fact that energy industry is among highly regulated industries in Finland, which means that the degree of integration of environmental issues into strategy is substantial (Banerjee 2002). Moreover, environmental issues are used extensively in marketing, especially in the so-called MPR. In other words, energy companies tend to benefit from their environmental efforts through marketing and consumer communication (see e.g. Pesonen's triangle, 2003). In

fact, one could consider these efforts as going beyond conventional, since encouragement of energy conservation among its own customers is a rather brave step on the part of energy companies. For example, Peattie & Crane (2005) value the willingness to change markets (as well as products) as extremely important. While Belz & Peattie (2009) refer to this as “the inside-out sustainability marketing transformation” – meaning that companies turn into sustainability change agents. The authors also point out that such transformations are very risky from a business perspective because besides creating new value, they could destroy existing values (ibid.). Thus, it is of great interest and importance to study successful examples that have had to overcome the risks and transform the markets, but it is of equal importance to examine in great detail the risks that prevent other companies from engaging in sustainability marketing, or the risks and factors that push these companies to do it on a more superficial level and thereby engaging in *green spinning*, *green selling*, *harvesting*, etc. (as described by Peattie & Crane 2005).

In this context, the contribution to sustainability marketing of the research study presented here consists of an explicit exposure of the perceived risks of inside-out transformative sustainability marketing. These perceptions became evident through the close examination of communication between energy companies in Finland and their household customers concerning the issue of energy saving. Moreover, these perceptions serve as main defining and limiting factors for corporate communication on sustainable consumption. The figure below summarizes both the perceived benefits and risks that emerged as the results of the research study:

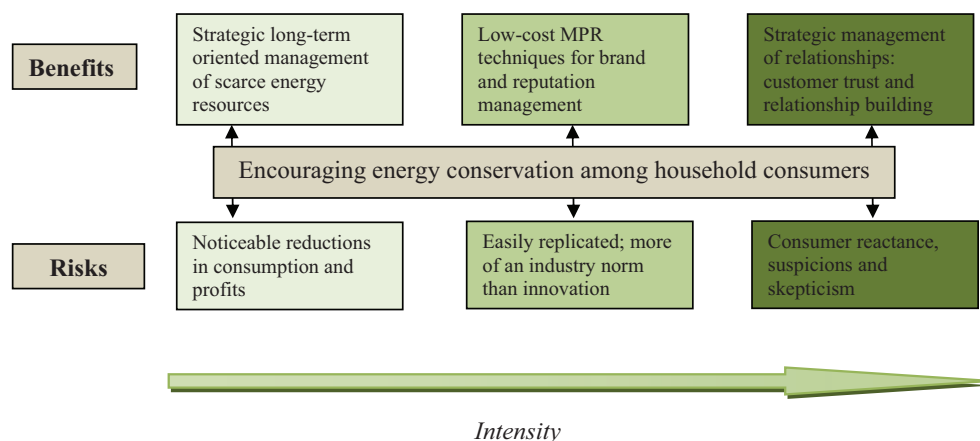


FIGURE 15 Corporate risks and benefits of encouraging energy conservation among household consumers in perceptions of energy companies in Finland.

Interestingly, the findings indicate that the biggest risk, as perceived by the interviewed energy companies, is potential consumer reactance and skepticism towards communication/actions that aim to promote sustainable consumption, while noticeable reductions in the actual consumption are the least concern of energy companies. However, understanding the perceived risks and their importance to the energy companies enables other concerned actors (e.g. government, media) to tackle the situation more effectively; for instance, by:

- understanding specifically its own role and importance in motivating sustainable consumption;
- understanding the right mechanisms for corporate incentives to promote sustainable consumption;
- finding means to reduce the perceived risks, and therefore empower the companies to strengthen and deepen their communication efforts, and move from a superficial level to a more meaningful one;
- providing meaningful support and motivation for other actors to get involved with sustainable consumption promotion, and developing opportunities for mutually beneficial co-operation;

Although it is true that presently the interviewed energy companies are not managing to engage in inside-out transformative sustainability marketing at an appropriate depth and scale, this could be changed with precision-targeted support from other industry actors. One has to recognize that the transformations that should take place in today's society are so substantial and extensive that co-operation is required between all the actors involved in order to achieve the necessary scale. It is also worthwhile pointing out that helping companies to engage with sustainability marketing is strategically important because, at least according to the findings of this research study, consumer expectations in the area of energy conservation advice are notably more directed towards corporate actors (energy providers, household appliance producers, and retailers) rather than towards governmental or non-governmental organizations.

11.2.2 The consumer angle: the deadlock of undermining factors

Reflecting on the sustainable consumption literature, several sets of factors were identified that facilitate sustainable patterns of consumption, and especially in the area of household energy conservation. The nature of energy consumption is such that people generally place very low importance on it, unless the costs are significant enough to make the difference in overall household expenses. Therefore, tackling energy consumption is a complex matter and requires a combination of different strategies and interventions to prove effective (see e.g. overview by Abrahamse et al. 2005). Social and cultural norms are important in shaping the ways of energy consumption, but infrastructure is often the defining factor (Southerton et al. 2004), which, through inconvenience, can often

override the primary motivation to be environmentally-friendly. In this regard, facilitation of energy conservation in the household should not rely on information and education alone, but should be provided by a supportive infrastructure, as well as tangible and/or intangible rewards (e.g. praise, feedback) in order to solidify positive emotional (as well as financial) experiences of behaving sustainably. The MOAB model (Ölander & Thøgersen 1995, figure 14) applied in this research study helped to map out those factors that remain unaddressed by energy companies in their energy saving promotion.

The findings of the study show that energy companies were mostly engaged in tackling the “knowledge” element by providing information, tips, and advice about energy saving practices. However, studies such as that of Desmedt et al. (2009) point out that general information alone is rarely sufficient, especially in the case of “invisible” energy consumption. In addition, Heiskanen & Lovio (2010), for example, highlight the importance of tailored advice and solutions through local intermediaries for the promotion of energy efficiency. Yet, as the research study here shows, presently, energy providers are struggling to achieve a two-way flow of communication with their household consumers, let alone personalized information and feedback. According to the findings, other important factors identified from the literature on energy conservation and in the MOAB model, remain addressed – for instance, external conditions (motivating product structure and supporting smart technology missing), and perceived control (confusion and lack of understanding about the mechanisms of the energy market).

Interestingly, the findings demonstrate how these undermining factors related to energy saving work serve to reinforce each other, creating a deadlock of interconnections that challenge even the existing efforts in communication and motivation towards conservation. Thus, the contribution of these findings to the streams of consumer behavior and sustainable consumption is in depicting the mechanisms that show how individual factors from different domains of consumer behavior (motivation, ability and opportunity domains) can merge together into a consistently demotivating system. In addition, it is necessary to distinguish between different layers of knowledge in the ability domain, since the results of the study identified the lack of background knowledge about the energy market system in general (mediated by other factors) as undermining embracing the more specific knowledge on energy conservation. Figure 16 below demonstrates how a lack of background knowledge interacts with other factors to create the deadlock of unsustainable energy consumption in households.

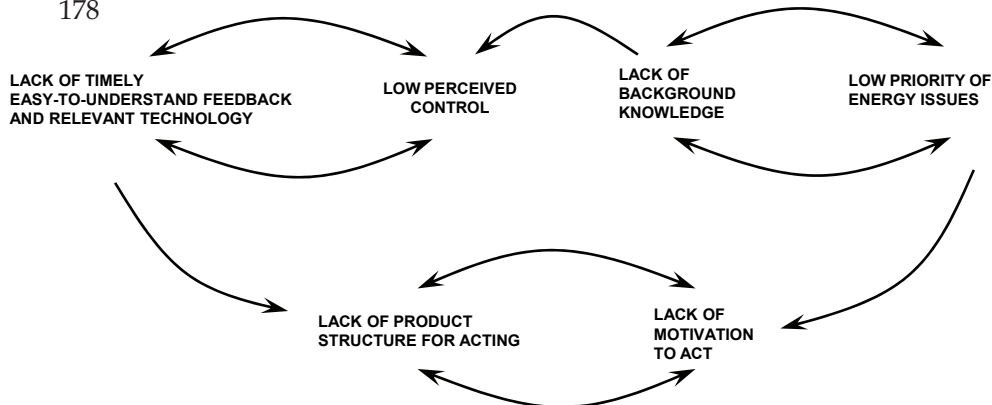


FIGURE 16 Lack of background knowledge on energy market in interaction with other factors that create the deadlock of unsustainable energy consumption in households.

Understanding the interaction mechanisms between these factors and underlying deeper reasons can help to address the deadlock more effectively. For example, it is evident that in order to increase perceived control of consumers, it is necessary to address both the feedback structures, as well as the background knowledge of people about the energy market. However, it is worthwhile noting that the research study here does not propose that lack of background knowledge is the key factor for poor levels of energy conservation in households, but it shows how a failure to address one of the factors can lead to the futility of efforts tackling other factors. In this context, the emphasis on the lack of background knowledge is due to the fact that it seems to have been ripped of any importance in the discussions about promoting energy efficiency and conservation, while the findings of this study show the contrary. Overall, the conclusion is that solutions for energy conservation require complex multi-layer approaches, as well as co-operation between different actors in order to tackle all the different elements of the deadlock.

11.2.3 Achieving energy conservation: efficiency is not enough

As discussed in the findings, much of the communication to household consumers concerning energy saving is about increasing their energy efficiency and consumption efficiency. Both subjects are important aspects of energy conservation, but due to rebound (ripple) effects it is virtually impossible to achieve absolute reductions in energy consumption if the third element of conservation is ignored, namely sufficiency (curtailment behavior). As shown in the theoretical overview, there is no question of whether the rebound effect exists or takes place – it is widely recognized that it does. There are, however, many different estimations of how large (or small) the rebound effects might be. History has shown that all efficiency improvements have thus far always led to various rebound effects, the most famous example, perhaps, being the light bulb. In that connection, Princen (2005) paraphrases the energy-management expert Andrew Rudin, and points out that “...it’s not the lamp, it’s the

switch...” (p.109). In other words, to conserve energy one can get an efficient light bulb (efficiency), and remember to switch off the lights in empty rooms (consumption efficiency), but conservation actually goes deeper than that. It is the conscious effort to use less light overall not only thanks to technology, but thanks to the change in behavior oriented more towards saving (sufficiency); for example, by staying awake less during darker times of the year to use less light in the evenings. Thus, efficiency, consumption efficiency and sufficiency are complementary principles in energy conservation, and if one sets out to achieve absolute reductions in energy consumption, all three principles should be followed.

A contribution to the understanding of sufficiency was initially set as an additional goal in this research. But, the contribution has taken a wider form, going beyond the sufficiency principle alone. By means of theoretical synthesis, the concept of energy conservation was made more specific and explicit; containing three main elements as described above (e.g. see figure 5). In the course of the research it was shown how energy conservation is often perceived in terms of efficiency only, while the element of curtailment is ignored or forgotten. Interestingly, this trend is so common and widespread that even at the EU level the conversation revolves around efficiency vs. conservation. For instance, the official Europe’s Energy Portal features seven main menus as starting points for exploring the content of the portal, but none of them deal with conservation. Instead, the titles of the menus are the following: “news”, “prices”, “statistics”, “efficiency”, “environment”, “directory”, “contact”. Princen (2005) explains that over the years, the term “efficiency” has gained much popularity – being used as a scientifically glossy term for “better” and “more”. But in reality, it is precisely the ambiguity of efficiency claims that serves as the base for its widespread use in politics as a means of influence, persuasion, and legitimization. In this context, the contribution of this research study gains both theoretical and practical value in pointing out that energy conservation includes far more than just efficiency alone, and in conceptualizing the key elements of sustainable energy use. After all, if the ambitious goals of 2020 are indeed to be achieved, the conversation needs to start developing in the direction of energy conservation as a whole, and not only around one of its elements.

11.3 Practical implications and recommendations

This research study has direct practical implications and recommendations for action in the area of communication with household consumers about their energy consumption and conservation. In fact, the practical implications of the study are a natural consequence to the main goal of the study, which sought to understand how energy providers in Finland perceived communication of energy conservation practices directed to their household consumers. Deeper

understanding acquired in the study allows recommendations for improvements to be made, and to map out the weak spots in communication.

For instance, figure 16 depicting the lack in background knowledge about energy market in combination with other factors leading to unsustainable patterns of energy consumption can serve as a straightforward guideline for tackling this deadlock. The elements of the deadlock are both internal and external to consumers, and as one can notice from figure 16, it is possible to address the internal elements by first fixing the external. So, low perceived control of consumers can be addressed through more regular and timely provision of feedback on their energy consumption (e.g. real-time access to personal consumption meters online), and the introduction of relevant technology that could allow this (e.g. smart meters). In its turn, the lack of motivation to act could be addressed through the introduction of more dynamically priced energy products in the market (less fixed and more fluctuating energy prices for households), allowing a demand response approach. The interconnectedness between all the factors means that positive improvements in one of the loops (in figure 16) could spill over to another, but at the same time it means that the positive achievements might also be cancelled out by a lack of improvement in the other loops. This agrees with the conclusions drawn in earlier research that a combination of different interventions for energy conservation is more effective than any singular one (see e.g. Stern 2000; Abrahamse et al. 2005 for overview). As outlined earlier, the lack of a background understanding of the energy market is considered to be a rather powerful undermining factor just by itself, but especially in combination with other factors. Addressing this lack in understanding certainly requires the use of informational instruments, but due to overall information overload (see e.g. Lorek 2009) it might not be sufficient. The findings of this research study suggest that energy providers currently supply households with energy saving tips and information, but these need to be complemented with:

- education on energy market system in general;
- tangible incentives for conservation (e.g. dynamically-priced energy products);
- intangible support in the form of real-time feedback;
- provision of relevant technology (wide-spread installation of smart meters).

