

WP 6: Focus Groups

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Knowledge for business

1. INTRODUCTION: THE AIMS OF WP-6	5
2. METHODOLOGY	5
3. BRAINSTORMING EXERCISE	6
3.1 BUY AND THROW AWAY.....	6
3.2 EGOISTIC ELDERS ON ONE HAND, AND CONSCIOUS ENERGY SAVING ADVOCATES ON THE OTHER	7
3.3 OTHER SUGGESTIONS FOR MAKING A MORE SUSTAINABLE SOCIETY:	7
3.3.1 <i>Incentives and knowledge about them</i>	7
3.3.2 <i>Role Models</i>	8
3.3.3 <i>New and stricter building regulations</i>	8
3.3.4 <i>Two fold solution – Technical and Behavioural.....</i>	8
4. THEME A: DOMESTIC ENERGY USE	9
4.1 KEY ISSUES THAT DETERMINE ENERGY USE:	9
4.1.1 <i>Cheap and clean electricity - not a major topic of concern.....</i>	9
4.1.2 <i>The personal Cost-Gain dominance.....</i>	10
4.2 CURRENT ROUTINES AND HABITS:	11
4.2.1 <i>Young versus Old.....</i>	11
4.2.2 <i>Temperature adjustments.....</i>	11
4.3 CHANGING BEHAVIOUR – MOTIVATION, INCENTIVES AND BARRIERS:	12
4.3.1 <i>Lack of knowledge – Need for numbers.....</i>	12
4.3.2 <i>The motivation to act is undermined.....</i>	13
4.3.3 <i>Current infrastructure in domiciles.....</i>	13
4.4 CHANGES IN USE OF ENERGY USE AT HOME:	14
4.4.1 <i>The window of opportunity - Household changes</i>	14
4.5 CHANGES - INVESTMENTS AND IMPROVEMENT:	15
4.5.1 <i>Concrete actions and investments.....</i>	15
4.6.1 <i>Attitudes towards regulation</i>	16
4.6.2 <i>Energy labelling of houses.....</i>	16
4.7 SUGGESTIONS FROM THE PARTICIPANTS:	17
4.7.1 <i>A Virtual House.....</i>	17
4.7.2 <i>Expert visitor.....</i>	17
4.8 SECTION CONCLUSION	17
5. THEME B: HOUSEHOLD APPLIANCES.....	18
5.1 KEY ISSUES TAKEN INTO ACCOUNT WHEN BUYING/USING NEW APPLIANCES:	18
5.1.1 <i>Focus on purchase price – not lifetime costs</i>	18
5.1.2 <i>Show me the numbers again.....</i>	19
5.1.4 <i>Energy labelling of appliances</i>	20
5.1.5 <i>Other criteria when buying appliances</i>	20
5.2 KNOWLEDGE AND CURRENT ROUTINES AND HABITS ON USE OF APPLIANCES:	21
5.2.1 <i>(Mis)conceptions about energy consumption</i>	21
5.2.3 <i>Switching off versus Stand by.....</i>	22
5.2.3 <i>Perceptions about appliance energy consumption.....</i>	22
5.2.4 <i>Reluctant Replacing – If it works, don’t change it...and if I do, it is to save money.....</i>	23
5.5 SUGGESTIONS:.....	24
5.5.1 <i>Taxing the energy wasters?.....</i>	24

5.5.2 “Energy-meter”	24
5.6 SECTION CONCLUSION	24
6. THEME C: TRAVEL AND FUEL CONSUMPTION	25
6.1 KEY ISSUES THAT DETERMINE CAR USE:	25
6.1.1. THE DAILY CONCERNS AND PRACTICALITIES DECIDE	25
6.1.2 <i>Explanations for not using public transport</i>	26
6.1.3 FURTHER EXPLANATIONS FOR PREFERRED USE OF THE CAR:	27
6.1.4 ATTITUDE TOWARDS ELECTRICAL CARS.....	27
6.2 CHANGING BEHAVIOUR – MOTIVATION AND REGULATION.....	28
6.2.2 <i>Questioning the credibility of information</i>	28
6.2.3 REGULATION	29
6.3 AIR TRAVEL AND HOLIDAYS	30
6.3.1 DO CLIMATE QUOTAS WORK?	30
6.3.2 TRAINS VS. PLANES	31
6.4 SUGGESTION FROM THE PARTICIPANTS:	31
6.5 SECTION CONCLUSION	31
7. THEME D: WIDER CONTEXTUAL ISSUES	32
7.1 PERSONAL ECONOMIC GAIN MOST IMPORTANT	32
7.2 CONSUMERS NEED TO BE CONVINCED	32
7.3 CLEAN HYDRO POWER	33
7.4 NORWAY, AN ENVIRONMENTAL BEACON?	33
7.5 RESPONSIBILITY FOR CURRENT ENVIRONMENTAL PROBLEMS	33
7.6 SUBSIDIES	34
7.7 COMMENTS ON SURVEY RESULTS.....	34
8. DIFFERENCES BASED ON THE VARIABLES - AGE, GENDER AND STABILITY IN TERMS OF DOMICILE:.....	34
8.1 AGE DIFFERENCES:	34
8.1.2 <i>More environmentally aware elders?</i>	35
8.1.3 <i>Environmental investments linked to life phase</i>	35
8.2 DIFFERENCES – GENDER:	35
8.2.1 <i>New energy saving technology - gender and technological/knowledge barrier</i>	35
8.3 DIFFERENCES: STABLE VERSUS “UNSTABLE” CONSTITUENCIES	36
8.5 CONCLUSIONS.....	36
9. BARRIERS.....	36
9.1 THEME A: DOMESTIC ENERGY USE	37
9.1.1 <i>Cultural-normative and social barriers</i>	37
9.1.2 <i>Knowledge barriers</i>	37
9.1.3 <i>Individual/psychological barriers</i>	37
9.1.4 <i>Economic barriers</i>	37
9.1.5 <i>Political barriers (or physical?)</i>	38
9.2 THEME B: HOUSEHOLD APPLIANCES	38
9.2.1 <i>Cultural-normative and social barriers</i>	38
9.2.2 <i>Knowledge barriers</i>	38

9.2.3 Individual/psychological barriers.....	38
9.2.4 Economic barriers.....	38
9.3 THEME C: TRAVEL AND FUEL CONSUMPTION.....	38
9.3.1 Cultural-normative and social barriers.....	39
9.3.2 Knowledge barriers.....	39
9.3.3 Individual/psychological barriers.....	39
9.3.4 Economic barriers.....	39
9.3.5 Structural/Political barriers.....	39
9.3.6 Other barriers.....	39
9.4 WIDER ISSUES.....	39
9.4.1 Cultural-normative and social barriers.....	39
9.4.2 Knowledge barriers.....	40
9.4.3 Individual/psychological barriers.....	40
9.4.4 Economic and political barrier.....	40

1. Introduction: The aims of WP-6

The aim of Work package 6 is to produce insights into the attitudes and values towards energy saving amongst relevant consumer groups. WP6 builds on findings from WP5 where the aim was to identify the strength and relevance of various barriers to energy saving measures amongst ordinary consumers. WP6 is based empirically and methodically on the quantitative survey in WP 5 and the stakeholder interviews in WP4.

On a more detailed level, in addition to increasing the understanding of attitudes and values towards energy saving, the objectives are focused on “windows of opportunity” – identified as periods when consumers are open to relevant changes regarding energy related or when stakeholders can create such windows. Also the relationship between the 3 strategies of 1) turn/switch off 2) increase energy efficiency and 3) changes towards renewable is covered.

WP6 thus constitutes the final section of the 3 operational phases of the BAREN-ERGY project, setting the stage for WP7 and the integration of all the results from the data collecting stages.

2. Methodology

Four focus groups were conducted, with 8-9 adults taking part in each group. The total number of participants who took part was 35. The groups were conducted in Oslo, and all the participants were living either in Oslo or the neighbouring boroughs. The recruitment and subsequent moderation of the focus groups was handled by the marketing research company TNS Gallup, in cooperation with SIFO representatives.

To address one specific, perceived “window of opportunity” for consumers, 2 of the groups consisted of people who had either:

- moved home during the last 2 years;
- were planning to move during the coming 2 years;
- had made substantial alterations to their property (in terms of build/rebuild or repair) in the last 10 years;
- Or are currently making substantial alterations to their property or plan to make substantial alterations to their property during the coming 2 years

These groups were then labelled as “transitional”, whereas the other half of the participants were labelled as “stable.” These two constituencies were kept in separate groups.

Sub-stratification criteria were 2 groups with low to mid income levels (below 600 000 NOK household income per annum) and 2 with mid to high income levels (above 600 000 NOK household income per annum), and 2 groups from the 25-45 year old age bracket, and 2 groups from the 45-65 year old bracket. Each group was also split equally on gender. See the table below for recruitment specifications:

	Group 1	Group 2	Group 3	Group 4
Consumer type	Stable	Stable	Transition	Transition
Income	Low-mid	Mid-high	Low-mid	Mid-high
Gender	~ 5 men 5 women	~ 5 men 5 women	~ 5 men 5 women	~ 5 men 5 women
Age	Mixed range from 25 – 45	Mixed range from 46 – 65	Mixed range from 25 – 45	Mixed range from 46 – 65

The data was analysed by a team of social scientists, who also observed the focus groups sessions live and via DVD recordings.

All 4 group sessions worked out according to the pre-organizational schedule, and the impression was that the groups yielded a sufficient amount of data covering the 4 major topics of relevance that were identified beforehand. However, it was felt that the interview guide and the topics we wanted to cover proved to be too ambitious for 2 hour sessions and in some instances there was not enough time to cover all of the topics that were scheduled.

Interestingly, the level of self-critique and straightforwardness experienced in the groups indicated that the groups were not characterized by undue peer-pressure or dominant expectations of others. The debates appeared not to be influenced by dominant discourses or agendas, but seemed to be facilitative of open to numerous and differing viewpoints.

A contextual issue to consider is that energy and energy prices had been subject to a lot of exposure in the national media in the days leading up to the focus groups, focusing on Norwegian hydro power. This could for instance mean that some consumers were 'primed' to be more critical and focused on the economic side of energy related questions, as they question why electricity isn't even cheaper when most of the Norwegian hydro power dams were filled to maximum capacity. This means there is a lot of potential energy available in the hydro power plants.

In this analysis, the results from the conducted survey amongst relevant consumer groups (WP5) will also be viewed within the context of the results from the focus groups and compared throughout the analysis where relevant.

3. Brainstorming exercise

In the initial phase of all 4 focus groups, the moderator 'warmed up' the discussions by introducing a loose and informal brainstorming exercise centred on the following topic:

'What can be done to achieve a more sustainable development of our society? Please share your immediate thoughts and reflections around this topic'.

The results can be summarised into a few main findings:

3.1 Buy and throw away

Today's consumer driven society was mentioned as one of the major barriers against energy saving and/or to avoid waste of energy and resources. Some of the observations from the discussions hinted at a kind of resignation at a dominant way of life that has become 'habitual'. Participants suggested that several factors contributed to the dominance of what they labelled "the consumer society"; factors that are tied together and reliant upon each other and thus hard to confront or wedge:

"There needs to be a change of attitude towards how we consume"

"We enjoy buying happiness..."

"Some incentives...for companies when they build new office buildings for instance, if they use more environmentally friendly solutions."

"We are quite spoilt here in the West. And we have a whole world on the other side of the earth which are now starting to follow in our footsteps. And if they are going to have the same standard as we have had, the world will not be able to cope."

3.2 Egoistic elders on one hand, and conscious energy saving advocates on the other

The oldest constituency (45-65 year olds) was quite critical towards their peers. Some of the respondents pointed out that there seemed to be a growing mentality in their age group that when they reached retirement age, it was time to 'cash in' their hard work and to live the life like hedonists.

Elders who had worked all their life and then retired were focused on cashing in and enjoying life to the full. Environmental concerns and consequences slipped down their list of priorities. One respondent mentioned them as a challenging group to convince; a group which are not willing to take part in energy saving measures, as they "deserved to enjoy the rest of their lives."

On the other hand however, the focus groups discussions suggested that this group of individuals also convey habits and attitudes from earlier times – particularly modesty and discipline – illustrated by actions like making sure not to waste energy by leaving lights on; always switching appliances off; only warming up rooms that are in use and so on. When asked where these habits came from, the common answer was that this was something they learned at home when they were kids:

"There is a challenge for future generations to be able to support us when we get older, will the demanding generation we, who are around this table, is a part of, be as quiet as those who are 80 today..."

3.3 Other suggestions for making a more Sustainable Society:

3.3.1 Incentives and knowledge about them

Even though there was debate about whether the carrot or the stick would be more effective in terms of achieving lower energy consumption, a fair share of the participants agreed that both developing and introducing new governmental incentives to

direct consumers in this direction is required. One important point experienced both in the general debate about energy saving or related to more isolated practical issues like heating, investments in domiciles etc, was that the knowledge levels about existing incentives for energy saving measures seemed very unequally distributed amongst the participants.

3.3.2 Role Models

Several participants said there is a need for good role models to take the lead in terms of environmental issues like energy saving/conservation. It was claimed by some that there were currently no real role models present in the public sphere, and that someone with a measure of 'credibility' who was willing to stand forth and show how energy saving or other environmental challenges could be dealt with, it would be beneficial to the debate on sustainability:

"There is a need for role models, a bit high up in the system...with profile."

Governmental offices, like ENOVA (A public body to promote an environmental restructuring of energy generation and consumption in Norway (<http://www.enova.no>), The Consumer Advisory (<http://www.forbrukerradet.no/>) or Husbanken (<http://www.husbanken.no/> The Housing Bank - the main agency for implementing Norwegian housing policy) - were mentioned as legitimate sources for the dissemination of this kind of information. But people also mentioned their friends and neighbours as important sources of information in this field.

3.3.3 New and stricter building regulations

One participant made the point that Norway has introduced stricter building regulations, much like Sweden has had for years. The participant was pointing out that he thought regulatory measures are most likely necessary to achieve major changes in a more effective way as it leaves people with little choice but to comply with new compliance standards.

There were few counter arguments in the focus group discussions against the regulations currently being enforced in Norway as well, and there was an impression that attitudes towards such regulations were not necessarily negative.

"In the new building regulations, there are stricter demands for isolation, like they have had in Sweden for years; we have been behind for a long time."

3.3.4 Two fold solution – Technical and Behavioural

In response to the questions of how we can reach a more sustainable society and save more energy, there was a broad consensus amongst the respondents: a combination of both technological innovations and behavioural changes is needed.

"I think we humans are a bit hard to change. I think it is easier for us to buy something than to change. I think it is more normal amongst Norwegians to buy and invest. I think we still would like to walk around in our T-shirt indoors, so it worse for people to change."

"Behaviour. If you want to - then you do"

“For me it is the behaviour. There is not so much I can improve in our flat, so it is about the consciousness about how to act.”

“The refund for bottles works well. I think we are quite open to behavioural changes, but these are habits established over time.”

“I think it is a combination. I think the attitudes are most important in the long run, but that investments will be the most important in the immediate future. Changing attitudes takes time!”

It was apparent from the group discussion that, when it comes to behaviour and attitude towards environmental issues, experiencing something personally – such as seeing how a heat pump works and saves energy, trying out an electric car or having to breathe smog - does much to convince people and clearly resonates with existing norms of behaviour:

“I have seen how it works, practically....”

“I got to try one (electrical car) once, and I was very surprised by how much space there was in it, and how similar it was to my current car (Opel Corsa).”

4. Theme A: Domestic Energy Use

4.1 Key Issues that determine Energy Use:

- 1. Motivational factors for energy saving measures are guided by a cost/gain perspective**
- 2. Comfort has a higher priority than environmental concerns**
- 3. There is a desire for customised information about energy saving from credible sources**
- 4. Changes in energy related actions appear more linked to changes in the household composition than relocation even if these often intersect.**
- 5. Young adults move frequently and don't invest much in energy saving technology or improvements in their domiciles**

4.1.1 Cheap and clean electricity - not a major topic of concern

Domestic energy use, saving or conservation was not really high up on the agenda for most participants. The main reasons they gave were economic ones. This could be related to the fact that Norwegian consumers having high income levels and are also currently enjoying a very low price on electricity. The results from the BarEnergy survey (WP5) in fact showed the comparatively low prices of electricity in Norway. Norway also has the highest degree of renewable energy sources used for heating purposes amongst the countries included in the study – 47%, compared to levels between 2-14% in the other participant countries.

The low price on electricity is an obvious economic barrier in regard to saving and conserving energy but it could also be argued that, over time, this has also become established as an individual and a cultural barrier:

"People don't really understand why they are asked to cut down on the electricity consumption. I think people in Norway see electricity as environmentally friendly.

It is a clean source of energy. If it came from coal or nuclear power then people would understand...Then, there are the habits in Norway, we are accustomed to having lights on in most rooms, and having it warm in most rooms..."

"It is not really a concern for us (the future of the earth...) when you talk about electricity, because it is a clean energy source. If you talk about car use, and fossil fuels, ok. Sure, but not when you talk about electricity."

One hypothesis that could be interesting to look at in from this discussion is if the current cheap, clean electricity means that consumers aren't really being receptive towards, or "registering", information about energy conservation, even if relevant information is present in relevant media channels. The BarEnergy survey (WP5) results showed that Norwegian respondents more seldom considered energy labelling when buying appliances. They also scored lower on "eco-friendly intentions" These findings indicate that this could be a field for further research in Norway.

4.1.2 The personal Cost-Gain dominance

As was apparent in the focus group discussions, also in the literature more generally, motivational factors for current and future energy saving measures are clearly guided by a cost/gain perspective. The environmental effect is often regarded as a preferred side effect, but very rarely as a motivational factor in its own right.

The economic motive was also reflected in the BarEnergy survey (WP5) results from Norway. In the survey, the motive of saving money clearly scored higher than the motive of saving the environment for reducing their households' energy consumption. Only the UK and Hungary show a similar or larger gap between the dominant economic motivation and environmental one; even though the energy prices in Norway are much lower than both the other countries. That said, the issue should not be treated as mutually exclusive in practice as conserving energy can save both money and the environment. It appears however, that the economic driver appears to be the primary motive.