Even though energy providers are presently carrying out informational campaigns regarding energy saving, it might be too much to expect them to implement the whole range of measures presented here. So, in practice, these recommendations could be carried out through cooperation between different actors involved in the energy market. The survey findings revealed that household consumers also expect information and advice from e.g. producers and retailers of household appliances – thus, in the future they could be more involved in promotion of energy conservation. Interviews showed that energy

providers deem the media as a very important mediating actor in the process of changing consumer behavior, while the most powerful actor was identified as the government (via its regulations). Thus, the task of governmental structures relates to providing strong direction and push (e.g. for widespread installation of smart meters), while the media increases awareness and acceptance by the public. In addition, as described earlier, understanding the risks that are perceived as significant by the energy providers can help other actors involved in the market to control these risks or to at least minimize them in order to facilitate current communication about energy saving conducted by energy providers. For example, since energy providers perceive consumer reactance to promotion of energy conservation as one of the risks to their business, inducing public acceptance of such promotion would be an important supportive element from the governmental, municipal, and media sides.

In addition, findings from the research study suggest that it might be necessary to increase understanding on the corporate side that tangible two-way communication would provide energy companies with benefits in CRM, and allow more effective competition and differentiation. It was evident from the study results that despite extensive communication on the Internet, due to low consumer involvement hardly any of the customers visited the websites of their providers. Thus, communication via the Internet needs to be further personalized in order to attract customers to get involved in a two-way communication; for example, through a personal energy consumption monitoring service online. Currently, the installations of smart meters in Finland are ongoing, and it is stated that by the end of 2014 at least 80% of metering points should be replaced by systems capable of hourly metering (Trygg 2009). However, it seems that the process involves much uncertainty, and the discussions concerning AMM and smart metering have been going on since at least 2006, the time that this research study was initially started. Lutzenhiser (2002) observes that not everyone will benefit from the installations of smart meters; therefore there are many questions about how the new technology will be shaped and how it will be used. As the technologies are being shaped, governmental structures have the power to direct the developments towards a more sustainable direction. For example, Lorek (2009) summarizes that there is ample evidence confirming the effectiveness of hard regulatory instruments in the field of sustainable consumption. Furthermore, the research study presented in this thesis brought out the question of uncertainty in the development of energy services - towards a more convenience-oriented solution or sustainability-oriented solution. The market is giving mixed messages to companies since so far the consumers are increasingly convenience-oriented, but the declared direction of movement is sustainability. In this context government also has a responsibility to take concrete steps to support the development of energy services in the direction of sustainable consumption. However, even more interesting is a question of whether convenience and sustainability-oriented solutions could be combined,

rather than opposing each other; thus, this is a good direction for future research in the area of energy conservation.

11.4 The “fit” and reflexivity as criteria for evaluation in pragmatism inspired mixed methodology research

Traditionally, the evaluation of research follows the pathways of reliability and validity. This is especially true for quantitative research, and in some sense for qualitative studies – although the actual term “validity” is often substituted with less positivistic terminology, where “trustworthiness” and “authenticity” are emphasized (Lincoln & Guba 1985). However, Flick (2009) writes that the pragmatic combination of qualitative and quantitative research puts an end to the paradigm war, and some authors even call it the “third methodological movement” with reference to the quantitative and qualitative movements (Tashakkori & Teddlie 2003). It is interesting that the most essential distinguishing feature of pragmatism inspired mixed methodologies-research is that the research aim becomes the paradigmatic foundation from the methodological point of view (Flick 2009). In other words, evaluating mixed methods research deals with the question of whether the chosen methods were appropriate and “fitting” in relation to the research question(s), and whether they promoted the attainment of the main research goal. Moreover, the issue of complementarity of methods (rather than rivalry) is an important consideration in the evaluation of mixed methods research.

Even though Creswell (2003) and Tashakkori & Teddlie (1998) advocate that mixed methods research requires the use of validity procedures for both the quantitative and qualitative phases of the study, from the standpoint of pragmatism it is even more important to outline how the research benefitted from the use of the mixed methods approach. Therefore, a more detailed discussion related to validity is presented separately for the two phases of the study (in the order of implementation of the phases), and a summary at the end is provided for an explicit emphasis on the complementarity of the methods and the related contribution to the value of the findings. In addition, the role of the researcher is outlined to show full awareness of certain research limitations and advantages.

11.4.1 Assessing the QUAN phase

The quantitative part of this research is not traditional in a sense that it did not pose a goal of testing a hypothesis, or conducting an experiment. Thus, assessing the validity of this phase is less straightforward than applying certain measurements to the hypothesis or to the experiment. At the same time, it is useful to keep in mind that the pragmatic paradigm adopted in this research leans towards procedures that best meet the needs and purposes of the research (Crotty 1998). In that respect, the main goal of the survey was to collect

descriptive data on the Finnish population, and on related aspects of energy consumption, attitudes towards energy conservation, etc. So, the main intention of the survey brings forward the issue of *representativeness and generalizability* as the important criteria for evaluation.

Representativeness is very closely related to the sampling method, and it is widely recognized that random sampling is much more representative than non-random sampling. However, some authors also observe that certain types of non-random sampling, such as quota sampling, significantly improve the quality of the data (e.g. see Davies 2007). In addition, according to Babbie (2007) quota sampling actually secures a reasonable representation of the population when it is implemented appropriately. Thus, the representativeness of the Finnish population in this research study was ensured through quota sampling with reference to the different size households in the national statistics of Finland. Moreover, the reliability of the sampling method was later confirmed through comparison of the survey data with the corresponding data from Finnish national statistics for the same year (see table 9). Thus, for instance, the data is clearly representative in terms of gender and in terms of household size (number of household residents), while in terms of age and education the survey population is younger and more educated than that found in the national statistics data. These limitations should be kept in mind while reviewing the results of the survey, but they do not undermine the value of the research findings that the survey helped reveal (e.g. the discrepancy between consumer preferred channels of communication and the ones that are currently employed by energy companies).

The discussion on the *representativeness* logically leads one to give consideration to the *generalizability* of the results; which Creswell (2003) describes as external validity relating to the ability to apply the results to new settings, people, or samples. So, in this case, for example, how generalizable are the results of the survey to the rest of the population. This issue is especially relevant in the context of the geographical bias of the survey population towards Jyväskylä area. As with the other characteristics of the population, one has to simply keep in mind that the findings of the survey are based on the population who, to a considerable extent, live in the Jyväskylä area – the bias is openly admitted, and it is for the reader to consider whether the bias is of importance to the overall findings of the research. In that sense it is useful to bear in mind that the Jyväskylä area is located in Central Finland, and does not represent a cultural minority in Finland, neither is it distinguished with any particular features that would make it especially different from the rest of the country. In addition, the subsequent results of the corporate interviews showed that the picture of the household consumer that emerged based on the survey findings very much agrees with how household consumers were perceived in the energy companies. Thus, the survey findings, to a considerable degree, reflected the perceptions prevalent in energy companies.

Furthermore, the results of the cross-tabular analysis in all cases were supported by indications of *statistical significance*, which provides a sense of the probability of finding a relationship in the sample where there is none in the population (Neuman 1994). In other words, the level of statistical significance indicates the likelihood of relationships identified in the survey being due to chance factors. So, the higher the p-value of the relationship, the higher is the likelihood of that reported results occurred by chance. Therefore, the likelihood of research results presented here being due to chance with p-values of 0,001-0,002 is very low, while the certainty that the results are not due to chance factors is about 99,998-99,999%. Sapsford (2007) points out that it is essential to report statistical significance together with results, providing the reader with an understanding of how much could be attributed to chance alone.

Creswell (2003) reminds us that threats to external validity arise when researchers make incorrect inferences, generalizing from the sample data to other persons or settings, and situations in the past and future. Thus, the external validity is also defined by the thoroughness of reporting any biases that might have occurred in the data, which should be made explicit. The openness of the research process and the explicit description of the limitations allow readers to enjoy the findings of the research with a necessary degree of cautiousness. In case of this particular research study, one should bear in mind the limitations described earlier, but also should be able to rely on the reported statistical significance of the survey results from the sample.

11.4.2 Evaluation of QUAL phase with inputs from QUAN

Creswell (2007) provides an excellent summary of different perspectives on validation in qualitative research. For example, the author shows how validation of qualitative research has proceeded from being more quantitatively guided (e.g. using reliability as criterion) to being guided by more naturalistic axioms (the concept of "trustworthiness", e.g. Lincoln & Guba 1985). Some of the more recent developments go so far as dismissing the term "validity" because it does not reflect and even distracts from the deeper and more overwhelming purpose of understanding, rather than validating (e.g. Wolcott 1999). Interestingly, Creswell (2007) observes that validation standards have increasingly moved towards the explicitness and reflexivity of the researcher as an ensuring factor for trustworthiness. In this context the synthesis of validation perspectives provided by Whitemore et al. (2001) seems to provide a comprehensive approach towards evaluation criteria, organized into primary and secondary issues. The four primary criteria identified by the authors are credibility, authenticity, criticality and integrity. Secondary issues are related to explicitness, vividness, creativity, thoroughness, congruence, and sensitivity. The following evaluation is based on the synthesis of criteria proposed by Whitemore et al. (2001) due to its comprehensiveness and universality in terms of the research's philosophical background.

Credibility relates to how accurately the results reflect the interpretations of the participants' meanings. Among the different validation strategies, "member checking" is traditionally considered as one of the trustworthy means to check credibility. For example, Lincoln & Guba (1985) refer to member checking as "the most critical technique for establishing credibility". Therefore, ideally, preliminary results of the research should be taken back to the participants, so that they could evaluate the accuracy of the interpretations. In reality, however, in business research the interviewees are often too busy to devote time to such activities, and one has to cope with both the personal research schedule and the validation needs of the study. In particular, this research study dealt with three energy companies through six different interviewees. However, already during the initial phase of approaching the potential participants from the energy companies certain difficulties were already experienced due to the busy schedules of the interviewees. Therefore, once the preliminary results of the research were ready, the coping strategy under the circumstances was to send them to the energy company that proved most approachable. The results were reviewed within the company, and even published in its internal customer magazine as part of the "openness" strategy of the company. No objections or amendments were proposed by the company with regard to the results that they reviewed; indeed, the company expressed interest and reflected on the issues discussed in the results.

Based on an extensive review of qualitative writings, Whitemore et al. (2001) describe *authenticity* as multivocality and high awareness of subtle differences between the voices of the research participants. In that sense the multivocality in the research study here has been implemented through explicit outlining of differences between the opinions expressed by smaller and larger companies involved in the studies. However, it is the case that this research does not provide deeper reflection upon these differences because the comparison was beyond the purposes of the research. Thus, the differences in corporate opinions (although not major) presented in the analysis can serve as a starting point for future studies, and a deeper level of exploration. Instead, much more attention was paid to the differences that were revealed due to the mixed methods approach to data collection. In that sense the multivocality of having both consumers and energy companies as participants of the research has led to interesting and unique findings concerning communication, which would not have been possible otherwise.

The synthesis of *criticality*-as-criterion descriptions shows that it is about the reflexivity, open inquiry and critical analysis of all aspects of inquiry (Whitemore et al. 2001). Among the validation strategies, peer review or debriefing might be helpful in maintaining the reflexivity throughout the whole research process, as well as the self-determined approach to remain attentive and reflexive from the outset of the study. The research study presented here benefitted much from the inputs of peers in response to academic presentations of the research findings in seminars and conferences. As a result of the inputs, the research questions as well as the angles of analysis were refined in the

process. The discussions with peers during the early stages of research planning were found especially crucial, as the discussion on the adopted angle of the research (consumer vs. corporate) pushed this research study to develop a special stance of a two-sided approach that allowed a much fuller understanding of the energy conservation promotion phenomenon to be obtained. Moreover, additional interesting insights were gained as a result of the preliminary findings' presented at the Finnish energy industry communication seminar. For example, comments from seminar participants confirmed and deepened the prevalent perception of household consumers in Finland that was already constructed based on the interviews with the energy companies.

The fourth criterion – *integrity* – relates to the subjectivity of interpretive research. Whittemore et al. (2001) emphasize that even though qualitative research recognizes the value of the researcher's subjective interpretations, it is important to provide evidence in the process of the research that the interpretations are based on and indeed grounded in data. Creswell (2007) recommends clarifying any possible biases from the very outset of the study as a validation strategy. It is useful for the researcher to comment on any biases, prejudices and orientations that could influence the interpretation. Moreover, Bogdan & Biklen (2007) bring to attention that in qualitative research it is not of importance to be a "clean slate", but rather to be more reflective and conscious of "who you are", which may significantly enrich the study. In other words, transparency of the data, the analyzing processes, reflections, and the interpretations ensure the quality of the study.

This particular research study started out with a great motivation to understand the phenomenon of energy saving promotion by energy companies in Finland. At first glance, such promotion seems controversial to the very nature of business, but with second thought different factors emerge that provide more insight into the issue (e.g. generating capacity, long-term thinking). In this regard, the uniqueness and the specificity of the situation allows a rich exploration and a certain bias towards "wanting it to be" as special and interesting as it seems at first glance (especially if one considers the potential implications for sustainable consumption promotion in the future). However, the awareness of personal orientations has helped to keep the interviews and further analysis as careful as possible in order to avoid steering the findings towards a desired direction. Moreover, the consumer survey conducted at the beginning of the research provided abundant food for thought, giving new unexpected dimensions to the research and motivating thoughts beyond the expected (e.g. the findings about the expectations for corporate energy industry actors vs. public actors with regard to providing information on conservation). In that sense, it is again worth emphasizing that the complementarity of the methods and the two-sided approach that was adopted greatly contributed to the progress and depth of the research. In fact, the pitfalls of the survey (e.g. unintended geographical bias) sensitized and informed the

qualitative phase, so that the opinions and perceptions expressed in the interviews would cover what remained unexplored in the quantitative phase.