The stakeholder interviews in Norway (WP4) also pointed towards potential environmental benefits by pinpointing measures to that appeal to what they perceived to be the consumers' dominant motivation – the economical one.

A focus on measures to reduce the consumers' investment costs could lead to more energy efficient dwelling on the whole, and at the same time these potential investments could contribute to a possible increase in real estate value for the individual consumer.

In a related way, it could be worth looking into how investments in energy efficient and conserving measures are tied to income/education levels:

"I find energy conservation being a class issue. Looking at where I live, I can see those who are well off investing in energy conserving technology, because they can afford it. Where as other people not so well off, they cannot afford to consider what they will save in 10 years time."

"I work with supplying energy and lighting, and clearly, everything that has to do with environmentally friendly technology costs money... We have a client right now, who has 70 kW ground heating in his driveway. That costs him about 35 NOK every hour those cables are switched on. He'd rather have it on, even if it has a timer."

4.2 Current routines and habits:

4.2.1 Young versus Old

The oldest constituency generally showed a higher awareness towards their energy consumption. They pointed out that these were mostly attitudes and habits that they had brought with them from their own childhood. Some participants suggested that they now tried to pass some of these habits on to their own children. Examples given were: not showering 3 times a day; not using 3 different towels; not washing one garment only at a time because they want to use just that garment; or to put on a jacket indoors if it is a bit cold. As this participant suggested:

"I don't really like to have it too hot indoors. You get so tired of it. I'd rather keep a lower temperature and put a jacket on." Participant, oldest constituency

4.2.2 Temperature adjustments

Attitudes towards lowering their indoor temperature varied between the participants. Some said, without any hesitation, that comfort was a priority and is higher on their list than energy-saving or environmental concerns:

"I don't want to be cold when indoors. I prefer a t-shirt temperature indoors."

"It should have been expensive before I consider putting more clothes on or turning down the heat a lot."

This was also considered to be the most important barrier according to the stakeholder interviews (WP4) - the lack of will to reduce temperature.

There were differing practices towards making actual temperature adjustments in their domiciles according to many of the focus group participants. On one end of the scale some suggested that they left the heaters on all the time without reflecting upon the settings but then manually lowered the temperature as part of their evening ritual. Others however had installed electronic heaters with timers which automatically adjusted temperatures in the rooms to set schedules:

"I turn down the temperature manually, every night before I go to bed, then again every morning before I go to work."

Do you remember that?

“Yes, you are going through the same things before going to bed, and there are this and this and this you have to do before you go to work...”

Habits appeared to play a large role here, but also fire safety issues often made people switch both appliances and heaters off.

Putting on a sweater was not an option for most and was even less so for the younger constituency. Comfort appeared to be the main motivation and also to save energy, for instance by turning down the heaters or investing in temperature regulation technology. Most behaviour was about reducing the electricity bill and personal economy.

4.3 Changing behaviour – Motivation, Incentives and Barriers:

4.3.1 Lack of knowledge – Need for numbers

Motivation to act, to change behaviour, appeared to be closely tied to how much money individuals could save by implementing said change. A majority of the participants stressed the need to see the actual calculations. They suggested that calculations should show them how much could be saved by investing in each of the different energy conserving appliances or improvements of the energy profile of their domicile. It was argued that such calculations needed to be customised to suit different kinds of domiciles (type, size, age etc), household sizes, geographical location etc, and are wanted by several of the focus group participants. Of course, money saved on energy saving measures might just fuel consumption further in other areas, creating a feedback or rebound effect.

An environmental perspective amongst the participants, with a concern or the wider collective issues of climate change motivating changed behaviour, seemed to be almost non-existent, as it appeared to be very much about the wallet.

However, regardless of motivational drivers, a need for precise and concrete information seemed to be present amongst the participants:

“I think they have to squeeze me on price. Also tell me: what does it cost to drive? How much does one shower cost? How much does a bath in the evening cost? How much to use the washing machine once etc.”

There is a need for concrete information to make educated decisions. Consumers will make decisions and statements like “I don’t think that energy saving light bulbs saves energy....and thus they don’t act on it.”

“Should one really turn the light off if you go in and out of rooms? What about the PC etc?”

“I am unsure. You hear that you should switch the light off when you leave a room, even if it is a room that you will come back to later in not so long. But then others are saying then it makes no sense to switch off. I don’t really know what is right...”

“Oh...you could save that much? That’s a lot of bottles of wine that!”

These findings tie in with the same of the data findings from the stakeholder interviews (WP4). Both now suggest that knowledge based barriers (lack of cost trans-

parency and lack of knowledge amongst householders, for instance about airing) tend to dominate, alongside the economic barriers related to high refurbishing costs.

4.3.2 The motivation to act is undermined

During the focus group discussions, it was suggested that the motivation to save energy was somewhat lessened when individual consumers saw office buildings with the lights on 24/7. Some also mentioned reading about polluting power plants in Northern Russia with SO₂ (sulphur dioxide) emissions being the equivalent of 4-5 times the emissions from Norway as a whole. The participants said that these things undermined their belief in their individual energy saving efforts "making a difference." Another interpretation could of course be that these provided handy excuses to free the individual from having to reflect and act on their own behaviour and to make personal sacrifices.

"Habits is were it's at...listen to how we rationalize and say "what we do doesn't make a difference..."

"I suppose it is easier for people to pay extra compared to changing their habits" another answers – "Well, I think they rather don't pay at all!"

"The activity in the North Sea, which is responsible for 95% of our chemical emissions there are no regulations what so ever, where as there is a large apparatus established to regulate the details of every consumers life in this regard. This is a paradox to me."

Trust in waste-management was not very high amongst participants, with some suggesting that this can ruin motivations for recycling, waste delivery and so on:

"The energy saving light bulbs contains mercury...And I have little faith in these being treated the way they should, as special waste, even if I deliver them where I should. I suspect they just toss them together with everything else..."

4.3.3 Current infrastructure in domiciles

When discussing possible improvements to reduce energy consumption, or to increase its efficiency, a few participants pointed towards the physical barriers that exist in their current domiciles. It became apparent that these barriers were more valid for consumers living in apartment buildings where major improvements and investments have to be approved by the board of shareholders, or where central heating or similar is already present. This leaves this group of consumers more or less tied to current heating sources, at least for the duration of residency. The stakeholder interviews (WP4) also confirmed this as a structural barrier.

Another economic/infrastructural factor which sets the premises for energy consumption in the domicile is the ownership structure i.e. if you are a tenant or an owner.

Tenants who have their electricity costs included in their rent were found to be less likely to keep a firm eye on their levels and patterns of consumption. They were also less likely to invest in major improvements of the domicile as the responsibility for the infrastructure which provided heating or lighting most invariably belonged to the owner.

Owners with the aim of renting out a domicile might chose cheaper alternatives in terms of heating or domestic appliances, if these are included in the domicile, if they are not paying for the electricity consumed at the premises. This would mean that, economically, there would be little incentive to invest in energy saving or efficient infrastructure on both accounts.

“We have central heating, so it’s not really a worry for me.”

“We rent out part of the neighbouring flat, and he has no real consciousness towards his consumption (of energy) he showers 3 times a day, the window is left open all the time.”

“When I lived in a rented flat, there was this really old dish washer. Every time I used it I thought, oh my God..this old hog will use tons of times more energy than the new ones. But since I only rented, I didn’t buy a new one of course.”

Also, if you are living in an apartment building, where you have to get investments and changes approved by the board, this can act as a barrier against investment:

“If you live in an apartment building, investing in new windows or new insulation becomes a collective issue. Then you need agreement.”

4.4 Changes in use of energy use at home:

4.4.1 The window of opportunity - Household changes

The focus groups discussions indicated that the differences and attitudes towards investing in energy conserving or saving appliances between the stable and unstable constituency were not particularly pronounced:

“When we extended our house, you do think about the environmental issues. Environmental and safety issues often go hand in hand, and there is no real point in investing in old technology when you are building something new.”

But based on the discussions, there were indications that conservation of energy could become an issue when there are changes in household structure – moving in together, getting children, grown children moving out etc:

“One clear barrier is that you often live in certain domiciles for a short period of time. So you don’t invest, because you don’t know if you are going to live there for more than 2 years, for instance.”

“I see that our kids, when they move out and get their own place. When the first bill comes, they see that they have to do something!”

Considering the implications of these findings, it would be interesting to investigate if these situations are triggered by a renewed or changed focus on economic aspects, more related to the contestation of individual habits or values, or a combination of factors. As the discussions suggest, people have different attitudes and habits, and these can work to influence each other.

Another factor that also complicates the original window of opportunity argument is that when people move often, this also seems to have a bearing on the willingness to invest in energy conserving/saving technology. For instance, young adults usually own or live in their domiciles for a shorter period of time before moving on to the next one. This transitional phase can be a barrier towards larger investments in energy related infrastructure in their domiciles. There was a general consensus in one of the focus groups that it doesn't really make sense to invest when they planned to move in 2-3 years time anyway. A longer perspective is very often not a consideration before they find a more permanent place to live. Respondents from the younger constituency mentioned that such issues had put them off investing in improving their current domicile:

"One clear barrier is that you often live in certain domiciles for a short period of time. So you don't invest, because you don't know if you are going to live there for more than 2 years, for instance."