The secondary criteria, as summarized by Whittemore et al. (2001), are explicitness, creativity, thoroughness, congruence, and sensitivity. The authors emphasize that according to the literature on qualitative research, these criteria are also important as well; although not all are directly connected with the primary criteria. In relation to this research study, some of the criteria such as *explicitness* (and partly *thoroughness*) have already been discussed. All of the processes and procedures have been made as explicit as possible in order to improve the authenticity of the research. When it comes to *thoroughness*, certain compromises were made with regard to direct quotes from the interviews – namely, the quotes are sometimes quite short (e.g. if compared to quotes in ethnographic studies), which may create the idea that they lack context. The compromise with quotes was made to create a better flowing text, with quotes nested in the analysis and argumentation, rather than shifting the attention to the quotes as self-explanatory central arguments. On the whole though, the quotes are not so brief that it could compromise the credibility of the argumentation and interpretations.

Sandelowski (1986) explains that *vividness* is about presenting the essence of the phenomenon without excessive detail that could take away the attention of the reader from the central issues. Thus, when reporting the results in this study, descriptive titles and sub-titles were used as a means to focus the attention of the reader on the main points, while still providing sufficient detail in the text to ensure credibility of the interpretations. Chapple & Rogers (1998) elaborates that *creativity* is usually reflected in the novelty of the methodological design in terms of answering the specific research questions. Even though the idea of applying mixed research methodology with sequential design (used in this research study) is not new, the novelty lies in the combination of applying mixed methods to support the two-sided approach adopted in the study to able to better address the phenomenon itself from different angles, rather than taking into account just one perspective. This research study does not and cannot aspire to cover the phenomenon from all the different angles (e.g. a governmental perspective is missing), but the two-sided approach and supporting mixed methods design still provided the possibility to explore the phenomenon in more breadth and depth than would have been possible with just one perspective. This is also relevant for the next criterion – *congruence* – which refers to the fit between research question and the chosen methods, data collection and analysis, and between the findings and their practical implications (Whittemore et al. 2001). As the pragmatist framework outlines, the methods of the research were chosen to best suit the purposes of the research and its research questions, i.e. mixed methods were deemed as the best solution considering the two-sided approach and the main research goal. Other procedures, such as data collection and analysis, were conducted in line with the sequential mixed methods research recommendations (Creswell 2003): the data were collected in phases, one following the other, the findings were

reported separately for each phase, while the analysis and interpretations were implemented using combined findings from both phases.

Last but not least, the criterion of *sensitivity* is about the human aspect of the research, how it is fine-tuned to the cultural and social contexts in which it is conducted, as well as about its value to the community where it is implemented (Altheide & Johnson 1994). Considering the fact that this research study deals with household energy consumption patterns, –everyday behavior, which is strongly influenced by social norms and culture – cultural sensitivity was deemed to be of utmost importance, especially since the research was not conducted in the researcher’s native country. Thus, cultural aspects of energy consumption (e.g. regular saunas; pools of light in internal lighting) were handled with attention, but did not turn out to reflect notably in the main results. On the other hand, the value of the conducted research for the community is rather substantial as it has concrete practical implications both for the corporate actors in energy industry, and for government, as well as suggestions for improvement of the communication process especially for current Finnish context. Even though the *generalizability* of this research study is limited because energy consumption is different from other types of consumption, its findings are valuable due to the breadth and depth of exploration of the the communication process, and to the challenges and implications it identified for the energy industry in Finland. In that connection, Lincoln (1995) observes that research should serve the community in which it was carried out rather than just serving the knowledge community alone. In addition, the value of the study can be further explored with reference to *transferability* of the results to other cultural contexts, as well as to similar consumption contexts (e.g. water). Finally, it is also important to reflect upon the exploration experience itself since it yielded unexpected results in the area of widely recognized yet tacit society-level problems (such as a poor understanding of the energy market system). Thus, the value and benefits of exploration projects with two-sided approaches deserve attention as a means to reveal similar types of underlying problems on the level of communities.

11.4.3 Contribution of the mixed research methodology to the study value

Even though some authors emphasize that using mixed research methodology is challenging due to the fact that evaluation of such research is problematic from the point of views of both quantitative and qualitative research (e.g. Bogdan & Biklen 2007), it is rewarding to consider how this methodology contributed to the value and quality of the research study presented here.

Exploring both consumer and corporate perspectives in one study is demanding, but the instruments of survey and in-depth interviews have facilitated this process. For instance, the survey instrument allowed the acquisition of data from a notable number of respondents among Finnish households in order to be able to generalize the findings to the Finnish population. Moreover, the results of the survey served as a starting point for selecting the target energy companies for interview. The in-depth interviews

with the energy company representatives, on the other hand, helped to explore corporate perceptions in this industry both in great depth, and with sufficient breadth, taking into consideration the differences between smaller and larger size companies, different foundation origin companies and different geographical areas of target influence. The energy industry in Finland is dominated by very few energy companies, and even though the names of the participating companies could not be revealed, the participants of this research were among the notable players of the industry.

11.5 Direction for future studies

The findings of the research study presented here suggest that studying (the promotion of) sustainable consumption using a dual producer-consumer perspective provides more insight into the issue, and allows a deeper-level prominent factors that influence consumption to be identified compared to those declared out loud. Thus, future research on sustainable consumption of goods and services, especially if meanings and perceptions of the participants are involved, could benefit from the dual perspective – allowing sustainable consumption as a process and the meanings attached to it to be understood, and the identification of the points of mismatches between consumer expectations/preferences and producer practices/strategies. Indeed, Rex (2008) points out that there is a gap in research about how companies interact with their customers, and how they collect the signals from the customers that could be used in the development of green products and responsible communication.

It seems that currently sustainable consumption is mainly perceived in terms of sustainable goods consumption, while the aspect of sustainable patterns of consumption remains unaddressed. Evidently, it is logical that companies promote their sustainable goods and/or services through marketing and corporate communication. However, it is unclear which actors should be concerned with the encouragement of sustainable patterns of consumption. Traditionally, such role is delegated to the government, but this assumption are being increasingly challenged in modern society. For instance, many food companies today engage in discussions about healthy eating – not just in terms of healthy products, but also in terms of healthy eating habits and portions. Other examples include recommendations made by detergent-producing companies about the frequency of washing and quantities of detergent used depending on the hardness of the water. One may easily notice that such extended communication is characteristic of products/services that contribute an essential part of people's daily lives. Thus, in the future it is important to study how the roles of the producers of such essential goods and services have been adapted and reshaped into something beyond straightforward producer-consumer relationships, and consider how these changes could be used to benefit the promotion of sustainable consumption. It is necessary to reconsider traditional reasoning in the distribution of roles in the market, and explore how

more sustainable relationships between producers and consumers could be stimulated and supported. As the results of the study presented here showed, in practice what might seem to be education for sustainable consumption, is often only one element towards sustainable consumption, and the other elements need to be contributed by other actors. In this context, conducting similar studies in the areas that are especially relevant for household consumption (e.g. water, basic food categories, home cleaning products, home appliances) could generate wider experience base for a comprehensive approach towards supporting households to become more sustainable.

In the area of household energy consumption specifically, the trend in the market has been towards offering increasingly convenience-oriented solutions. But, as was pointed out earlier, it is not clear what kind of solutions could both prove convenient and supportive of conservation-oriented behavior. One interesting direction for research could be the potential acceptance of Finnish consumers to re-discover traditional ways of maintaining light and warmth at home – as opposed to the modern concepts of even warmth and large pools of light.

Comparative studies from other countries (in particular, Nordic states) could offer more insight and experiences of the main practical recommendations identified in this study. Indeed, the interviews conducted for this research contain many comparisons with other Nordic countries, but since comparison was beyond the scope of this study, the data largely remained unexplored. Thus, comparative studies, e.g., the levels of background knowledge of the energy market system in other Nordic countries, as well as the process of implementation of smart meters and its effects on consumption could prove beneficial for development of relevant interventions in Finland.

Furthermore, the concept and principle of sufficiency still remain very much under-researched despite their importance in moving towards sustainable consumption as a whole, and taming the rebound effects in particular. In the study presented here sufficiency has been explored as an essential element of energy conservation in households. However, further research is needed to explore the meaning and importance of sufficiency in different areas of consumption: food, personal hygiene, care and maintenance of homes, entertainment, travel – to name just a few. Understanding the role and meaning of sufficiency in each area of consumption will help in the design of more accurately targeted interventions for changing household consumption towards sustainability.

REFERENCES

- Abrahamse, W., Steg, L., Vlek, Ch. & Rothengatter, T. 2005. A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology* 25: 273-291.
- Action plan for energy efficiency: realising the potential. 2007. European parliament: legislative observatory.
<http://www.europarl.europa.eu/oeil/FindByProcnum.do?lang=en&procnum=INI/2007/2106> . Accessed on 16/04/2007.
- Adams, C.A., Frost, G. 2003. The development of corporate web sites and implications for ethical, social and environmental reporting through these media. Research Report. Edinburgh: Edinburgh Institute of Chartered Accountants in Scotland.
- Aerts, W., Cormier, D. 2008. Media legitimacy and corporate environmental communication. *Accounting, Organization and Society* 34, 1-27.
- Ajzen, I. & Fishbein, M. 1980. Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- Alcott, B. 2008. The sufficiency strategy: would rich-world frugality lower environmental impact? *Ecological Economics* 64, 770-786.
- Altheide, D.L. & Johnson, J.M. 1994. Criteria for assessing interpretive validity in qualitative research. In Denzin, N.K., Lincoln, Y.S. (eds.). *Handbook of qualitative research*. Thousand Oaks, CA: SAGE, 485-499.
- Andreasen, A. 1994. Social marketing: its definition and domain. *Journal of Public Policy and Marketing* 13 (1), 108-114.
- Andreasen, A. 1997. From ghetto marketing to social marketing: bringing social relevance to mainstream marketing. *Journal of Public Policy and Marketing* 16 (1), 129-131.
- Andreasen, A. 2002. Marketing social marketing in the social change marketplace. *Journal of Public Policy and Marketing* 21 (1), 3-13.
- Andrews, K. 1971. *The concept of corporate strategy*. Homewood: Irwin.
- Ansoff, H. 1965. *Corporate strategy*. McGraw Hill: New York.
- Arola, H. 2007. Commentary: Vanhanen needlessly blames Finnish households. *Helsingin Sanomat*, 22.10.2007.
- Assael, H. 1998. *Consumer behavior and marketing action*. (6th ed.) Cincinnati, OH: South-Western College Publishing.
- Babbie, E. 2007. *The practice of social research*. (11th ed.) Belmont, CA: Thomson/Wadsworth.
- Bagozzi, R.P., Gopinath, M. & Nyer, P.U. 1999. The role of emotions in marketing. *Journal of the Academy of Marketing Science* 27 (2), 184-206.
- Banerjee, S.B. 2002. Corporate environmentalism. The construct and its measurement. *Journal of Business Research* 55, 177-191.
- Baudrillard, J. 1999. *The consumer society: myths and structures*. London: SAGE.

- Belz, F. 2005. Sustainability marketing: blueprint of a research agenda. Discussion paper No.1. Technische Universität München.
- Belz, F. & Peattie, K. 2009. Sustainability marketing: a global perspective. Hoboken, NJ: John Wiley and Sons.
- Benders, R., Kok, R., Moll, H., Wiersma, G. & Noorman, J. 2006. New approaches for household energy conservation - in search of personal household energy budgets and energy reduction options. *Energy Policy* 34 (18), 3612-3622.
- Bertoldi, P. & Anatasiu, B. 2006. Residential lighting consumption and saving potential in the enlarged EU. Paper for European Commission - DG Joint Research Centre. Institute for Environment and Sustainability.
- Birkigt, K. & Stadler, M.M. 1986. Corporate Identity - Grundlagen, Funktionen, Fallbeispiele (Verlag Moderne Industrie, Landsberg am Lech).
- Blumer, H. 1969. Symbolic interactionism: perspective and method. Englewood Cliffs: Prentice Hall.
- Bogdan, R.C. & Biklen, S.K. 2007. Qualitative research for education. (5th ed.) Boston, Mass.: Pearson A & B.
- Bonn, I. 2001. Developing strategic thinking as a core competency. *Management Decision* 39 (1), 63-70.
- de Bono, E. 1970. Lateral thinking: a textbook of creativity. London: Pelican Books.
- Bourdieu, P. 1984. Distinction - a social critique of the judgement of taste. London: Routledge & Kegan Paul.
- Bromley, D.B. 1993. Reputation, image and impression management. Chichester: Wiley.
- Brown, M. A. 2001. Market failures and barriers as a basis for clean energy policies. *Energy Policy* (29), 1197-1207.
- Campbell, D. 2004. A longitudinal and cross-sectional analysis of environmental disclosure in UK companies: a research note. *British Accounting Review* 36, 107-117.
- Carroll, A.B. 1979. A three-dimensional conceptual model of corporate performance. *Academy of Management Review* 4 (4), 497-505.
- Chandler, A. 1962. Strategy and structure. MIT Press: Cambridge.
- Chapple, A. & Rogers, A. 1998. Explicit guidelines for qualitative research: a step in the right direction, a defense of the "soft" option, or a form of sociological imperialism? *Family Practice* 15, 556-561.
- Charter, M. & Polonsky, M.J. (eds.). 1999. Greener marketing: a global perspective on greening marketing practice. Sheffield, UK: Greenleaf.
- Clarkson, M.B.E. 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review* 20 (1), 92-117.
- Coddington, W. 1993. Environmental marketing: positive strategies for reaching the green consumer. New York: McGraw-Hill.

- Connolly-Ahern, C. & Broadway, S. C. 2007. The importance of appearing competent: an analysis of corporate impression management strategies on the world wide web. *Public Relations Review* 33, 343-345.
- Cooper, S.M. 2003. Stakeholder communication and the Internet in UK electricity companies. *Managerial Auditing Journal* 18 (3), 232-243.
- Cornelissen, J. 2008. *Corporate communication: a guide to theory and practice*. (2nd ed.) London: SAGE.
- Cotte, J., Coulter, R. & Moore, M. 2005. Enhancing or disrupting guilt: the role of ad credibility and perceived manipulative intent. *Journal of Business Research* 58 (3), 361-368.
- Creswell, J.W. 2003. *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: SAGE Publications.
- Creswell, J.W. 2007. *Qualitative inquiry & research design: choosing among five approaches*. (2nd ed.) Thousand Oaks, CA: SAGE.
- Crotty, M. 1998. *The foundations of social research*. London: SAGE Publications.
- Csikszentmihalyi, M. 2000. The costs and benefits of consuming. *Journal of Consumer Research* 27, 267-272.
- Currall, S.C. & Towler, A.J. 2003. Research methods in management and organizational research: toward integration of qualitative and quantitative techniques. In Tashakkori, A. & Teddlie, Ch. (eds.). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: SAGE, 513-526.
- Dalton, J. & Croft, S. 2003. *Managing corporate reputation: the new currency*. London: Thorogood.
- Davies, M. 2007. *Doing a successful research project: using qualitative or quantitative methods*. New York: Palgrave Macmillan.
- Davis, J.J. 1993. Strategies for environmental advertising. *The journal of Consumer Marketing* 10 (2), 19-36.
- Davis, J.J. 1994. Consumer response to corporate environmental advertising. *Journal of Consumer Marketing* 11 (2), 25-37.
- Dawkins, J. 2004. Corporate responsibility: the communication challenge. *Journal of Communication Management* 9 (2), 108-119.
- Dean, T.J. & Brown R.L. 1995. Pollution regulation as a barrier to new firm entry: initial evidence and implications for future research. *Academy of Management Journal* 38 (February), 288-303.
- Desmedt, J., Vekemans, G. & Maes, D. 2009. Ensuring effectiveness of information to influence household behavior. *Journal of Cleaner Production* 17 (4), 455-462.
- Dowling, J. & Pfeiffer, R.J. 1975. Managing your corporate image. *Industrial Marketing Management* 15, 109-115.
- Dulleck, U. & Kaufmann, S. 2004. Do customer information programs reduce household electricity demand? The Irish program. *Energy Policy* 32 (8), 1025-1032.
- Durning, A. 1991. Limiting consumption. *The futurist*. July-August.

- Durning, A. 1992. How much is enough? The consumer society and the future of the Earth. New York: Norton.
- Dutton, J.E. & Dukerich, J.M. 1991. Keeping an eye on the mirror: image and identity in organizational adaptation. *Academy of Management Journal* 34 (3), 517-554.
- Dyllick, T. & Hockerts, K. 2002. Beyond the business case for corporate sustainability. *Business Strategy and the Environment* 11 (2), 130-141.
- Elsbach, K.D. & Kramer, R.M. 1996. "Members" responses to organizational identity threats: encountering and countering the business week rankings. *Administrative Science Quarterly* 41 (3), 442-476.
- Enerdata/FhG-ISI. 2003. Energy efficiency in the European Union 1990-2001, SAVE-ODYSSEE. Project on energy efficiency indicators.
- Energy&Enviro Finland magazine. 2007. Finns have changed their attitudes towards climate change. Ministry of Trade and Industry.
http://www.energy-enviro.fi/index.php?PAGE=623&NODE_ID=623&LANG=1 . Accessed on 04/03/2009.
- Energy Market Authority (EMA). 2007. Annual report to the European Commission.
<http://www.energiamarkkinavirasto.fi/select.asp?gid=221&languageid=246> . Accessed on 07/02/2009.
- Energy Market Authority (EMA). Mission statement.
<http://www.energiamarkkinavirasto.fi> . Accessed on 07/02/2009.
- Esrock, S.L. & Leichty, G.B. 1998. Social responsibility and corporate web pages: self-presentation or agenda-setting? *Public Relations Review* 24 (3), 305-319.
- Europe's Energy Portal.
<http://www.energy.eu> . Accessed on 26/03/2010.
- European Commission Climate Action: energy for a changing world.
http://ec.europa.eu/climateaction/eu_action/index_en.htm . Accessed on 07/02/2009.
- European Environment Agency (EEA). Energy Indicators 2007.
http://themes.eea.europa.eu/Sectors_and_activities/energy/indicators/EN18%2C2008.11 . Accessed on 14/02/2009.
- European Partners for the Environment 1995-96. Sourcebook.
<http://www.epe.be/workbooks/sourcebook/foreword.html> . Accessed on 05/01/2009.
- Finland's climate change and energy strategy 2008. Ministry of employment and economy.
<http://www.tem.fi/index.phtml?l=en&s=2658> . Accessed on 11/03/2009.
- Fisk, G. 1974. Marketing and the ecological crisis. New York, NY: Harper & Row Publishers.
- Flick, U. 2009. An introduction to qualitative research. (4th ed.) London: SAGE.
- Fodness, D. 2005. Rethinking strategic marketing: achieving breakthrough results. *Journal of Business Strategy* 26 (3), 20-34.

- Freeman, R. 1984. Strategic management: a stakeholder approach. Massachusetts: Pitman.
- Frey, B. & Jegen, R. 2001. Motivation crowding theory: a survey of empirical evidence. *Journal of Economic Surveys* 15 (5), 589-611.
- Giddens, A. 1984. The constitution of society. Berkeley: University of California Press.
- Gladwin, T.N., Kennelly, J.J. & Krause, T.S. 1995. Shifting paradigms for sustainable development: implications for management theory and research. *Academy of Management Review* 20 (October), 874-907.
- Goldblatt, D. 2005. Sustainable energy consumption and society: personal, technological or social change? Springer.
- Graetz, F. 2002. Strategic thinking versus strategic planning: towards understanding the complementarities. *Management Decision* 40 (5), 456-462.
- Greene, D., Kahn, J. & Gibson, R. 1999. Fuel economy rebound effects for US household vehicles. *Energy* 20 (3), 1-29.
- Greening, L., Green, D. & Difiglio, C. 2000. Energy efficiency and consumption - the rebound effect - a survey. *Energy Policy* 28, 389-401.
- Gröppel-Klein, A. 2008. Presentation in EDEN Seminar on Consumer Behavior. Brussels.
- Guagnano, G., Stern, P. & Dietz, T. 1995. Influences on attitude-behavior relationships. A natural experiment with curbside recycling. *Environment and Behavior* 27 (5), 699-718.
- Haas, R. & Biermayr, P. 2000. The rebound effect for space heating - empirical evidence from Austria. *Energy Policy* 28 (6-7), 403-410.
- Haddock, J. 2005. Consumer influence on Internet-based corporate communication of environmental activities: the UK food sector. *British Food Journal* 107 (10), 792-805.
- Hamel, G. & Prahalad, C.K. 1994. *Competing for the future*. Boston, MA: Harvard Business School Press.
- Heiskanen, E. & Lovio, R. 2010. User-producer interaction in housing energy innovations: energy innovation as a communication challenge. *Journal of Industrial Ecology*, 14 (1), 91-102.
- Henning, A. 2006. Can qualitative methods support the development of more flexible and energy saving thermal comfort? International conference on comfort and energy use in buildings - getting them right. Network for comfort and energy use in buildings. Windsor, UK.
- Henriques, I. & Sadorsky, P. 1999. The relationship between environmental commitment and managerial perceptions of stakeholder importance. *Academy of Management Journal* 42 (1), 87-99.
- Herring, H. 2006. Energy efficiency - a critical review. *Energy* 31, 10-20.
- Hertwich, E. 2005. Consumption and the rebound effect: an industrial ecology perspective. *Journal of Industrial Ecology* 9 (1-2), 85-98.
- Helynen, S., Kärkkäinen, S., Sipilä, K. & McKeough, P. 2007. Efficiency in energy production, transfer and distribution. In Viinikainen, S., Ikonen, E.,

- Soimakallio, S., Lind, I. (ed.board). Energy use: visions and technology opportunities in Finland. Helsinki: Edita Prima, 55-93.
- Hirschman, E. 1991. Secular morality and the dark side of consumer behavior: or how semiotics saved my life. *Advances in Consumer Research* 18, 1-4.
- Hofer, Ch. & Schendel, D. 1978. *Strategy formulation: analytical concepts*. West Publishing Company: New York.
- Hoffman, A.J. 2000. *Competitive environmental strategy: a guide to the changing business landscape*. Washington, D.C.: Island Press.
- Hofstetter, P., Madjar, M. & Ozawa, T. 2006. Happiness and sustainable consumption. Psychological and physical rebound effects at work in a tool for sustainable design. *International Journal of LCA* 11 (special issue 1), 105-115.
- Hooghiemstra, R. 2000. Corporate communication and impression management – new perspectives why companies engage in corporate social reporting. *Journal of Business Ethics* 27, 55-68.
- Huber, J. 1998. Towards industrial ecology: sustainable development as a Concept of ecological modernization. International workshop on “Ecological modernization”, University of Helsinki.
- Hunt, C.B. & Auster E.R. 1990. Proactive environmental management: avoiding the toxic trap. *Sloan Management Review* 2, 7-18.
- Insch, A. 2008. Online communication of corporate environmental citizenship: a study of New Zealand’s electricity and gas retailers. *Journal of Marketing Communications* 14 (2), 139-153.
- Jackson, T. 2004. Motivating sustainable consumption: a review of evidence on consumer behavior and behavioral change. British Academy. A report to the sustainable development research network.
- Jackson, T. 2005. Live better by consuming less? Is there a “double dividend” in sustainable consumption? *Journal of Industrial Ecology* 9 (1-2), 19-36.
- Johnson, B. & Turner, L. 2003. Data collection strategies in mixed methods research. In Tashakkori, A. & Teddlie, Ch. (eds.). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: SAGE, 297-319.
- Keinonen, J. 2008. Energy in Finland. Energy workshop in Varenna, Italy: Energy perspectives in Europe. European Physical Society.
- Khazzoom, J.D. 1986. An econometric model integrating conservation in the estimation of the residential demand for electricity. Greenwich, CT: JAI Press.
- Kiljunen, P. 2008. Finnish energy attitudes 2008. Research report, Yhdyskuntatutkimus.
http://www.sci.fi/~yhdys/eas_08/english/eas-etied_08.htm . Accessed on 12/04/2009.
- Kinney, T., Taylor, J. & Ahmed, S. 1974. Ecologically concerned consumers: who are they? *Journal of Marketing* 38, 20-24.

- Kollmuss, A. & Agyeman, J. 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research* 8 (3), 239-258.
- Koponen, P. 2005. Current demand response and metering activities and research projects in Finland. Demand response workshop. VTT Technical research centre of Finland, Helsinki.
- Koponen, P. 2009. Smart metering situation in Finland. European smart metering alliance & European Commission joint research centre's workshop on smart metering. Gazzada Schianno - Varese, Italy.
- Kotler, Ph. & Levy, S. 1971. Demarketing, yes, demarketing. *Harvard Business Review* 49 (6), 74-80.
- Kotler, Ph., Zaltman, G. 1971. Social marketing: an approach to planned social change. *Social Marketing Quarterly* 35, 3-12.
- Kotler, Ph. 1997. *Marketing management: analysis, planning, implementation and control*. (9th ed.) Upper Saddle River, NJ: Prentice Hall International.
- Kotler, P. & Armstrong, G. 2004. *Principles of marketing*. (10th ed.) Upper Saddle River, NJ: Pearson/Prentice Hall.
- Kärnä, J., Hansen, E. & Juslin, H. 2003. Social responsibility in environmental marketing planning. *European journal of marketing* 37, (5/6), 848-871.
- Levett, R., Christie, I., Jacobs, M. & Therivel, R. 2003. A better choice of choice: quality of life, consumption and economic growth. London: Fabian Society Report.
- Liedtka, J. 1998. Strategic thinking: can it be taught? *Long Range Planning* 31 (1), 120-129.
- Lincoln, Y.S. & Guba, E.G. 1985. *Naturalistic inquiry*. London: SAGE.
- Lincoln, Y.S. 1995. Emerging criteria for quality in qualitative research and interpretive research. *Qualitative Inquiry* 3, 275-289.
- Linden, A-L., Carlsson-Kanyama, A. & Eriksson, Bj. 2006. Efficient and inefficient aspects of residential energy behavior: what are the policy instruments for change? *Energy Policy* 34, 1918-1927.
- Lorek, S. 2009. *Debunking weak sustainable consumption: towards strong sustainable consumption governance*. University of Helsinki. Doctoral dissertation.
- Lutzenhiser, L. 2002. Marketing household energy conservation: the message and the reality. In Dietz, T. & Stern, P. (eds.) *New tools for environmental protection: education, information, and voluntary measures*. Washington, DC, USA: National Academies Press, 49-65.
- Max-Neef, M. 1991. *Human scale development. Conception, application and further reflections*. New York: The Apex Press.
- McCalley, L. & Midden, C. 2002. Energy conservation through product-integrated feedback: the roles of goal-setting and social orientation. *Journal of Economic Psychology* 23 (5), 589-603.
- McDonald, S. & Oates, C. 2006. Sustainability: consumer perceptions and marketing strategies. *Business Strategy and the Environment* 15 (3), 157-170.