4.5 Changes - Investments and improvement:

4.5.1 Concrete actions and investments

A common approach towards improving the domicile in regards to energy consumption, especially amongst the younger constituency, seems to revolve around "problem solving". By problem solving, this means that improvements are sought to fix a problem that has occurred – be it cold floors, drafts at windows, an appliance which suddenly breaks down etc:

"We invested in new windows in our house, which was from 1952. What caused it? Well, I had the money to do it, but one factor that initiated it was an attempted burglary. "

"Money is a factor, but still, if you feel a draft in the corner, you don't sit there and do nothing. You do something about it, even if it costs money."

During the focus groups discussions, we asked participants to list what concrete actions they had taken in terms of energy saving. These measures were discussed in non-ranked order as:

- Replacing regular light bulbs with energy saving ones;
- Replacing regular showerheads with energy saving ones;
- Installing heat pumps;
- Changing to new and better windows;
- Getting new/extra insulation in their domicile;
- Installing intelligent temperature regulator systems;
- Trying to establish attitude changes within the family.

Almost exclusively, the main motivations appeared to be of an economic nature:

"I refuse to let my daughter use the washer and dryer for only one pair of jeans. Also, showering 3 times a day is not on...changing towels every time. She was also using the hair-dryer all the time, even in the summer."

"Also, she used to wash one pair of pants, and then the dryer for the same pair afterwards. That has stopped now. I told her." Father of teenager

“Economy is always a factor – both to do something, and to get a subsidy, you need to make an investment.”

4.6 Regulatory measures

4.6.1 Attitudes towards regulation

When the topic of regulation of the energy consumption sphere was brought up, the general reaction of most focus groups participants was negative. However, there were also some who insist that regulation might be the only way forward to actually achieve significant reductions. There seemed to be a lack of trust in individual consumers’ will and ability to change their behaviour if the current price levels for electricity remained:

“Paying per litre hot water! I lived in a Homeowner Association in Oslo, and they installed a meter, so that you had to pay per litre used. There was clear resistance towards this measure when it was initiated. The consumption went down dramatically; we got a lot of money back at the end of the year. I was a bit surprised. I didn’t think it was possible!”

This quote indicates an economic motivation, but also how attitudes towards regulation might change, even if the initial reaction was negative.

To initiate further debate on regulations in the focus groups, we brought up the concept of placing a higher price on the consumption of electricity at certain times of day, when the demand is at its peak. This was not rejected out of hand. This would be consumption which surpassed an estimated normal consumption for a household. “Over-Consumption” is a policy that was implemented in Norway some decades ago, but it is not active any more.

Several participants did question how such a measure would be enforced fairly in terms of household size, size of domicile, geography and so on. This measure was used in Norway several decades ago, so it is a familiar concept for the older constituency. Certainly, some saw such a measure as something which could serve as a tool to raise awareness around the implications of energy consumption – giving direct quantifiable feedback on consumption levels. Others however, were more suspicious towards more regulation and would rather see more positive incentives put in place:

“It would raise the consciousness about what you use. So you would save.”

“Perhaps it would encourage you to invest in other energy saving measures in your house.”

“The principle might be a good one, but I don’t think it will ever be implemented justly.”

“It would help you to know how much you use and when.”

4.6.2 Energy labelling of houses

Energy labelling of houses was generally spoken about in a positive manner by the focus group participants. But on the whole, there seemed to be a low level of knowledge about the topic. Some raised the question that if you have to pay a fee to get your house labelled; this then cast doubts about the neutrality and trustworthiness of

such an arrangement by questioning the possibilities for a higher ranked label. The labelling was seen as being useful if one was looking to enter the real estate market:

"It is positive. You get more information about houses, in case you are looking to buy one."

"Will also raise knowledge levels, as you will surely be given information about how you could improve your standard."

"I don't think I would pay to get my house labelled. What use would it be for me?"

4.7 Suggestions from the participants:

4.7.1 A Virtual House

One suggestion from the focus group participants was to have "A Virtual House/Apartment" on an internet site, performing the function of an "Energy Saving Calculator." This could enable the consumer to calculate and see with their own eyes how much there is to save by making different investments, change of behaviour etc. Several related fields (transportation, use and investment of different appliances, improvements of domicile etc) could also be integrated to show people the calculations of investments, consumption and savings both economically and environmentally.

4.7.2 Expert visitor

Another suggestion that came up during the group discussions, and was related to the desire to see calculations and the need for concrete information, was the "expert visitor". After one person suggested the idea for an energy saving expert to come home to their house and suggest improvements to save energy, others applauded the suggestion. This could indicate the need for specific and customised information begging the question 'is currently available information too generic to be of much use in individual domiciles?'

"It is not just to hatch out a plan how to invest and improve. I need someone to tell me...you need to know what to do before acting..."

"If someone could come home to you. Look at your house, and then suggest improvements. That would be great. Because then it would be customised to your specific needs. Instead of looking at an internet site, reading about changing your windows. Yeah, but do I need that? Better with an expert saying, these windows are so old, that you could save a lot by changing them."

"What are the local municipalities doing? It is not so easy to know what to do to save energy or the environment. I would have liked if someone came home to me to tell me that if you did this, this and this, you would save that much."

4.8 Section conclusion

Motivation is primarily economic

Motivational factors for current and future energy saving measures are clearly guided by a cost/gain perspective, and the environmental effect is just seen as a preferred side effect, and not necessarily as a motivational factor in its own right.

Comfort a top priority

Comfort has a higher priority than the need for saving energy, or environmental concerns. Energy is not yet uncomfortably expensive.

An information barrier

There is a desire for information and, more specifically, information which is customised to suit the individual households. The focus is on the economical and cost reduction.

Windows of opportunity

Changes in energy related actions appear more linked to changes in the household composition than relocation even if these often intersect. People influence some decisions as much as structure of domicile or recent relocations?

Life phase guides investments

Young adults move frequently and thus don't find it opportune to invest in energy saving technology or improvements in their domiciles.

Investment loans

Bearing in mind the strong focus on investment costs and the tendency that mostly older, more solvent consumers invest in energy saving technology, could interest free government loans be a better way than grants covering a minor of the investment costs?

5. Theme B: Household Appliances

5.1 Key Issues taken into account when buying/using new appliances:

- 1. There is a clear a lack of knowledge about the energy consumption of appliances and energy saving measures in everyday life**
- 2. The participants want calculations showing what can be saved economically by choosing different kind of appliances**
- 3. There is no real awareness of the difference in energy consumption of household appliances that are always on, and those that are on sporadically**
- 4. Investment cost is clearly most important when making a decision to buy an appliance, not product lifetime cost**
- 5. Energy labelling was considered to be less important than, design, functionality and price when purchasing appliances**

5.1.1 Focus on purchase price – not lifetime costs

Many of the statements from the focus group discussions indicate that when making a decision to buy an appliance, there is a clear tendency to focus on the price of purchase - the "immediate and visible cost", rather than the product lifetime expenditure (product life-expectancy, energy consumption etc).

"If there is a dishwasher costing 3000 and one costing 6000, the choice is very simple for me – I chose the one at 3000." Even if the one costing 3000 use 3000 NOK more in electricity costs during it's lifetime? "Well, that is not written on the machine when I am standing there in the store is it?"

This also seemed to be the case with household investments. Doubts when installing heat pumps as an economically viable solution for instance, were expressed during the discussions. The motivation appears to be economic here as well. When it came regarding heat pumps, there was also an aesthetic barrier and some participants also mentioned a concern about noise levels.

"I live in an apartment building, but they are not willing to install a heat pump because they don't want to have that ugly box there."

"It is a shame that these pumps are so ugly. It took quite a bit of time until I accepted my husband's suggestion to get one, because of that."

Judging by some of the comments from participants, such calculations are not something they seem to be capable of, or consider, drawing up. Hence trustworthy sources like government agencies or consumer organisations could provide good examples showing what they can save both economically and in terms of environmental strain. This could improve the consumers' motivation to invest.

The stakeholder interviews (WP4) also indicated a knowledge barrier here, as when it comes to the purchase of an appliance, the connection to the issues of energy efficiency and energy use is not always made.

5.1.2 Show me the numbers again

Participants stated a need to see, in writing, what they would save in the long run by choosing different kinds of appliances. This appears to be as relevant here as in the discussions on Domestic Energy Use. The persuasive power of numbers appeared to be strong, and again it is the potential economic gain that provides the motivation for most:

"I don't know how much you save by installing a heat pump. It costs 20 000 NOK. Will it pay off? How much?"

"When doing something, we would like something back..."

"If I am a bit cynical here, it is about me and my wallet."

An interesting hypothesis to investigate would be what households consider to be the tipping point of an acceptable electricity or energy bill, relative to household size. When or if would a high energy price lead to change of behaviour? And what would the first changes be indicated by?

5.1.3 More expensive environmentally friendly appliances

Several of the consumers we talked to found it quite ironic that environmentally friendly appliances were more expensive than regular ones. The knowledge about current incentives and grants also seemed to be unequally distributed:

"If heat pumps are so environmentally friendly" why aren't there any grants related to installing them?" (These grants do exist.)

"Why do stores even sell these environmentally inefficient or poor appliances? It makes no sense. They tell me to buy something else, but they still have these in the stores. It doesn't make sense to me."