- Menon, A. & Menon, A. 1997. Enviropreneurial marketing strategy: the emergence of corporate environmentalism as market strategy. *Journal of Marketing* 61 (1), 51-67.
- Meyer, A. 2001. What's in it for the customers? Successfully marketing green clothes. *Business Strategy and the Environment* 10, 317-330.
- Michaelis, L. 2003. The role of business in sustainable consumption. *Journal of Cleaner Production* 11, 915-921.
- Michaelis, L. & Lorek, S. 2004. Consumption and the environment in Europe: trends and futures. Environmental project no.904. Report for Danish Environmental Protection Agency.
- Mintzberg, H. 1987. The strategy concept I: five Ps for strategy. *California Management Review* (Fall), 11-24.
- Mintzberg, H. 1994. *The rise and fall of strategic planning*. Prentice Hall International: Hertfordshire.
- Mitchell, R.K., Agle, B.R. & Wood, D. 1997. Toward a theory of stakeholder identification and salience: defining principles of who and what really counts. *Academy of Management Review* 22 (4), 853-886.
- Mohr, L., Eroglu, D. & Ellen, P.S. 1998. The development and testing of a measure of skepticism toward environmental claims in marketers' communication. *Journal of Consumer Affairs* 32, 30-55.
- Moisander, J. & Valtonen, A. 2006. *Qualitative marketing research: a cultural approach*. London: SAGE.
- Molina-Murillo, S. & Smith, T.M. 2009. Exploring the use and impact of LCA-based information in corporate communications. *International Journal of Life Cycle Assessment* 14, 189-194.
- Moore, J. 1993. Predators and prey: a new ecology of competition. *Harvard Business Review* May/June 76, 75-86.
- Morsing, M. 1999. The media boomerang: the media's role in changing identity by changing image. *Corporate Reputation Review* 2 (2), 116-135.
- Motiva 2007. Specialist in Energy and Material Efficiency. <http://www.motiva.fi>. Accessed on 15/04/2009.
- MURE findings (Mesures d'Utilisation Rationnelle de l'Energie). http://www.odyssee-indicators.org/publications/country_profiles_PDF/fin.pdf. Accessed on 03/05/2009.
- Neuman, W.L. 1994. *Social research methods: qualitative and quantitative approaches*. Allyn and Bacon: Needham Heights, MA.
- Newhouse, N. 1991. Implications of attitude and behavior research for environmental conservation. *The Journal of Environmental Education* 22 (1), 26-32.
- Norgaard, K.M. 2006. "People Want to Protect Themselves a Little Bit": Emotions, Denial, and Social Movement Nonparticipation. *Sociological Inquiry* 76 (3), 372-396.
- Ockwell, D., Whitmarsh, L. & O'Neill, S. 2009. Reorienting climate change communication for effective mitigation: forcing people to be green or fostering grass-root engagement? *Science Communication* 30 (3), 305-327.

- OECD. 2002. Towards sustainable household consumption? Trends and policies in OECD countries. Paris.
- Onkila, T. 2009. Environmental rhetoric in Finnish business. Environmental values and stakeholder relations in the corporate argumentation of acceptable environmental management. University of Jyväskylä. Doctoral dissertation.
- Oswald, A. 1997. Happiness and economic performance. *The Economic Journal* 107, pp. 1815-1831.
- Ottman, J.A. 1998. Green marketing. Opportunity for innovation. (2nd ed.) Lincolnwood, IL: NTC Business Books.
- Panorama of Energy 2009. Eurostat publications.
- Patten, D.M. 2002. The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society* 27, 763-773.
- Patton, M.Q. 1990. Qualitative evaluation and research methods. (2nd ed.) Newbury Park, CA: SAGE.
- Peattie, K. 1995. Environmental marketing management. Meeting the green challenge. Pitman Publishing: London.
- Peattie, K. & Crane, A. 2005. Green marketing: legend, myth, farce or prophesy? *Qualitative Market Research* 8 (4), 357-370.
- Pesonen, H. 2003. Challenges for integrating environmental sustainability issues into business school curriculum: a case study from the University of Jyväskylä, Finland. *Journal of Management Education* 27 (2), 158-171.
- Porter, M. 1998. On competition. Harvard Business School Publishing: Boston, MA.
- Prakash, A. 2002. Green marketing, public policy and managerial strategies. *Business Strategy and the Environment* 11, 285-297.
- Princen, T. 1999. Consumption and environment: some conceptual issues. *Ecological Economics* 31, 347-363.
- Princen, T. 2003. Principles for sustainability: from cooperation and efficiency to sufficiency. *Global Environmental Politics* 3 (1), 33-50.
- Princen, T. 2005. The logic of sufficiency. Cambridge, MA: MIT Press.
- Pulver, S. 2007. Making sense of corporate environmentalism - an environmental contestation approach to analyzing the causes and consequences of the climate change policy split in the oil industry. *Organization & Environment* 20 (1), 44-83.
- Reinhardt, F. 2000. Down to Earth. Applying business principles to environmental management. Boston, MA: Harvard business school press.
- Rex, E. & Baumann, H. 2007. Beyond ecolabels: what green marketing can learn from conventional marketing. *Journal of Cleaner Production* 15, 567-576.
- Rex, E. 2008. Marketing for life cycle thinking. Chalmers University of Technology. Göteborg, Sweden. Doctoral dissertation.
- Riel, C.B.M. van. 1995. Corporate communication. New York, NY: Prentice Hall.
- Roome, N. 1992. Developing environmental management strategies. *Business Strategy and the Environment* 1, 11-24.

- Røpke, I. 1999. The dynamics of willingness to consume. *Ecological Economics* 28 (3), 399-420.
- Rudin, A. 1999. How improved efficiency harms the environment. <http://home.earthlink.net/~andrewrudin/article.html> . Accessed on 06/03/2008.
- Sachs, W. 2002. Closing remarks. In Dömling, M. (ed.). *Sustainability and justice: a political North-South dialogue*. World summit papers of the Heinrich Böll Foundation, No. 13. Republic of South Africa: Heinrich Böll Foundation.
- Salmela, S. & Varho, V. 2006. Consumers in the green electricity market in Finland. *Energy Policy* 34, 3669-3683.
- Sandelowski, M. 1986. The problem of rigor in qualitative research. *Advances in Nursing Science* 8, 27-37.
- Sanne, C. 2002. Willing consumers or locked-in? Policies for a sustainable consumption. *Ecological Economics* 42, 273-287.
- Sapsford, R. 2007. *Survey research*. (2nd ed.) London: SAGE.
- Sayre, Sh. 2001. *Qualitative methods for marketplace research*. Thousand Oaks: SAGE.
- Schaefer, A. & Crane, A. 2005. Addressing sustainability and consumption. *Journal of Macromarketing* 25, (1), 76-92.
- Schaltegger, S., Burritt, R. & Petersen, H. 2003. *An introduction to corporate environmental management: striving for sustainability*. Sheffield, UK: Greenleaf Publishing.
- Schendel, D.E. & Hofer, C.W. (eds.). 1979. *Strategic management: a new view of business policy and planning*. Boston, MA: Little, Brown.
- Schlenker, B.R. 1980. *Impression management: the self-concept, social identity and interpersonal relations*. Monterey: Brooks/Cole.
- Schultz, D. & Kitchen, Ph. 2000. *Communicating globally: an integrated marketing approach*. Chicago: NTC Business Books.
- Schwartz, Sh. 1977. Normative influences on altruism. In Berkowitz, L. (ed.) *Advances in experimental social psychology*, vol. 10. New York: Academic Press, 221-279.
- SECCO. Sustainable Economy Collection Company. <http://www.seccoshop.com> . Accessed on 21/06/2009.
- Seligman, C. & Darley, J. 1977. Feedback as a means of decreasing residential energy consumption. *Journal of Applied Psychology* 62, 363-368.
- Sharma, S. & Vredenburg, H. 1998. Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal* 19, 729-753.
- Sharma, S., Pablo, A. & Vredenburg, H. 1999. Corporate environmental responsiveness strategies. The importance of issue interpretation and organizational context. *The Journal of Applied Behavioral Science* 35 (1), 87-108.
- Sharp, L. 2001. Positive response action: the ultimate goal of website communication. *Journal of Communication Management* 6 (1), 41-52.

- Shove, E. 2003. *Comfort, cleanliness and convenience: the social organization of normality*. Oxford: Berg Publishers.
- Shrivastava, P. 1995. Ecocentric management for a risk society. *Academy of Management Review* 20 (January), 118-137.
- Soimakallio, S. & Manninen, J. 2007. Energy efficiency and the Finnish energy system. In Viinikainen, S., Ikonen, E., Soimakallio, S. & Lind, I. (ed.board). *Energy use: visions and technology opportunities in Finland*. Helsinki: Edita, VTT, 13-54.
- Southerton, D. 2001. Ordinary and distinctive kitchens; or a kitchen is a kitchen. In Gronow, J. & Warde, A. (Eds.) *Ordinary consumption*. London: Routledge.
- Southerton, D, Warde, A. & Hand, M. 2004. The limited autonomy of the consumer: implications for sustainable consumption. In Southerton, D., Chappells, H. & Vliet, B.V. (eds.). *Sustainable consumption: the implications of changing infrastructures of provision*. Cheltenham, UK: Edward Edgar Publishing, 32-48.
- Staats, H., Wit, A. & Midden, C. 1996. Communicating the greenhouse effect to the public: evaluation of a mass media campaign from a social dilemma perspective. *Journal of Environmental Management* 46 (2), 189-203.
- Statistics Finland 2007.
<http://www.stat.fi> Accessed on 19/02/2009.
- Steger, U. 1988. *Umweltmanagement*. Wiesbaden, Germany: Gabler.
- Stern, P. 2000. Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues* 56 (3), 407-424.
- Summerton, J. 2004. The new "energy divide": politics, social equity and sustainable consumption in reformed infrastructures. In Southerton, D., Chappells, H. & Vliet, B.V. (eds.) *Sustainable consumption: the implications of changing infrastructures of provision*. Cheltenham, UK: Edward Edgar Publishing, 49-64.
- Tashakkori, A. & Teddlie, C. 1998. *Mixed methodology: combining qualitative and quantitative approaches*. Thousand Oaks, CA: SAGE.
- Tashakkori, A. & Teddlie, Ch. 2003. Major issues and controversies in the use of mixed methods in social and behavioral research. In Tashakkori, A. & Teddlie, Ch. (eds.) *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: SAGE, 3-50.
- Tennbakk, B., Rydén, B. & Sköldbäck, H. 2006. The energy policies in the Nordic countries. In *Ten perspectives on Nordic energy*. Final report for the first phase of the Nordic Energy Perspectives project.
<http://nordicenergyperspectives.org/boksep06.asp>. Accessed on 07/03/2009.
- Throne-Holst, H., Strandbakken, P. & Stø, E. 2008. Identification of households' barriers to energy saving solutions. *Management of Environmental Quality: an International Journal* 19 (1), 54-66.
- Thøgersen, J. 2006. Norms for environmentally responsible behavior: an extended taxonomy. *Journal of Environmental Psychology* 26, 247-261.

- Thøgersen, J. 2008. Presentation at the Sustainable Consumption course. Prague, Czech republic.
- Trygg, P. 2009. Overview of Finland – aspects of smart metering and smart grids. *Metering International Issue 4*, 16.
- Tuomaala, P. & Pihala, H. 2007. Buildings. In Viinikainen, S., Ikonen, E., Soimakallio, S. & Lind, I. (ed.board). *Energy use: visions and technology opportunities in Finland*. Helsinki: Edita, VTT, 153-178.
- Veblen, T. 1934. *The theory of the leisure class: an economic study of institutions*. New York, NY: Modern Library.
- Verplanken, B. & Wood, W. 2006. Interventions to break and create consumer habits. *Journal of Public Policy and Marketing* 25 (1), 90-103.
- Walker, I. & Wirl, F. 1993. Irreversible price-induced efficiency improvements: theory and empirical application to road transportation. *The Energy Journal* 14 (4), 183-205.
- Wartick, S.L. & Cochran, P.L. 1985. The evolution of the corporate social performance model. *Academy of Management Review* 10 (4), 758-769.
- Washright Campaign.
<http://www.washright.com> Accessed on 19/01/2009.
- Welford, R. & Gouldson, A. 1993. *Environmental management & business strategy*. London: Pitman Publishing.
- Whittemore, R., Chase, S.K. & Mandle, C.L. 2001. Validity in qualitative research. *Qualitative Health Research* 11, 522-537.
- Winett, R.A., Love, S.Q. & Kidd, C. 1982-1983. The effectiveness of an energy specialist and extension agents in promoting summer energy conservation by home visits. *Journal of Environmental Systems* 12 (1), 61-70.
- Wolcott, H.F. 1999. *Ethnography: a way of seeing*. Walnut Creek, CA: AltaMira.
- World Energy Council. <http://www.worldenergy.org> . Accessed on 03/02/2010.
- World Wide Fund for Nature/ WWF. 2008. Smart metering catalysing consumer energy savings and improved market efficiency.
http://www.wwf.fi/wwf/www/uploads/pdf/smart_metering_pilot_projects.pdf . Accessed on 24/03/2010.
- Young, W. & Figge, F. 2004. Sufficiency – a corporate responsibility within sustainable business? *Proceedings of the 12th International Conference of Greening of Industry Network*, Hong Kong.
- Zablah, A.R., Bellenger, D.N. & Johnston, W.J. 2004. An evaluation of divergent perspectives on customer relationship management: towards a common understanding of an emerging phenomenon. *Industrial Marketing Management* 33 (6), 475-489.
- Zacarias-Farrah, A. & Geyer-Allely, E. 2003. Household consumption patterns in OECD countries: trends and figures. *Journal of Cleaner Production* 11, 819-827.
- Ölander, F. & Thøgersen, J. 1995. Understanding of consumer behavior as a prerequisite for environmental protection. *Journal of Consumer Policy* 18, 345-385.