5.1.4 Energy labelling of appliances

Energy labelling of appliances was well known amongst most participants. The majority said that they found it a great help when buying appliances and the level of trust in the labelling seemed to be quite high; particularly if there was an indication that the EU or some independent directorate were behind the labelling process. The BarEnergy survey (WP5) results showed Norway to have a relatively low level of trust in the EU Energy Policy, including the labelling. The focus group discussions did not reflect a low level of trust in the EU labelling, as the participants explicitly expressed trust in the label's credibility and also, implicitly, expressed it by admitting they factored the labelling into their considerations when they bought appliances, even though they did not always investigate or know the details behind the different energy level classifications.

Some admitted that they do not really know the concrete differences between class A, B, C and D, but many participants said that they make use of the energy labelling when buying appliances.

However, labelling does not appear to be the most important aspect when buying a new appliance, but it is certainly an element they considered. To conclude, there is a fairly high level of knowledge and trust in the labelling system.

"The energy labelling is a good thing in itself, but if the cut off point for getting a class A product is at 11 000 NOK and a class B one is at 5 000 NOK, it is evident that people have to think about economy here."

"I think it (energy class) is important...but not really because I am environmentally conscious, but one does think about the electricity bill..."

"Well, if you buy new white goods today, you buy energy class A. That's what everyone tells you is the smartest...as I am very focused on saving energy."

Interestingly, Norwegian stakeholders in WP4 had suggested that subsidies linked to the highest classified products, like in neighbouring Denmark, could help to offset this barrier.

5.1.5 Other criteria when buying appliances

However, energy labelling was considered to be less important than investment price when it comes to making a decision to buy a new household appliance. Other deciding criteria could be design (for an appliance that is visible a lot of the time, or has to fit in with other inventory), function or noise levels (usually refrigerators or dish washers).

"I looked at price, but I paid a bit more for one with lower energy consumption, since I plan to have it for a while."

"I reckon you look at the price before considering the environment...especially in a country like Norway..."

"Firstly, I want to avoid having to pay for a new one soon. I want to avoid the hassle of having to change it, and to pay a couple of thousands again. It also helps that it is in energy class A, that really washes clean and which has a low level of energy consumption."

The relationship between investment costs versus lifetime costs is again evident in the above statement. But there was also evidence of confusion about the right thing to do, and what the benefit would be in the end, or in a larger scheme of things:

"I get a bit confused by it all, this class A and B. Like you say, it is a bit silly to change something, when you have something old that works. Is it smart to change it? You have a lot of things that work, like at Cuba they used refrigerators that were as old as me, from 1953! Is that smart, or not? Yes, they say we should buy things to save energy. But changing things don't help, let's say if all the Chinese buy themselves freezers in class A. Then it goes to hell anyway! I get a bit dizzy...I cannot really decide what is right and not. I cannot really get my head around what to do."

5.2 Knowledge and current routines and habits on use of appliances:

5.2.1 (Mis)conceptions about energy consumption

The participants' knowledge about the energy consumption of different appliances comes from different sources, and they were not very critical towards this knowledge, even if they acted upon it. Information about energy consumption seemed to be something they stumbled upon by chance, and something that came from different informal sources. In this regard, some mention their parents, their friends and neighbours, an article in a newspaper and so on, as sources of their knowledge. .

"Warm water, dryer, washing machine...I think they use the most."

"I can imagine that the dryer or the PC are the things that draw the most energy..?"

"Light bulbs...the TV use a lot?"

"If you have one of those drying cabinets, they use a lot"

"I got an old freezer which I imagine use a lot of electricity."

"We have sort of a forced change at home. When our dryer stopped working, I chose not to replace it, since my daughter washes and washes, and it was being used all the time. We have space to hang clothes up to dry. We did this only to save electricity."

"I'd stop using the dishwasher to save energy, and rather wash the dishes by hand"

Some typical examples of the kind of knowledge that the participants were lacking were:

- Is it more energy efficient to wash the dishes by hand than in the dishwasher?
- Is it more energy efficient to dry your clothes on a line indoors than to use the dryer?
- Does a large TV use more energy than a small one, or is a new TV versus an old one a more valid way of looking at it?

These and similar examples could be material for a campaign aimed at raising awareness and knowledge amongst consumer groups.

5.2.3 Switching off versus Stand by

In regards to switching appliances completely off, some mentioned energy saving as a motivation for switching off and others believed that the savings are miniscule. The appliances mentioned were mostly the TV, computers and mobile phone chargers. But equally, the fear of fire was a motivation to switch off, certainly when it comes to the TV.

"Very smart to turn it off, especially thinking about the fire hazard. I think about the fire hazard and nothing else really."

"I've heard that one should turn things off, because they consume a lot on stand by."

"I read about this, and it said that a tv used very little when on stand by, so I leave it on, as the switch will become worn out after some years if I turn it on and off twice a day."

"I just think we cannot be bothered. We are too lazy (to switch off). Earlier we had to get up and go over to the TV to switch it off. Then people started using some sort of stick to push the button in, and now we have the remote. Cause you cannot be asked to get up and go over there and switch off the radio or TV."

(Response to quote above) *"I don't just think it is because we are lazy, but we wouldn't say no to some kind of new device just because, you know, it consumes a bit of energy you know... and all in all, on a country level, it adds up to quite a bit of energy if everyone buys that new device, be it a play station or whatever."*

There was also no real awareness regarding the difference between appliances that are always on, like freezers and refrigerators, as opposed to washers and dishwashers.

5.2.3 Perceptions about appliance energy consumption

The dryer was generally perceived to be the appliance which is the biggest environmental sinner, and some participants said they have reduced their use of their dryer. It is also the dryer which is the appliance they would remove if they had the choice.

“Necessity plays a part. You can do without a dryer, but you got to have a washing machine. So as long as you are able to cope without something, why have it?”

“Oh...I could cope without a lot of them!”

“Stove, refrigerator and washing machine – you need those 3”.

Only occasionally did someone raise the question that this has to be an appliance that is active all the time, or something which you use every day.

It was also interesting to note that many thought that the dryer is one of the appliances which consume a lot of energy, but that it is also one that we could quite comfortably do without – it was not seen as an absolute necessity.

The participants tended to be more environmentally conscious when buying white goods than brown goods.

“I’d pay more attention to the levels of energy consumption(of an appliance) when we are talking about white goods, but if we are talking about brown goods, design or some recommendation I have been given can be more important. But as usual, when talking about design, it is often the most expensive refrigerators or white goods which have the best design and also the best energy classes, so if you are concerned about design or quality, you will also get the best energy class included as well.”

5.2.4 Reluctant Replacing – If it works, don’t change it...and if I do, it is to save money

There appeared to be some reluctance against replacing older appliances which still worked, even if some of the participants saying this realised these old washing machines constituted high energy use:

“Then you have my old washing machine from 1983. It just keeps on washing and washing, and I don’t have the heart to throw it away. It has washed 4 kids, it has washed for my daughters 2 kids. That is not from energy class A, I can assure you that!!”

Some participants wondered how long it would take before there is a benefit in terms of costs if they invested in a new appliance. Again, the perspective was mainly economic:

“New products don’t really last that long any more. So it is not just the consumers responsibility – companies say you have to buy new appliances because they are environmentally friendly. Perhaps, but they do have an agenda.”

“If you have a 20 year old warm water tank, I reckon it would be pretty smart economically to replace it with a new one.”

5.2.5. Shared responsibility for inefficient and harmful appliances

When asked about who carries the responsibility for energy inefficient appliances or environmentally harmful ones, the debate focused on a shared responsibility between the government, who should regulate, and consumers, who could choose to invest differently. In general, there was a low level of trust in the companies produc-

ing appliances. In general, the participants have doubts about commercial companies' motives for environmental responsibility.

"Governments can prohibit things. Enforce stricter regulations."

"There should be information that these appliances are cheaper in the long run, so that consumers can make better decisions."

"We as consumers have to stop buying them..."

5.5 Suggestions:

5.5.1 Taxing the energy wasters?

In the context of regulation, and what measures would actually have effects in reducing energy consumption, several issues came up. One discussion topic was greater taxation on the energy "wasters." One suggestion was to look at how cars have been taxed; taxes dependent on engine size; what kind of fuel it uses etc.

5.5.2 "Energy-meter"

One participant told us about an energy-meter he had bought. This allows the consumer to measure the energy consumption of their appliances and also to enter the current price of electricity to see how much the use of each appliance costs - the consumers can then do the calculation themselves! (Would such a meter raise consciousness and lead to energy saving?/Could these be distributed as part of a campaign? Low cost – 120 NOK.)

5.6 Section conclusion

A clear knowledge barrier

There was a lack of knowledge amongst participants about the energy consumption of appliances and energy saving measures and actions in everyday life. There seemed to be a need for precise and credible information and also individual assistance, advising consumers on what measures they could take to save energy in their specific cases.

Show me the numbers again

Participants stated a need to see, in numbers, what they would save in the long run by choosing different kind of appliances. They appeared to be unable to draw up these calculations themselves, and thus would like some help that enables them to do such calculations as it could assist them in their economically driven decision making.

No segmenting by activity level

There no real awareness expressed towards the difference between appliances that are always on, like freezers and refrigerators, as opposed to washers and dishwashers, who are only consuming energy when used. Dryers and dish washers were mentioned as the appliances the participants imagined to be those consuming most energy. However, no one mentioned freezers or refrigerators which are always on.

Investment cost most important

When making a decision whether to buy an appliance or not, there was a clear tendency to primarily consider the price of purchase – the “immediate and visible cost”, rather than considering the product lifetime expenditure (product life-expectancy, energy consumption etc.). Other statements also backed this up.

Energy labelling

Energy labelling was considered to be less important than, design, function, noise levels and of course price, when it comes to making an investment decision. It was considered a useful guidance, but did not seem to be at the top of the motivational hierarchy.

6. Theme C: Travel and Fuel Consumption

6.1 Key issues that determine car use:

- 1. People focus on personal factors when choosing the car instead of public transport, as there was little focus on common environmental gains.**
- 2. There seems to be a higher degree of awareness towards reducing fossil fuel consumption/emissions compared to electricity based energy consumption.**
- 3. Comfort and convenience dominate as motivational factors for choosing the car instead of public transport.**
- 4. Saving time, avoiding hassle, more privacy and easier logistics were reasons given for opting for the car.**
- 5. Electrical cars have limited appeal with their current shortcomings, but is a topic where environmental action is explicitly mentioned as something participants consider, namely as car no. 2 in cities.**

6.1.1. The daily concerns and practicalities decide

There was a strong focus on participants’ daily life, their own personal situation and what is most practical in terms of where they live and their family situation. Logistics in relation to bringing or picking up children, or in relations to where workplace is situated were common rationales which determined car usage;

“Logistics, both in terms of shopping a lot and also when delivering kids and so on.. much easier with a car. Saves time and hassle.”

“It gives total independence. Can buy what you want, stuff it into your car and drive it home. You can drive where you want, when you want.”

“The Geography in Norway also plays a part - where you live, or where you grew up, shape you habits in terms of transportation.”

"I can understand that you develop an antipathy against private car use if you live in the center of a big city, like Oslo."

There was almost no focus on collective efforts or contributions to tackle environmental challenges, although there was more willingness, at least in discussion, towards making efforts compared to domestic energy saving. The general attitude seemed to be that it was within participants' rights to live a modern life, which includes the right to travel, and to consume the energy which is implicated in this.

6.1.2 Explanations for not using public transport

There was an expressed wish to travel when desired, without waiting for the next bus, tram or tube. Being sure that you get there on time was considered to be very important for many participants.

Also, there was a dislike of being on overcrowded buses/tubes/trams.

"You need a car if you don't want to be dependent on packed trams, etc..."

"First we need to get more money, so that we get the buses every 5th minute. I completely agree by the way, it is absolutely horrible to be on crammed in on the tube, or the bus, it is frankly not pleasant at all."

A dislike for crowded public transport was also a relevant barrier according to the stakeholder interviews (WP 4), as was saving time and the lifestyle changes that come with using public transport (i.e. planning). Lack of privacy was also a barrier identified in both the focus groups and the stakeholder interviews.

Much of the discussion in this section seemed to centre around issues of individual attitude. Some participants, in response to those who rationalised their car use in this way, referring to London where they felt that using public transportation is more acceptable and common:

"If you think it is crammed here, you should go to Beijing, where my son lives, they have these sumo wrestler looking fellas who stuff people into the tube."

"But it is a question of attitude. I often go to London and always use public transport. It wouldn't enter my mind to use other means of transports from Heathrow. It takes about 90 minutes, even with changes. But I know that if I had taken a car, or even the bus, it would have taken 3 hours! So the time spent is also a factor."

It seems like public transport acts as a metaphor/metonym for daily environmental action for many of the participants we spoke to. Densely populated urban areas seem to have a strong focus on public transportation – using public transport IS the face of environmental action to many participants.)

Interestingly, price was not often mentioned as a barrier, indicating perhaps that there is willingness to pay for the service, if it improves in other areas of concern, like travel time, comfort and frequency.

“It should be easier...they should run more often.”

“It should be more comfortable. It is too cramped.”

6.1.3 Further explanations for preferred use of the car:

Experiencing something first hand seems to have a clear effect on agency, with participants referring to smog, poor air-quality in Southern European cities and the like. However, few visible environmental problems in Norway could be a factor contributing to less focus on reducing personal car use, and energy consumption in general.

“We have enough electricity for a long time, cheap and more importantly, clean. We don’t have the experiences of smog and coal power plants like in Europe. We haven’t been bothered with that. I remember when I was in the old Soviet Union, it smelled coal everywhere, you couldn’t see where to go even! And during the 60’s down in the Ruhr, if you sat on a bench for a while, you would get stripes across your back! When you experience this all the time, living in a in Southern European cities with narrow, pre-car cities with streets where you cannot get anywhere, you see the problem much, much clearer, and you need to take the tube to get anywhere at all. It’s a bit luxurious here in Norway regarding this. We need to think in another way.”

Practicalities in terms of saving time are important. Poor public transport services were often given as reasons for choosing the private car, along with family logistics.

Participants stated that, in the end, practical and more immediate issues, like saving time, win when pitched against environmental concerns;

“It has something to do with prolonging your day, with 45 minutes in both ends (the morning and the afternoon to and from work)”

“When you have to pick up kids, drop them off at practice later, you got to use the car. Otherwise it would be a complete mess that would take ages.”

Media focus/personal experiences about public transportation being late or inefficient was a sticking point for some participants. They said they would rather use their car “to ensure that they arrived on time” as they expressed a low degree of trust in the public transport in this regard.

6.1.4 Attitude towards Electrical Cars

Barriers mentioned towards getting an electrical car were:

- High cost price
- Low capacity on batteries
- Lack of space
- Safety concerns

EI-cars were mentioned as a viable possibility as car no. 2 for people living in urban areas. But the focus was mostly on practical issues like free parking, using bus lanes

or what it costs. The environmental benefit is there, but again it is just one of several dimensions. The women in the groups also seemed slightly more positive towards electrical cars than men, where some of the men mentioned the electric car as a car no. 2 which the partner would then mostly drive...

"I could well use an electrical car, going to school and back. But it costs too much, compared to a 20 000 car I am driving currently. "

"We are going to buy an electrical car when we are getting car no. 2. It is my bad consciousness that plays in, because we are getting 2 cars."

"I got to try one once, and I was surprised by how much space there was in it, and how similar it was to my current car (Opel Corsa)."

"If you had 250 km range on it...it would have been great"

"As a city car, it would have been great."

6.2 Changing behaviour – Motivation and Regulation

None of the participants could say they had changed their behaviour in terms of car use for environmental reasons. Those who said they had changed their car usage mentioned reasons like: a new job, different household composition or moving to a new place, or buying a cabin in the countryside far away.

6.2.1 Fossil fuels and awareness

Based on discussions in the groups, there seemed to be a generally higher awareness towards limiting energy use linked to transportation issues (due to fossil fuels?) compared to use of electricity, which the majority of participants considered to be clean energy.

6.2.2 Questioning the credibility of information

The participants were skilled at rationalizing and justifying what they perceived as incorrect or egoistic actions, like not using public transport when it is available to them. One strategy some of the participants used was to cast doubt on the truth or legitimacy of the information they had been given – "Is that really more energy efficient? Nah... I don't believe it is."

"Well, it is something everybody wants that we should consume less. The UN has said that it (change in climate) is created by us humans. Researchers often disagree on these issues. I mean, it is possible to have two thoughts in your head at the same time. So is it really like everyone says, the picture that the government paints, is it really as bad as they say, or is it not really that bad?"

Rational explanations were given instead, with some caveats:

"Regarding the price of trains, not to say it is any cheaper to use the car, but it doesn't really tempt me to pay 2000 NOK a month to get to work, to get to work late..."

"I don't understand why they cannot build proper bicycle lanes when they build new roads here in Norway. Just do it and be done with it. It is absolutely ridiculous. If you want people to use a bike or to travel by public transportation, it has to be there! You shouldn't have to walk 500 meters to get to the bus, or to change 4 times to get to work. Sorry, that won't work for me."

One participant was very frank about his views, when faced with the question about the responses and reasons for their choices being much focused on individual convenience. It seemed to be about what was comfortable for the individual, but also measuring their individual efforts up against larger known problems within the environmental discourse:

"It is a clearly a choice between comfort and discomfort. It's too cramped on the bus and those things. Like, where I lived before, it took me a whole 45 minutes to get downtown on the tram. 45 minutes! Now I live near the train, so I use that a lot, even if I do have a car, which I use when going to visit my mother in Trondheim and the like, with the whole family. Cause with public transport that would cost very much. Ok, a better earth you say? Well, I like for us to do something about those emissions in Russia, which are life threatening, and many times the total car park in Norway. What's up there is really nasty. Then I feel very little, my train ticket feels very small in a way. So shall I stand there, sweating, in a cramped tube being uncomfortable thinking I am making a massive contribution? I am not some kind of perverse masochist, that the more I am torturing myself, the more I contribute. There is some kind of considerations taken here, concerning my everyday life, my comfort, as long as you can choose. Of course, I could force myself to walk to work if I had to. I could walk 20 km each day...if I had to. "

Moderator: But what if your grand children have to walk around with oxygen flasks on their back?