APPENDIX 1

OFFICIAL TITLES OF THE PARTICIPATING INTERVIEWEES

1. Vice-president, Homes and Small Enterprises Segment
2. Head of Marketing and Customer Communication

3. Marketing manager for Nordic markets
4. Environmental and Emission Trading Manager

5. Communication Manager
6. Head of Marketing

APPENDIX 2

LIST OF QUESTIONS UTILIZED FOR INITIATING AND DIRECTING DISCUSSION (IF NOT FLOWING) IN SEMI-STRUCTURED INTERVIEWS

1. Tell me a little bit about how you first started with energy issues, about your career.
2. What do you think of the energy situation in Finland?
3. How do you see the role of your company in the energy situation in Finland?
4. Do you think there have been some changes in energy industry during last 5-10 years? What has changed? And how?
5. Could you please describe how you understand communication?
 - a. What is mainly the content? What kinds of issues are included in communication? What is the purpose of communication?
6. What is the focus of marketing in your company?
 - a. *If dialogue comes up* - what are some of the ways to build/maintain dialogue?
 - b. *If customer relationship comes up* - how is it being built?
7. What are some of the commonly used channels in marketing?
8. What kind of marketing campaigns have been done? Examples?
9. How do people respond to these campaigns? How is it monitored?
10. What do you think consumers expect from energy companies?
11. What kinds of challenges do your company and energy companies in general face nowadays? How do you deal with these challenges?
12. Could you describe for me how do you understand sustainable energy use? (If difficulties: responsible energy use?)

APPENDIX 3

LIST OF SUPPORTING PRINTED MATERIALS PROVIDED BY PARTICIPATING ENERGY COMPANIES

The following materials are examples of materials containing energy saving advice. Unless stated otherwise - they were prepared, printed and sent to household customers by energy companies participating in the research study.

1. Quarterly customer magazine (6 copies from years 2005-2007);
2. Material for children:
 - a. Brochure "How small ones can save electricity and energy" published by participating energy company in co-operation with Motiva and Adato;
 - b. Brochure on energy saving for children "Hey, everything is working!" ("Hei, kaikki toimii!") published by Motiva Lasten Keskus, and sponsored for distribution in local elementary schools by one of the participating energy companies;
3. Information letter to the customers (concerning heating pricing) / Asiakastiedote (kaukolämmön hinta muuttuu);
4. Leaflet with guidelines on how to read and understand household's heating bill / Kaukolämpölaskun lukuohje;
5. General information for electricity users / Yleistä tietoa sähkökäyttäjille
6. Informational letter about increased sales of green electricity in Finland (of one participating company);
7. "This is how you can read your electricity bill" (informational leaflet)/ "Näin luet sähkölaskuasi";
8. Leaflets (4) informing about contests with energy saving and climate change themes for customers (e.g. "Send your energy saving advice and win...");
9. "Stop climate change!" leaflet / "Stop ilmastonmuutokselle!";
10. "Test your household's energy consumption" leaflet / "Tee pieni energiatesti";

APPENDIX 4**QUESTIONS DESIGNED FOR SURVEY OF HOUSEHOLDS**

1. Year of birth
2. Sex:
 - a. Female
 - b. Male
 - c. Both are present
3. Current residence county
4. Education
5. What is your primary occupation?
6. What is the number of people in the household:
 - a. 1 b. 2 c. 3 d. 4 or more
7. Do you live in a:
 - a. House;
 - b. Apartment;
 - c. Row-house apartment;
8. It is:
 - a. privately owned
 - b. rent agreement
9. Which company is your electricity provider?
 - a. Fortum;
 - b. Vattenfäll;
 - c. Other _____
 - d. Don't know
10. How did you choose your electricity provider?
 - a. It was recommended by a relative/friend;
 - b. It was recommended by the housing company;
 - c. I decided based on previous experiences;
 - d. I decided based on the most advertised, well-known options;
 - e. It was a decision based on a combination of different factors;
 - f. I did not choose the provider (e.g. it is included in the rent agreement, etc.)
11. What was MAIN criterion/criteria in your electricity provider selection?
(you may circle up to 3 options)
 - a. I did not have to choose the electricity provider;
 - b. Price
 - c. Reliability
 - d. Environmental reputation of the company
 - e. Other

12. Are you satisfied with your current electricity provider?
 - a. Yes
 - b. No
 - c. Partly
 - d. Don't know/ Not sure
13. Do you pay separately for electricity and heating?
 - a. Yes
 - b. No, it's the same bill
 - c. My electricity and heating payments are part of the rent
 - d. Don't know
14. What is the most likely description of your habits concerning lighting?
 - a. I always turn off all the lights when I leave the house;
 - b. Usually, I always turn off the lights, but sometimes it happens that I leave some on by accident;
 - c. I don't pay much attention to the lighting
15. How would you describe your behavior in connection to room temperature?
 - a. I regularly monitor room temperature
 - b. I sometimes check the room temperature
 - c. I don't really pay attention to the room temperature
16. Have you ever visited the website of your electricity provider (for any reason)?
 - a. Yes, once
 - b. Yes, I visited it a few times
 - c. No, never
17. What is the main source for electricity production of your energy provider?
 - a. coal
 - b. natural gas
 - c. nuclear power
 - d. hydropower
 - e. bio-fuel (e.g. pellets)
 - f. turf
 - g. other _____
 - h. don't know
18. Which appliance in your household do you consider to be the most energy consuming?
 - a. Kitchen cooker/stove
 - b. Refrigerator
 - c. TV
 - d. Vacuum cleaner
 - e. Sauna stove
 - f. Washing machine
 - g. Water boiler (for heating)
 - h. Other _____

19. Please list the brand name of the following appliances used in your household. If you own several items of the same appliance of different brands just pick one. If you do not own some of the listed below appliances, then do not write anything in the space provided.
- Electric cooking stove _____
 - Refrigerator _____
 - Separate freezer _____
 - TV-set _____
 - Washing machine _____
 - Air conditioner _____
 - Water heater _____
 - Sauna stove _____
20. How do you monitor your energy consumption? (you may circle up to 3 options)
- I do not really monitor my energy consumption;
 - Through energy meter installed at my household
 - Through monthly energy bills
 - Through internet service maintained by my energy provider
21. Do you perform any actions to reduce your electricity consumption, save energy, use it more efficiently?
- No
 - Yes (Please give some short explanations on what kind of actions, what are your energy saving practices, or just some examples)
- _____
- _____
- _____
- _____
- _____
22. Would you be interested to learn how much money in real terms you could save monthly through applying different practices for energy consumption reduction?
- Yes, that would be interesting
 - No, I'm not that interested
23. What typically serves as a source of information for you on how to reduce your energy consumption? (you may circle up to 3 options)
- I do not pay attention to this type of information
 - So far I haven't gotten this information from anywhere
 - Tips and advices from your energy provider
 - Instructions provided in the handbooks for appliances you bought
 - Energy saving campaigns on TV, radio, newspapers
 - Information provided by local environmental center
 - Information provided by non-governmental environmental organizations, like Greenpeace, etc.
 - Independent internet search

i. Other _____

24. What do you personally prefer as a means to learn about opportunities on energy consumption reduction? (you may circle up to 3 options)

- a. I'm not interested in information on these opportunities
- b. Compact instructions in a leaflet
- c. Information in electronic form (e-mails and internet sites)
- d. Information presented on TV and radio
- e. Information and tips in newspapers
- f. Information that comes together with purchasing of some household appliance in a handbook with instructions
- g. Immediate tips, images and stickers on physical package of various products, such as household appliances.
- h. Other (please explain in as much detail as you wish):

25. Who do you expect to be responsible to deliver information to consumers on how to reduce their energy consumption? (you may circle up to 3 options)

- a. Manufacturers of household appliances;
- b. The sellers of the appliances;
- c. Energy provider companies
- d. Local environmental centers
- e. Environmental organizations
- f. Industrial association of household appliances' manufacturers
- g. Industrial association of energy providers
- h. Education institutions (schools and universities)
- i. Other _____

26. Would you like to receive more information in the most convenient way for you on the opportunities of how to reduce your energy consumption?

- a. Yes, that would be interesting
- b. No, I'm content with the present situation
- c. Not sure

APPENDIX 5

QUESTIONNAIRE DISTRIBUTED AMONG HOUSEHOLDS

Jyväskylän yliopisto, taloustieteiden tiedekunta
Haastattelulomake

Tammikuu 2006

Haastattelija _____

E-mail _____

Haastateltavan koodi _____

Tavoitteenamme on selvittää sähkönkulutukseen liittyviä tottumuksia. Ympyröikää kussakin kysymyksessä vain yksi kirjain vaihtoehtona ellei toisin ole mainittu. Voitte halutessanne lisätä ylimääräisiä kommentteja kysymyksiin liittyen. Vastaukset käsitellään luottamuksellisina.

- 1) Syntymävuosi _____
- 2) Sukupuoli a) nainen b) mies c) mies ja nainen vastaavat yhdessä
- 3) Asuinpaikkakunta _____
- 4) Koulutus _____
- 5) Ammatti _____
- 6) Kotitaloudessa asuvien määrä: 1 henkilö 2 henkilöä 3 henkilöä 4 tai useampia
- 7) Asumismuoto:
 - a. Omakotitalo
 - b. Kerrostalo
 - c. Rivitalo
- 8) Asunto on a) oma b) vuokrattu
- 9) Sähkötoimittaja:
 - a. Fortum
 - b. Vattenfall
 - c. Muu, mikä? _____
 - d. En tiedä
- 10) Kuinka valitsit sähkötoimittajasi?
 - a. Ystävä/ sukulainen suositteli
 - b. Asunto-osakeyhtiö/ vuokranvälittäjä suositteli
 - c. Aiempien kokemusten perusteella
 - d. Eniten mainostettujen, hyvin tunnettujen vaihtoehtojen joukosta
 - e. Eri tekijät yhdessä vaikuttivat
 - f. En valinnut toimittajaa (esim. sisältyy vuokraan)

- 11) Mikä oli TÄRKEIN syy sähköntoimittajan valinnassa? (voit valita useammankin vaihtoehdon)
- En valinnut itse sähköntoimittajaa
 - Hinta
 - Luotettavuus
 - Ympäristömaine
 - Muu, mikä? _____
- 12) Oletko tyytyväinen nykyiseen sähköntoimittajaasi?
- Kyllä
 - En
 - Osittain
 - En tiedä/ en ole varma
- 13) Maksatko erikseen sähköstä ja lämmityksestä?
- Kyllä
 - En, ne ovat samassa laskussa
 - Sähkö ja lämmitys sisältyvät vuokraan
 - En tiedä
- 14) Miten kuvailisit valojen käyttöäsi?
- Sammutan aina valot, kun poistun talosta/ huoneistosta
 - Tavallisesti sammutan aina valot, mutta joskus unohdan ne päälle vahingossa
 - En juuri kiinnitä huomiota valojen käyttöön
- 15) Miten kuvailisit lämmitystapojasi?
- Tarkkailen säännöllisesti huoneiston lämpötilaa
 - Tarkkailen huoneiston lämpötilaa satunnaisesti
 - En juuri kiinnitä huomiota huoneiston lämpötilaan
- 16) Oletko koskaan käynyt sähköntoimittajasi internet-sivuilla?
- Kyllä, kerran
 - Kyllä, muutaman kerran
 - En koskaan
- 17) Mikä on sähköntoimittajasi tuottaman sähköän energian lähde?
- Kivihiili
 - Maakaasu
 - Ydinvoima
 - Vesivoima
 - Biopolttoaineet
 - Turve
 - Muu, mikä _____
 - En tiedä
- 18) Mikä sähkölaite kotitaloudessasi kuluttaa mielestäsi eniten energiaa?
- Hellauuni
 - Jääkaappi
 - TV
 - Pölynimuri
 - Sähkökiuas

- f. Pesukone
 - g. Lämminvesiboileri
 - h. Muu, mikä? _____
- 19) Kotitaloudessasi käytettyjen sähkölaitteiden merkit? (jos omistat useampia samoja tuotteita, valitse yksi merkki)
- a. Hellauuni _____
 - b. Jääkaappi _____
 - c. Pakastin _____
 - d. TV _____
 - e. Pesukone _____
 - f. Ilmastointilaitte _____
 - g. Vesiboileri _____
 - h. Sähkökiuas _____
- 20) Miten tarkkailet sähkönkulutustasi? (voit valita 1-3 vaihtoehtoa)
- a. En tarkkaile sähkönkulutustani
 - b. Sähkömittarin avulla
 - c. Kuukausittaisen sähkölaskun avulla
 - d. Sähköntoimittajan tarjoaman internet-palvelun avulla
 - e. Jokin muu tapa, mikä? _____
- 21) Pyritkö vähentämään sähkönkulutustasi, säästämään energiaa ja käyttämään sitä tehokkaammin?
- a. Ei
 - b. Kyllä (Selitä lyhyesti, miten ja millaisia toimenpiteitä tai vain esimerkkejä)
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- 22) Olisitko kiinnostunut tietämään kuinka paljon rahaa voisit säästää erilaisilla energiankulutuksen vähentämismenetelmillä?
- a. Kyllä
 - b. En
- 23) Mistä tavallisesti saat tietoa siitä, kuinka vähentää energiankulutustasi? (voit valita 1-3 vaihtoehtoa)
- a. En kiinnitä huomiota tällaiseen tietoon
 - b. Tähän saakka en ole saanut tällaista tietoa mistään
 - c. Ohjeita ja neuvoja energiantoimittajaltasi
 - d. Sähkölaitteiden käyttöohjekirjoista/ pakkausmerkinnöistä
 - e. Energiansäästökampanjoista TV:ssä, radiossa ja sanomalehdissä
 - f. Paikalliselta ympäristökeskukselta/ viranomaiselta

- g. Kuluttajajärjestöiltä
- h. Ympäristöjärjestöiltä (esim.Greenpeace)
- i. Internet-haulla
- j. Muualta, mistä? _____

24) Mitkä mielestäsi ovat parhaita keinoja oppia vähentämään energiankulutustasi? (voit valita 1-3 vaihtoehtoa)

- a. En ole kiinnostunut tällaisesta tiedosta
- b. Ytimekkäät esitteet
- c. Elektroniset kanavat (sähköposti, internet)
- d. TV ja radio
- e. Sanomalehdet
- f. Sähkölaitteiden käyttöohjeet
- g. Neuvot, kuvat ja tarrat tuotteiden pakkauksissa
- h. Muu, mikä (voitte selittää yksityiskohtaisesti halutessanne)

25) Kuka on mielestäsi vastuussa tiedonjakamisesta kuluttajille sähkökulutuksen vähentämiseen liittyen? (voit valita 1-3 vaihtoehtoa)

- a. Sähkölaitteiden valmistajat
- b. Sähkölaitteiden myyjät/ kauppa
- c. Energiatoimittajayritykset
- d. Paikalliset ympäristökeskukset/ viranomaiset
- e. Ympäristöjärjestöt
- f. Sähkölaitteiden valmistajien toimialajärjestöt
- g. Energiatoimittajien toimialajärjestöt
- h. Koulut ja yliopistot
- i. Muu, mikä?