"I don't believe that."

Moderator: Because their grandfather wouldn't take the tube...

"Hahaha, I don't buy that. Sorry."

6.2.3 Regulation

The attitude towards regulation of car use was generally on the negative side. Reasons for this could be that car use is already a field where several regulations are already present, but it should also be considered that the use of the private car could be tied to perceptions of independence and autonomy as argued earlier. However, there were some references to other cities in Europe where the government has installed car free zones in the city centres. They were offered as examples of actions that have been successful in carrying the power to convince, even if we are talking about regulating the car use.

"I don't know, but I reckon people adjust. Like during the oil crisis where people could only drive on certain days."

"It is not on the political agenda to regulate car use, and who would vote for such a party? Not many."

But, as many participants argued, people would rather choose themselves and not being told:

"I'd very much like to do something, but I want to choose myself! I want to choose what to do I'd like to keep my dryer, and then rather cut down on air travels."

6.3 Air Travel and Holidays

There was a clear tendency to suggest that the participants would not be willing to reduce their air travel. They said that they would rather sacrifice small things in their everyday life. If these groups are anything to go by, the trip to foreign, or hotter, lands remains very important for many Norwegians. The Norwegian climate probably plays a part in the underlining the importance of such travels.

"Think?(about the environment in relation to travelling) To be honest, I don't think about that at all."

"I think they should punish us at other areas than to remove our possibility to travel."

"Today there is a focus on experiences- going to foreign countries, experiencing different cultures and so on. It is expected today."

"I like travelling. So I was happy when the prices got lower and lower, but then you learn more about the environmental consequences. So it is a bit of a dilemma for me."

"You can sit at lunch at work and tell about the new energy saving measure you have done, bought energy saving light bulbs and so on. But if you go to New York on a weekend trip, no one will rip you and say what an environmental swine you are. The attitude is completely different when it comes to travelling."

But what is saved, is then often spent in unsustainable ways...

"Well, I go on several trips this year, but as I have installed a energy saving shower, that evens out..haha" (jokingly)

And as in other cases when consumers are confronted with a theory that the earth cannot deal with human lifestyle choices like travelling unsustainably, some participants reacted by questioning the credibility of that information:

"Then I think, it is not certain that this is a fact, that this will happen if we travel a lot. The politicians say so many strange things. My travels are in fact quite important for many of the local economies... that people now are saying we should go back in development, now that the world is open...that doesn't make sense to me."

"That travelling should be something only for the privileged and rich, I don't like that."

6.3.1 Do climate quotas work?

Respondents questioned where funds paid in climate quotas ended up. This would seem to indicate a lack of trust, and explicit wish for funds to be exclusively tied to tackling environmental issues in a transparent way. This is a clear barrier towards paying climate quotas.

"It is a dilemma for me with travels. It is difficult with these climate quotas. No one has yet given me an answer to where that money goes?"

6.3.2 Trains vs. Planes

Participants were generally positive towards using trains as a mean of transport between cities and on longer distances. Comfort, being able to experience nature and the social factors of travelling by train were mentioned as positives. But some participants said that the prices were not competitive compared to choosing to travel by plane. They did not talk much about travel time as a factor, but the hassle with air travel was mentioned (getting to the airport and back, waiting, checking in, security etc).

“It is completely illogical. It is cheaper for me and my husband to travel far away by plane than to bring the kids with us and take the train in to Oslo (a neighbouring municipality). It doesn't make sense...”

“I do choose trains sometimes, but not because it is cheaper...”

6.4 Suggestion from the participants:

“When built, new parking lots next to the train stations in the suburban areas near big cities are filled up in no time. Perhaps building larger ones or more of them would be an incentive?”

“These city-bicycles that you have in Oslo are great”

6.5 Section conclusion

Personal drivers decide

The most important drivers for choosing the car instead of public transport appeared to be personal factors, and there seemed to be little focus on common environmental gains.

However, there did appear to be a higher degree of awareness to reduce fossil fuel consumption/emissions compared to electricity based energy consumption.

Comfort and Convenience

There was an explicit dislike for overcrowded public transport. Other reasons for choosing the car were: saving time, avoiding hassle, lack of privacy, easier logistics and to be certain to get to a destination on time.

The electrical car as car no 2?

Electrical cars have limited appeal with their current shortcomings when it comes to a perceived high price level, lacking range and not enough space. City dwellers do mention it as a possible car no.2, both out of practical and environmental reasons. Interestingly, the electrical car was one of the very few areas where environmental issues were explicitly said to be taken into consideration.

Travelling and experiencing the world is important

The willingness to reduce air travel appears to be very low, as both self realisation like experiencing other cultures and enjoying warm and sunny climates were more important than encouraging sustainability.

7. Theme D: Wider Contextual Issues

1. Many mentioned a lack of personal experiences of environmental problems, compared to countries on the continent, as a factor limiting their motivation to act
2. The main energy source, hydro power, is perceived as pure and clean and a reason why people questioning the rationale for reducing the consumption
3. The solution to lowering the energy consumption is seen as a combination of a behavioural change and technical solutions and innovations
4. Regulation is not popular, while some participants admit it might be the only way to obtain environmental sustainability
5. User friendly technology is needed, and it cannot be simple enough
6. Children are often environmental ambassadors in their families, sharing knowledge from school

7.1 Personal economic gain most important

There was a clear and strong emphasis on what is most economically viable for people individually, or as a family in regard to wider sustainability issues. This is in accordance with the quantitative results from WP-5. There seemed to be a low level of common collective environmental responsibility, although the participants were also quick to place the blame on themselves for not doing enough. On the other hand, some said that better information and active regulations from the government also could be needed to encourage a more sustainable society.

7.2 Consumers need to be convinced

Several participants indicate clearly that for a source to be credible in this field, the sender of information has to be public, and politically independent. The information has to be based on expert knowledge. ENOVA (www.enova.no) is mentioned as one such source which would have the necessary credibility to take up such a role.

Respondents stated a need to be motivated to change their actions by appeals to their sense of reason - economically, intellectually etc. The energy context appears to be dominated by a more rational, short term approach, leaving little room for appeals towards the emotional.

Publishing concrete examples was suggested as a policy which could be useful which could include:

- Showing how much rainforest is saved by recycling milk cartons;
- Showing how much emissions are avoided by travelling by public transport;

- Showing how much installing a water pump will save in energy consumption and costs for insulating your old house etc.

Some respondents thought “Norwegians” liked to judge the facts themselves, and then make their own decision based on that. It was felt that an approach telling them what to do would bring out resistance.

“Culturally, I think Norwegian are quite individualistic and initially react poorly to being told what we have to do.”

“Like earlier, when I could find out how much rainforest I could help save if I recycled carton for a year. That was good, very concrete. Then I felt that I did something.”

However, other participants would like to see stronger imagery and information campaigns, like the ones directed towards smokers:

“You need to have a neutral – non-partial messenger, like the ones said that smoking is very, very bad, and they are talking about showing pictures on the packages etc. These actions could be considered also related to environmental issues, use more of this propaganda-like stuff. Perhaps we need to be exposed to more information than now, not that we always have to search and look up things on the Internet ourselves.”

7.3 Clean Hydro Power

The participants felt that they mainly lacked the experience with other energy sources for electricity, hence the awareness regarding how clean hydro power is varies.

There appeared to be some uncertainties here, and some of the participants didn’t compare hydro power to the energy sources used on the continent. Nor did they consider that clean surplus hydro power, when exported, replaced more “dirty” energy on the continent (nuclear, coal, gas etc.).

7.4 Norway, an environmental beacon?

By reading the media, one can get the impression that Norway wants to be at the forefront of environmental development and energy conservation. In this context, one of the participants wondered if it was possible for a country which in his opinion had, relatively speaking, quite limited environmental problems to be an environmental beacon? Can Norwegians be properly motivated for environmental action, when so few have “seen the problem with their own eyes” or felt the effects of climate change, pollution etc. for real?

7.5 Responsibility for current environmental problems

The oldest constituency appeared to agree that they themselves were to blame for current environmental problems, and that they needed to change their attitudes and actions to reduce energy consumption. At the same time, they admitted that they mainly made their decisions in this field based on individual and economically motivated factors – cost and comfort.

7.6 Subsidies

The governmental subsidies for investing energy saving equipment in your home were ignored by some, while other participants stated that better incentives was the way to motivate people.

"We have had an open fireplace, until the last couple of years ago, but I couldn't be bothered to even apply for the 3000 NOK when I got this clean burning oven installed. Because before you even have a look at what you want to buy, you have to apply and get an approval of what you want to do."

"Yes, I got one grant when I invested in electronic temperature adjusters for my heaters. But I didn't use it...like I said earlier.(She could not figure out how to adjust them). Also, I said yes to one of these shower heads, and got something for installing that."

The impression was that even economic incentives were not enough for many to actually go through with it and invest and install energy saving technology. It seems like some will only go through the work of doing so when it hits them in the wallet directly, in terms of energy costs.

7.7 Comments on survey results

At the end of the focus groups, we asked the participants to comment on some of the results from the survey in the BarEnergy project (WP5). The results put Norwegians at the bottom of all countries in terms of environmental awareness/energy saving. Here is what the participants had to say about these results:

"We have heap electricity, which is also clean. Also we are quite well off."

"We live in a small country, so we don't think our contribution matters very much."

"It is a cold here. Geography plays a significant part. This is related to our weather. If it was warmer we would've been outdoors instead. Norwegians are amongst those who spend the most on their houses and refurbishing them."

"Geography also plays a part – cold and dark here, means we spend more time indoors at these times and wants to have a cosy and warm atmosphere in our "crib"

"When you drive around in Norway in the winter, you will see lights in every window of every house..."

" We are so well off that we don't have to be creative..."

"If we look at those we compare us to normally, we have more resources. Then it is only natural for us that we spend more compared to the others."

8. Differences based on the variables - age, gender and stability in terms of domicile:

8.1 Age differences:

8.1.1 Children as environmental agents

A couple of parents mentioned how their kids acted as "environmental agents" at home, correcting and commenting on their parents behaviour, for instance when wasting energy at home or unnecessary use of the car. It was felt that school is an important arena of influence, and that children raising these issues can also give parents bad conscience, as their children are the ones who would one day inherit the Earth.

"For me, it (what restricts your energy consumption) is the same thing which restricts my car use. I have a son, aged 7, who is constantly posing questions, and they keep on asking, and it won't be a day without him asking why I don't take the bus. And soon this will be the case about energy as well. And this is healthy, that us elders are being questioned by the young ones, those who are going to take over this system in a while..."

But on the other hand, teenagers were considered to be inconsiderate according to those having children in that age group. Washing one garment only, because it is the one they want to wear; spending an hour in the shower; being chauffeured around to football practice; music lessons; not wanting to take the bus or use their bike were some of the reasons given.

8.1.2 More environmentally aware elders?

The older constituency showed a tendency to being more aware about energy conservation issues, and they were trying to act more sensible in this regard. On the whole, the older constituency of both income levels, showed a higher willingness to invest in energy saving appliances/improvements. But there was little interest in reducing their patterns of air travel.

They also had a harder time talking about "sustainable society" in an abstract and general way, but had tons of experience to draw on when the topic was approached in a more practical manner, drawing examples from their longer lives and experiences as to how our lives could be lived in a more sustainable manner.

The results from the BarEnergy survey (WP5) showed a slightly higher environmental motivation with for older respondents.

8.1.3 Environmental investments linked to life phase

Investment towards energy saving technology or improvements in the house appeared to be linked to life phase. Middle aged participants appeared more willing and also economically able to invest. This was reflected in the focus groups when discussing investments.

8.2 Differences – Gender:

8.2.1 New energy saving technology - gender and technological/knowledge barrier

Environmental consciousness was higher amongst women – however, for many of them, the technical barriers to installing and using some of the technology, like water

pumps and electronic thermostats are something which need to be considered in terms of being gender barriers.

Easy to install and use is a must; where as new products often aim to be as high tech as possible and include the latest new technological advance. This is an area where there is potential for improvement, and the producers of appliances might play a part in making sure that new products are even easier to understand and put to use.

"I actually have such electronic temperature adjustments, I got a grant for installing them, but I don't know how to adjust them. I find it a bit too complicated."

"Often at points of sale, there is also a lack of knowledge, so they cannot tell us how it works, only that it is good."

8.3 Differences: Stable versus "unstable" constituencies

In terms of willingness to invest in energy saving or effective appliances or improvements, there seemed to be no real difference between those who have a stable domicile, and those who have just moved. So the question of this being a "window of opportunity" is not confirmed.

8.5 Conclusions

Lack of personal experience

Many Norwegians lack personal experiences of environmental problems and pollution that are visible on the European continent. Few apparent environmental problems in Norway could mean the motivation to act as an environmental beacon is not an obvious solution.

Clean Hydro Power

The Norwegians experience with electricity is mainly linked to hydro power, which is perceived as pure and clean. This led to participants questioning the rationale for reducing the consumption, as they don't always make the link to more polluting energy sources used in other countries Norway export electricity to.

Two fold solution

The solution to lowering the energy consumption is seen as a combination of a behavioural change and technical solutions and innovations. There is a dislike for regulation however, while some participants admitted that it might be the only way to obtain behavioural change regarding sustainability.

User friendly technology

User friendly technology is needed, and it cannot be simple enough for some who were reluctant to touch the electronic temperature timers as it appeared "too complicated."

Children as role models

Participants argued that kids are often environmental ambassadors in their families, sharing knowledge picked up at school.

9. Barriers

In this final section, we summarize the findings from above. We have shortened and categorized the already mentioned conclusions of our findings to fit into the barrier outline.

9.1 Theme A: Domestic Energy Use

9.1.1 Cultural-normative and social barriers

- A generally individualistic and economically motivated perspective was a very relevant and dominant barrier
- Norwegians generally like to have it “cosy” – which would mean a high indoor temperature, probably to offset the dark and cold weather outside for some seasons.

9.1.2 Knowledge barriers

- Calculations to convince – A clear desire to see with their own eyes how much can be saved money wise by different investments. What improvements could be made to their own domicile, and at what benefit?
- Hydro Power – There was a lack of knowledge concerning where the electricity comes from, as quite a few thought that we only consume “clean” electricity in Norway.

9.1.3 Individual/psychological barriers

- Some participants said they enjoyed having lots of lights on in the dark seasons (Cultural barrier as well.)
- The habit of switching off was not well established, linked to the cheap electricity factor.
- The enjoyment and habits of having a high indoor temperature. (Cultural barrier as well.)
- Investments were usually done on a “problem solving” basis – only looking into energy investments when a problem has occurred.
- Energy waste in the surroundings, experienced through the media or real life, made individuals question the value of their personal efforts to save energy.

9.1.4 Economic barriers

- Electricity is cheap in Norway, and income levels are high.

- Investment in energy conserving technology is expensive – can everybody afford the investment cost, even if it pays off in the long run? Are interest free loans from the government an option to consider?
- Transitional young adults – young adults often move from one domicile to the other, hence this lessens their will to invest in energy saving technology/improvements.

9.1.5 Political barriers (or physical?)

- Current infrastructure in apartment buildings restricted the ability to invest in energy saving technology.
- The tenant-owner perspective. Current agreements or ownership restricted incentives for energy saving.

9.2 Theme B: Household Appliances

9.2.1 Cultural-normative and social barriers

- A clear tendency to focus on investment cost, and not on lifetime costs
- Low level of trust in companies producing appliances – demand for government control and information

9.2.2 Knowledge barriers

- A clear need for knowledge about what the different appliances consume in terms of energy, and also for what incentives for investing in energy saving appliances that are present.
- Doubts about the effect of technologies like heat pumps – calculations are again wanted to convince the consumers to investment in energy saving appliances.

9.2.3 Individual/psychological barriers

- Water pumps were considered ugly and noisy
- Reluctance towards replacing old, functioning appliances, even if the consumers knew they were energy demanding

9.2.4 Economic barriers

- There was a clear focus on investment cost – not product lifetime cost. Also, consumers in older constituencies seemed more inclined to invest as they generally are wealthier.

9.3 Theme C: Travel and Fuel Consumption

9.3.1 Cultural-normative and social barriers

- Some reluctance towards using public transportation in general

9.3.2 Knowledge barriers

- Climate quotas – Questions concerning where the money ends up, and how it is spent.

9.3.3 Individual/psychological barriers

- Public transportation was seen as unpractical, and also unreliable
- Dislike of over-crowded public transportation – ones personal space is not breached in a car
- Air-travels and holidays were seen as a must, and not something many were willing to give up or change
- Few first hand experiences of smog/congested cities and poor air quality - It is hard to be an environmental beacon when you experience few environmental problems in your surroundings.
- Electrical Cars were seen as less safe

9.3.4 Economic barriers

- Trains versus Planes – Air travel is often considered cheaper than traveling by plane.
- Electrical Cars have a too high cost price

9.3.5 Structural/Political barriers

- Not enough car parks in the proximity of train stations leading into major cities

9.3.6 Other barriers

- The operational range of electrical cars is not wide enough

9.4 Wider issues

9.4.1 Cultural-normative and social barriers

- Generally speaking, mostly individually and economical motivations are sought – this indicated a low level of common environmental responsibility.
- There appears to be a culture present amongst the elderly to spend and enjoy life, without too much care for the environmental consequences. This was

contradicted by many in the same age-group championing values of modesty they have brought with them from childhood.

9.4.2 Knowledge barriers

- User friendly technology is needed, and it cannot be simple enough. Some were reluctant to install or even use technology that they had in their houses because they find it too complicated.
- Arguments that motivates on a personal level should be used to convince – rationale: economically and intellectually (as the individual want to be certain that their contributions actually count or matter).

9.4.3 Individual/psychological barriers

- Hydro Power is seen as clean energy – some thus questioned the need to reduce their consumption. Additionally, Norwegians generally lack much experience with other energy sources for electricity.
- No lack of cheap electricity – less creativity in terms of reducing consumption of it, nor is it a priority for many people
- Few visible environmental problems – relatively clean natural surroundings could lead to less awareness towards environmental concerns.

9.4.4 Economic and political barrier

- The governmental subsidies or lack of them is an economic barrier, at least for some consumers. The subsidies for investing energy saving equipment in your home were ignored by some, but other participants stated that better incentives was one way to motivate them to act.