26) Haluaisitko saada lisää tietoa sinulle sopivalla tavalla mahdollisuuksista vähentää energiankulutustasi?

- a. Kyllä
- b. Ei, olen tyytyväinen nykyiseen tilanteeseen
- c. En ole varma

- 1 LAINE, JUHANI, Toimialareseptin ja yritysparadigman muutos sekä sen vaikutus strategiseen muutokseen. Laadullinen ja historiallinen case-tutkimus perheyriksen siirtymisestä monialayhtymän osaksi. - Change in industry recipe and company paradigm and its impact on strategic change. A qualitative and longitudinal case study on a one-family owned company which moved into the context of a multi-business company. 252 p. Summary 12 p. 2000.
- 2 WAHLGRÉN, ASTA, Mastery and slavery. Triangulatory views on owner-managers' managerial work. - Isäntä ja renki. Trianguloituja näkökulmia omistajajohtajien johtamistyöhön. 138 p. Yhteenveto 4 p. 2000.
- 3 SEPPÄ, MARKO, Strategy logic of the venture capitalist. Understanding venture capitalism - the businesses within - by exploring linkages between ownership and strategy of venture capital companies, over time, in America and Europe. 321 p. Yhteenveto 9 p. 2000.
- 4 PEKKALA, SARI, Regional convergence and migration in Finland, 1960-95. 121 p. Yhteenveto 1 p. 2000.
- 5 KORHONEN, JOUNI, Industrial ecosystem. Using the material and energy flow model of an ecosystem in an industrial system. - Teollinen ekosysteemi - Ekosysteemin materiaali- ja energiavirtamallin soveltaminen teollisessa systeemissä. 131 p. Tiivistelmä 1 p. 2000.
- 6 KARVONEN, MINNA-MAARI, An industry in transition. Environmental significance of strategic reaction and proaction mechanisms of the Finnish pulp and paper industry. 146 p. Yhteenveto 2 p. 2000.
- 7 RITSILÄ, JARI, Studies on the spatial concentration of human capital. 140 p. Yhteenveto 1 p. 2001.
- 8 LITTUNEN, HANNU, The birth and success of new firms in a changing environment. 261 p. Yhteenveto 2 p. 2001.
- 9 MATTILA, MINNA, Essays on customers in the dawn of interactive banking. - Asiakkaat interaktiivisen pankkiliiketoiminnan aamunkoitossa. 154 p. Yhteenveto 3 p. 2001.
- 10 HYRSKY, KIMMO, Reflections on the advent of a more enterprising culture in Finland: an exploratory study. 244 p. Tiivistelmä 4 p. 2001.
- 11 KUJALA, JOHANNA, Liiketoiminnan moraalista etsimässä. Suomalaisen teollisuusjohtajien sidosryhmänäkemykset ja moraalinen päätöksenteko. - Searching for business morality. Finnish industrial managers' stakeholder perceptions and moral decision-making. 217 p. Summary 4 p. 2001.
- 12 LÄMSÄ, ANNA-MAIJA, Organizational downsizing and the Finnish manager from an ethical perspective. - Organisaation kutistaminen ja suomalainen liikkeenjohto eettisestä näkökulmasta tarkasteltuna 61 p. (115 p.) Summary 5 p. 2001.
- 13 GRONOW, TITO, Material flow models in environmental policy planning. Case: pulp and paper industry. - Materiaalivirtamallit ympäristöpolitiikan ja -toimintatapojen suunnittelussa. Case: Massa- ja paperiteollisuus. 103 p. (144 p.) Yhteenveto 1 p. 2001.
- 14 MOILANEN, RAILI, A learning organization: machine or human? - Oppiva organisaatio: kone vai oppivien ihmisten yhteisö? 55 p. (162 p.) Yhteenveto 7 p. 2001.
- 15 HOKKANEN, SIMO, Innovatiivisen oppimisyhteisön profiili. Ammattikorkeakoulujen tekniikan ja liikenteen koulutusalan näkökulmasta tarkasteltuna. - The factors contributing to the profile of an innovative learning community. 242 p. Summary 10 p. 2001.
- 16 PAAJANEN, PEKKA, Yrittäjyyskasvattaja. Ammattikorkeakoulun hallinnon ja kaupan alan opettajien näkemykset itsestään ja työstään yrittäjyyskasvattajana. - An entrepreneurship educator. Teachers' views of themselves and their work as an entrepreneurship educator at the polytechnic level, in the field of business and administration. 276 p. Summary 9 p. 2001.
- 17 MANGELOJA, ESA, Nordic stock market integration. - Pohjoismaisten osakemarkkinoiden integraatio. 164 p. Yhteenveto 2 p. 2001.
- 18 KARJALUOTO, HEIKKI, Electronic banking in Finland. Consumer beliefs, attitudes, intentions, and behaviors. - Elektroninen pankkitoiminta Suomessa. Kuluttajien uskomukset, asenteet, aikomukset ja käyttäytyminen. 195 p. Yhteenveto 3 p. 2002.
- 19 VIRTANEN, AILA, Laskentatoimi ja moraalit. Laskenta-ammattilaisten käsityksiä hyvästä kirjanpitoavasta, hyväksyttävästä verosuunnittelusta ja hyvästä tilintarkastavasta. 184 p. Summary 4 p. 2002.
- 20 TENHUNEN, MARJA-LIISA, The professional growth of an accounting agency entrepreneur. - Tilitoimistoyrittäjän ammatillinen kasvu. 121 p. (359) Yhteenveto 7 p. 2002.
- 21 ALANKO, JUHA, Siipien alla ilmaa. Liikenneilmailun lentotoiminnan johtaminen liikennelentäjien miehistönkäytön tehokkuudella ja kustannuksilla mitattu. Empiirisenä kohteena Finnair Oy 1980- ja 1990-luvuilla. - Air under wings. 240 p. Summary 2 p. 2002.
- 22 NIEMELÄ, TARJA, Inter-Firm Co-operation Capability. - A Processual Empirical Study on Networking Family Firms. 204 p. Yhteenveto 1 p. 2003.
- 23 SAJASALO, PASI, Strategies in transition - the internationalization of Finnish forest industry companies. 223 p. Yhteenveto 8 p. 2003.
- 24 NEVANPERÄ, ERKKI, Yrittäjyys Suupohjan opiskelijanuorten ajattelussa. Tutkimus Suupohjan seudun nuorisoasteen opiskelijoiden yrittäjyysnäkemysistä sekä yrittäjyysopetuksen opetussuunnitelman kehittämissuunnitelmista. - How the young residents in Suupohja region see entrepreneurship: study of students' opinions

- about entrepreneurship in juvenile degree schools and the efforts in developing the curriculum of entrepreneurship education. 210 p. Summary 2 p. 2003.
- 25 JOUTSEN-ONNELA, MERJA, Turvallisuuutta ja sopusointua vai jännitystä ja valtaa. Tutkimus sairaanhoitaja- ja terveydenhoitajaopiskelijoiden yrittäjyys- ja muista arvoista. - Security and harmony or thrills power. 229 p. Summary 3 p. 2003.
- 26 RAJOITTE, ALAIN, Knowledge and decisions in environmental contexts. A case study of the pulp and paper industry. 190 p. 2003.
- 27 HAAPANEN, MIKA, Studies on the Determinants of Migration and the Spatial Concentration of Labour. 127 p. Yhteenveto 1 p. 2003.
- 28 SUORANTA, MARI, Adoption of mobile banking in Finland. - Mobiilipankkipalveluiden adoptio Suomessa. 79 p. (167 p.) Yhteenveto 3 p. 2003.
- 29 MATTILA, ANSSI, Understanding seamless mobile service interface between customer and technology: An empirical study 62 p. (170 p.) Yhteenveto 3 p. 2003.
- 30 HALTTUNEN, JUSSI, Teollisten perheyriyten kasvudynamiikan systeemiteoreettinen tarkastelu. - The growth dynamics of industrial family-owned firms - a systems theory approach. 302 p. Summary 8 p. 2004.
- 31 MADUREIRA, RICARDO, The role of personal contacts of foreign subsidiary managers in the coordination of industrial multinationals: the case of Finnish subsidiaries in Portugal. 186 p. - Ulkomaisten tytäryhtiöiden johtajien henkilökohtaisten kontaktien rooli koordinoinnissa monikansallisissa teollisuusyrityksissä. Case: Suomalaiset tytäryhtiöt Portugalissa. Yhteenveto 1 p. 2004.
- 32 KOIVUNEN, MAURI, Osaamisperustaisen kilpailukyvyn ja yrittäjyyden edistäminen. Tutkimustapauksena Raahan tietotekniikan muun- tokoulutusohjelma insinööreille. - Enhancing competence-based competitiveness and entrepreneurship. Research case: Professional degree upgrading in information technology for engineers in Raaha. 216 p. Summary 3 p. 2004.
- 33 KANSIKAS, JUHA, Myyjiä, tuotekehittäjiä ja tuotejohtajia. Tuotepäälliköiden tehtävä- rakenteen heijastuminen tuotekehitys- projektissa sisäiseen yrittäjyyteen ja intuitiiviseen päätöksentekotyylin kuuluviin tekijöihin. - Sales people, product developers and product champions - product managers' responsibilities and job roles in a product development project and their reflection to intrapreneurship and intuitive decision making style. 258 p. Summary 6 p. 2004.
- 34 MUNNUKKA, JUHA, Perception-based pricing strategies for mobile services in customer marketing context. 65 p. (151 p.) Yhteenveto 1 p. 2004.
- 35 PALOVIITA, ARI, Matrix Sustainability: Applying input-output analysis to environmental and economic sustainability indicators. Case: Finnish forest sector. - Matriisikestävyys: Panos-tuotosanalyysin soveltaminen ekologisen ja taloudellisen kestävyuden indikaattoreihin. Case: Suomen metsäsektori. 216 p. Yhteenveto 2 p. 2004.
- 36 HANZELKOVA, ALENA, Re-establishing traditional Czech family businesses. A multiple case study on the present challenges. 306 p. Tiivistelmä 1 p. 2004.
- 37 TUUNANEN, MIKA, Essays on franchising in Finland - Empirical findings on franchisors and franchisees, and their relationships. 143 p. (252 p.) 2005.
- 38 AHLFORS, ULLA, Successful interactive business: Integration of strategy and IT. - Menestyksellinen vuorovaikutteinen e-liiketoiminta: Strategian ja informaatioteknologian integrointia. 353 p. Yhteenveto 2 p. 2005.
- 39 NIEMI, LIISA, The father, the son and the refreshed spirit. Strategic renewal after family business succession in the context of the textile, clothing, leather and footwear industry. - Isä, poika ja yritys yhä hengissä. Perheyriyksen strateginen uudistuminen sukupolvenvaihdoksen jälkeen - tapaus- tutkimus tekstiili-, vaatetus, nahka- ja kenkä- teollisuudessa. 219 p. Summary 2 p. 2005.
- 40 LASSILA, HILKKA, Matkailutilan sukupolven- vaihdos talonpoikaisten arvojen ohjaamana prosessina. - Traditional values affecting succession in farm tourism businesses. 206 p. Summary 12 p. 2005.
- 41 TURJANMAA, PIRKKO, Laadun oppiminen pienissä yrityksissä. Mallin konstruointi ja kehittäminen. - Learning of quality in small companies. Construction and Development of a model. 204 p. Summary 6 p. 2005.
- 42 YLÄOUTINEN, SAMI, Development and functioning of fiscal frameworks in the Central and Eastern European countries. - Finassipolitiikan kehikkojen kehittyminen ja toiminta Keski- ja Itä-Euroopan maissa. 220 p. Yhteenveto 4 p. 2005.
- 43 TÖRMÄKANGAS, RAILI, Perheyriittäjyyden arjen kulttuuri. Kolmen sukupolven sahatoimintaa. - The everyday culture of entrepreneurship over three generations in a saw mill. 203 p. Summary 3 p. 2005.
- 44 TUNKKARI-ESKELINEN, MINNA, Mentored to feel free. Exploring family business next generation members' experiences of non-family mentoring. - Mentoroinnilla vapauden- tunteeseen: Kartoittava tutkimus perheyriyten seuraajasukupolven mentoroinnista saamistaan kokemuksista. 233 p. Yhteenveto 3 p. 2005.

- 45 LINTULA, PAAVO, Maakuntalehden toimittajan toimintatila teknis-rationaalisessa ajassa. - The action scope of a journalist in a regional newspaper under pressure of a technical-rational discourse. 321 p. Summary 3 p. 2005.
- 46 HEIKKILÄ, MAURI, Minäkäsitys, itsetunto ja elämänhallinnan tunne sisäisen yrittäjyyden determinanteina. - The self-concept, the self-esteem and the sense of life control as the determinants of the intrapreneurship. 209 p. Summary 5p. 2006.
- 47 SYRJÄLÄ, JARI, Valoon piirrettyjä kuvia. Tarinoita ja tulkintoja sähköalan murroksesta hyvinvoinnin ja henkilöstöstrategian näkökulmasta. - Pictures in Light. Narratives and interpretations of changes in the energy sector from the point of view of welfare and personnel strategy. 333 p. 2006.
- 48 NIEMELÄ, MARGIT, Pitkäikäisten perheyritysten arvoprofiili. Pitkäikäisten perheyritysten arvojen ja jatkuvuuden kuvaus Bronfenbrennerin ekologisen teorian avulla. - The value profile of long-lived family firms. The description of the values and the continuity of long-lived family firms as seen through Bronfenbrenner's ecological theory. 187 p. Summary 2 p. 2006.
- 49 KAKKONEN, MARJA-LIISA, Intuition and entrepreneurs. A Phenomenological Study of managerial intuition of Finnish family entrepreneurs. 176 p. Tiivistelmä 2 p. 2006.
- 50 LAHTONEN, JUUKA, Matching heterogeneous job seekers and vacancies. Empirical studies using Finnish data. 110. p. Yhteenveto 2 p. 2006.
- 51 OLLIKAINEN, VIRVE, Gender Differences in Unemployment in Finland. 157. p. Yhteenveto 1 p. 2006.
- 52 PURONAHO, KARI, Liikuntaseurojen lasten ja nuorten liikunnan markkinointi - Tutkimus lasten ja nuorten liikunnan tuotantoprosessista, resursseista ja kustannuksista. - Sport marketing by sport clubs for children and youngsters - Exploring the production process, resources and costs of children's and youngsters' sport activities. 236 p. Summary 3 p. 2006.
- 53 POIKKIMÄKI, SANNA, Look closer to see further. Exploring definitions, goals and activities of environmental life cycle management 153. p. Yhteenveto 1 p. 2006.
- 54 SILJANEN, TUULA, Narratives of expatriates in the Middle East. Adaptation, identity and learning in non-profit organizations. 250 p. Tiivistelmä 2p. 2007.
- 55 WESTERHOLM, HELY, Tutkimusmatka pienyrityksen työvalmiuksien ytimeen. Kirjallisuuteen ja DACUM-analyysiin perustuva kartoitus. - A journey into the core of the occupational competence and attitudes of small business entrepreneurs. 221 p. Summary 5 p. 2007.
- 56 HYNINEN, SANNA-MARI, Matching in local labour markets: Empirical studies from Finland. 100 p. Summary 2 p. 2007.
- 57 TOHMO, TIMO, Regional economic structures in Finland: Analyses of location and regional economic impact. 53 p. (273 p.) Tiivistelmä 2 p. 2007.
- 58 HIIRONEN, MARJA-LIISA, Hoivayritykset kotona asuvien ikääntyvien toimintakyvyn tukena. Ikääntyvien, kuntapäätäjien ja hoivayrittäjien näkökulma. - Care enterprises and the functionality of elderly people living at home. The perspectives of aging people, municipal decision-makers and care entrepreneurs. 153 p. Summary 2 p. 2007.
- 59 ARHIO, KAIJA, Luova laatu ja arvoinnovaatiot oppivan verkoston tuottamina. Tapaus-tutkimus rakennuspuutuoteolosuhteiden verkostosta. - Creative quality and value innovations created by a learning network. Case-study within a building components manufacturing network. 191 p. Summary 10 p. 2007.
- 60 HEIKKINEN, EILA, Yrittäjän persoonallisuus ja sen yhteys yrityksen kasvuun BigFive-teorian mukaan tarkasteltuna. - An entrepreneur's personality and its impact on the firm's growth: An analysis through the Big Five Theory. 139 p. Summary 5 p. 2007.
- 61 ELO-PÄRSSINEN, KRISTA, Arvot ja yhteiskunta-vastuullinen toiminta suurissa suomalaisissa perheyrityksissä. Omistajan näkökulma. - Values and corporate social performance in large Finnish family firms. Owners view. 188 p. Summary 2 p. 2007.
- 62 NYSSÖLÄ, HANNU, Omistajaohjaus, sisäinen yrittäjyys ja tuloksellisuus ammattikorkeakouluissa. - Corporate governance, intrapreneurship and effectiveness in the Universities of Applied Sciences. 361 p. Summary 9 p. 2008.
- 63 KAUKO-VALLI, SOFIA, Subjective well-being as an individually constructed phenomenon. 179 p. Summary 1 p. 2008.
- 64 SINTONEN, TEPPO, Diversiteetti ja narratiivisuus. Tutkielmia diskursiivisesta organisaatiotodellisuudesta. - Diversity and Narrative. Discursive approaches to organizational reality. 59 p (123 p.) Summary 2 p. 2008.
- 65 KOOSKORA, MARI, Understanding corporate moral development in the context of rapid and radical changes. The case of Estonia. 105 p. (198 p.) Tiivistelmä 9 p. 2008.
- 66 TAKANEN-KÖRPERICH, PIIRJO, Sama koulutus - eri urat. Tutkimus Mainzin yliopistossa soveltaa kielitiedettä vuosina 1965-2001 opiskelleiden suomalaisten urakehityksestä palkkatyöhön, freelancereiksi ja yrittäjiksi. - Same Education - Different Careers. The study of the Finnish nationals who have studied applied linguistics in the University of Mainz, Germany, during the years 1965-

- 2001, and their working development as employees, freelancers and entrepreneurs. 203 p. Summary 2 p. Zusammenfassung 3 p. 2008.
- 67 RANKINEN, ARJA, Kulttuurinen osaaminen Etelä- ja Itä-Kiinassa toimittaessa. Illustraationa eräs tulkinta suomalaisjohtajien Kiina-kokemuksista. - Cultural competence when operating in Southern and Eastern China. An interpretation of some Finnish business managers' experiences in China as an illustration. 294 p. Summary 4 p. 2008.
- 68 KOTAJA, SARI MAARIT SUSANNA, Keskipohjalaisyriyksen toimintaympäristönsä ja sen hyvinvoinnin rakentajina. Diskurssianalyttinen näkökulma. - Central Ostrobothnian SMEs as constructors of their operating environment and regional welfare. Discourse analytic research. 209 p. Summary 3 p. 2008.
- 69 TEITTINEN, HENRI, Näkymätön ERP. Taloudellisen toiminnanohjauksen rakentuminen. - Invisible ERP. Construction of enterprise resource planning. 206 p. Summary 2 p. 2008.
- 70 LUOTO, JANI, Bayesian applications in dynamic econometric models. - Bayesilaisia sovelluksia dynaamisissa ekonometrisissa malleissa. 148 p. Tiivistelmä 3 p. 2009.
- 71 TOURUNEN, KALEVI, Perheyriykset kansantalouden resurssina. Keski- ja suurten yritysten omistajuus, toiminnan laajuus ja kannattavuus Suomessa 2000–2005. - Family businesses as an economic resource. Ownership, scale and profitability of middle-sized and large-sized businesses in Finland in 2000–2005. 174 p. Summary 3 p. 2009.
- 72 NIEMELÄ-NYRHINEN, JENNI, Factors affecting acceptance of mobile content services among mature consumers. - Mobiilien sisältöpalveluiden omaksumiseen vaikuttavat tekijät ikääntyvien kuluttajien keskuudessa. 148 p. Yhteenveto 3 p. 2009.
- 73 LAURONEN, MIRJA, Yrittäjämäinen elinkeinopolitiikka. Kolmevaiheinen, diskurssianalyttinen tarkastelu kunnan elinkeinopolitiikan roolista ja tehtävistä. - Entrepreneurial economic policy. A three-phase discourse-analytical study of the roles and functions of municipal economic policy. 193 p. Summary 4 p. 2009.
- 74 KOSKINEN, MARKETTA, Omistajuus erilaisten yrittäjien käsityksinä ja tulkintoina. Fenomenografinen tutkimus. - Ownership as understood and interpreted by various entrepreneur types. A phenomenographic study. 227 p. Summary 2 p. 2009.
- 75 FRANTSI, TAPANI, Ikääntyvä johtaja tienhaaras. Ikääntyvien johtajien kertomukset johtajuuden ja identiteetin rakentajana. - Stories as identity construction of ageing leaders at the career crossroads. 247 p. 2009.
- 76 ONKILA, TIINA, Environmental rhetoric in Finnish business. Environmental values and stakeholder relations in the corporate argumentation of acceptable environmental management. 200 p. Yhteenveto 1 p. 2009.
- 77 HARTIKAINEN, PERTTI, "Tätä peliä ei hävitä" Abduktiivinen tutkimus Halton-konsernin oppimishistoriasta 1968–2006. - "We won't lose this game." Abductive research on learning history of Halton Group 1968–2006. 190 p. Summary 4 p. 2009.
- 78 KERTTULA, KARI, Valta ja muutos. Ylimmän johdon tulkinta vallan ilmenemisestä organisaation strategisessa muutosprosessissa. - Power and change. Interpretation of the top management about the power arising from a strategic change process: qualitative case study within a forest industry organization. 206 p. Summary 3 p. 2009.
- 79 ANTTONEN, RITVA, »Manne takaraivossa». Ennakkoluulot ja syrjintä suomalaisten romaniyrittäjien kokemana. Fenomenografinen tutkimus. - Experiences of prejudice and discrimination of Roma entrepreneurs in Finland. A phenomenographic study. 199 p. Summary 3 p. 2009.
- 80 SALVADOR, PABLO F., Labour market dynamics in the Nordic countries according to the chain reaction theory. 148 p. 2009.
- 81 PELLINEN, ANTTI, Sijoitusrahastoasiakkaiden taloudellinen kyvykkyys ja tulevat lisäsijoituspäätökset. - Financial capability of mutual fund clients and additional investment decisions. 196 p. 2009.
- 82 KALLIOMAA, SAMI, Sisäinen markkinointi johtamisena. Tapaustutkimus konepajateollisuuden projektiorganisaatiosta. - Internal marketing as management – case study: project organisation within the engineering industry. 232 p. Summary 8 p. 2009.
- 83 VON BONSDORFF, MONIKA E., Intentions of early retirement and continuing to work among middle-aged and older employees. - Keski-ikäisten ja ikääntyneiden työntekijöiden eläke- ja työssä jatkamisaikheet. 86 p. (194 p.) Yhteenveto 3 p. 2009.
- 84 LAAKKONEN, HELINÄ, Essays on the asymmetric news effects on exchange rate volatility. - Esseitä makrotalouden uutisten vaikutuksista valuuttakurssien volatilitettiin. 124 p. Yhteenveto 4 p. 2009.
- 85 LAPPALAINEN, MINNA, Entrepreneurial orientation at the level of dyad relationships in supply chains and networks. 138 p. Yhteenveto 3 p. 2009.
- 86 SILTAOJA, MARJO, Discarding the mirror - The importance of intangible social resources to responsibility in business in a Finnish context. - Peiliä hylkäämässä. Aineettomien sosiaalisten resurssien merkitys liiketoiminnan vastuille. 204 p. Yhteenveto 3 p. 2010.

- 87 OVASKAINEN, MARKO, Qualification requirements of SMEs in Internet-based electronic commerce. - Findings from Finland. - Pk-yritysten kvalifikaatiovaatimukset Internet-pohjaisessa elektronisessa kaupankäynnissä – löydöksiä Suomesta. 273 p. Yhteenveto 6 p. 2010.
- 88 KUIVANIEMI, LENI, Evaluation and reasoning in the entrepreneurial opportunity process: Narratives from sex industry entrepreneurs. - Arviointi ja päättely liiketoimintamahdollisuuksien tunnistamisprosessissa. Yrittäjien tarinoita seksiteollisuudesta. 216 p. 2010.
- 89 STORHAMMAR, ESA, Toimintaympäristö ja PK-yritykset. Havaintoja yritysten toimintaan vaikuttavista tekijöistä. - Local environment and the small and medium sized enterprises. Observations of the factors which affect the operations of firms. 188 p. Summary 3 p. 2010.
- 90 KOSKINEN, HANNU, Studies on money and labour market dynamics and goods market imperfections. - Tutkimuksia raha- ja työmarkkinadynamiikasta ja hyödyke-markkinoiden epätäydellisyyksistä. 106 p. Yhteenveto 2 p. 2010.
- 91 HÄMÄLÄINEN, ILKKA, Suunnittelijat innovaatio-toiminnan ja kasvun ytimessä. - Architects and consulting engineers in the core of innovation and growth. 270 p. Summary 2 p. 2010.
- 92 KETOLA, HANNU U., Tulokkaasta tuottavaksi asiantuntijaksi. Perehdyttäminen kehittämisen välineenä eräissä suomalaisissa tietöalan yrityksissä. - Transformation from a recruit (newcomer) into a productive expert. The job orientation process as a tool for personnel development in Finnish ICT companies. 212 p. 2010.
- 93 RAUTIAINEN, ANTTI, Conflicting legitimations and pressures in performance measurement adoption, use and change in Finnish municipalities. - Ristiriitaiset legitimaatiot ja paineet suoritustutkimuksen käyttöönotossa, käytössä ja muutoksessa Suomen kunnissa. 52 p. (109 p.) Summary 4p. 2010.
- 94 JAUHIAINEN, SIGNE, Studies on human capital flows and spatial labour markets. - Tutkimuksia inhimillisen pääoman virroista ja alueellisista työmarkkinoista Suomessa. 98 p. Summary 1p. 2010.
- 95 KORSUNOVA, ANGELINA, Encouraging energy conservation with 'no hard feelings': a two-part analysis of communication between energy companies and Finnish households. 213 p. 2010.