



D4.4 – Behaviour change tool kit

WP4 – Strategies for Stakeholder Engagement

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EXECUTIVE SUMMARY

This report is a part of: WP4 Strategies for Stakeholders Engagement, where one of the objectives is to “Address opportunities and barriers to behaviour change”

This report looks at behaviour change models, factors of behaviour change and more importantly, pin points everyday barriers people face in their quest to change their sustainable lifestyle habits and behaviour.

Finally, based on the key barriers identified, we propose measures to address these barriers and explain how the PARENT project aims to tackle some of the issues identified.

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TABLE OF CONTENTS [Automated field!]

1	Introduction.....	6
2	Behaviour Models.....	7
3	Factors of Behavioural Change	10
4	Barriers to change	13
4.1	Structural/systemic barriers.....	14
	Lack of available solutions	14
	Lack of sustainable alternatives	14
	High technical barrier /Elitist attitude	15
	Lack of access to information	15
4.2	Perceived barriers	15
	Lock-in – Unsustainable Habits	16
	Difficulty of making environmentally conscious choice	16
	High cost and time consuming	17
	Sense of uselessness/banality of change	17
	Loneliness.....	17
	Too much information, too many issues, too little time.....	18
5	Opportunities for change	18
5.1	Table on addressing barriers	18
6	References.....	22

LIST OF FIGURES [Automated field!]

NO TABLE OF FIGURES ENTRIES FOUND.

LIST OF TABLES [Automated field!]

PARENT is an initiative of [JPI Urban Europe](#)

TABLE 2-1 A CAUSAL MODEL OF ENVIRONMENTALLY RELEVANT BEHAVIOUR 9

List of Abbreviations

Abbreviation	Description
WP	Work Package
Partner Abb.	Description
VUB-IES	Vrije Universiteit Brussel – Institute for European Studies
BLP	Blue Planet AC
UU	Universiteit Utrecht
RES	Resourcefully
SVT	University of Bergen, Centre for the Study of the Sciences and the Humanities
ENR	Enerbyte

1 Introduction

The intent to act

According to a Eurobarometer report conducted on “Attitudes of European citizens towards the environment” in 2014, the overwhelming majority of citizens questioned, or 95% consider that protecting the environment is important to them personally. Moreover, 85% believe that as an individual, they can play a role in protecting the environment. Furthermore 75% of people asked, claim that the state of the environment directly influences their quality of life and the same amount of people state that they are willing to purchase sustainable products despite the higher price. This indicates that European citizens are concerned about the environment, see a personal responsibility and have willingness to act. However, only 21% of the population studied actually admit to buying more environmentally friendly products.¹

Providing tools, information and personal guidance

By identifying the different factors, motivators and barriers of the various groups of people, there is room for change. As evident from the statements above, many people are willing to do more than they are currently doing. However, they may have less understanding of what they can actually do, and what changes will make a real difference. People expect to receive help in making sustainable choices through government choice editing and industry regulations, such as banning toxic or highly polluting energy production, setting strict quality standards for electricity producers and performance of electronics. In that way, only “good” energy and products are allowed on the market and people will have to worry less about the impact of what they use.²

People also expect help through information and personalised guidance, making them better able to make conscious choices. By providing information, practical solutions and raising awareness, the importance of, for instance, reducing household energy consumption is raised and people are given the appropriate skills and competencies to act. There are clearly limits to only providing people with information. It is a method used mostly to target – and often reaches – only a fragment of the population; the part that is already aware and motivated. Additionally, there is a perceived overflow of information on different issues targeting people at the same time. Sending out large amounts of information can

¹ Special Eurobarometer 416 “Attitudes of European citizens towards the environment” 2014

² According to Special Eurobarometer 416, 77% believe companies and industry should be doing more, and 70% think that their national government should do more.

thus add to people's confusion (information overload and information pollution) and instead of mobilising them, may paralyse instead. Finally, a limitation of information provision for behaviour change is that it only works if people respond, and therefore, the efforts must follow an approach that will tempt and inspire people to act.

Today, pro-environmental (and other) behaviour change initiatives aim to increase their impact by putting information in an interactive context and by combining information with other enabling conditions such as community building, grouped solutions and by adding incentive schemes to encourage citizen action.³

The PARENT project aims to use a combination of information and engagement tools to empower and encourage behaviour change within the pilot groups. First, the project will provide, through the energy monitors very clear information on an individual's electricity consumption. This level of information provides a starting point, it allows a person to see how they are using otherwise invisible or abstract product such as electricity. Alone, this information may not suffice to influence change. Therefore, the project focuses on the pilot participants as a team of engaged people who together can make an impact. Through newsletters, face to face meetings, and via an online platform where participants can compare their electricity usage as well as participate in energy challenges, we aim to lower the identified barriers to change and to make this transformation towards electricity conscious behaviour a little bit easier. The pilots are currently not in a position to ensure government regulation or to perform choice editing. However, future recommendations to policy makers at the end of the project may encourage decision makers to remove unsustainable choices from the market. As the pilots were designed, participants are self-selected (they register by choice), we can assume that the participants are already interested and willing to some degree to change their behaviour. It is this existing willingness in addition to the tools we provide them (e.g. targeted information, feedback, community building, incentives and encouragement) that should be sufficient to create at least some change.

2 Behaviour Models

There exist a variety of different conceptual models that aim to understand what motivates people's behaviour and drives behavioural change, and some of them have been developed more specifically in the context of understanding pro-environmental behaviour.⁴

³ Arias, & Söebeck. 2008.

⁴ Jackson 2004.

According to Jackson (2004), it is possible to identify two different kinds of approaches used to understand behaviours. The first group of approaches consider characteristics internal to the individual, such as attitudes, values, habits and personal norms; and the second group consider external characteristics such as fiscal and regulatory incentives, institutional constraints and social practices.

According to the first approach (internalist approach), people are free to choose pro-environmental behaviours, assuming that they possess appropriate beliefs or attitudes; while in the second (externalist approach), people are “locked in” to consumption choices by a variety of external conditions. Jackson also suggests that the internalist approach calls mainly for awareness raising, information provision and advertising campaigns to motivate pro-environmental attitudes, while the externalist approach calls for a combination of incentives and changes in the regulatory structure. In scientific literature, there are a number of models that consider either an internalist approach or an externalist approach.⁵ One of most widespread model of behaviour change that guides much of existing policy and considers an internalist approach has been the rational choice model, which tends to assume that consumers always maximise benefit to themselves, making perfectly informed decisions based on accurate information.⁶ According to the rational choice theory, people weigh up the expected benefits and costs of the different actions, and choose the one that offers the highest expected net benefit or the lowest expected net cost.⁷ However, this model has been criticised, mainly because of the assumption that behaviour is dominated by individual choice, when it is well understood that human behaviour is extremely complex consisting of a moral as well as a social decision-making contexts.

Later studies in the field, suggest that both internal and external characteristics should be integrated in more complex models to have a better understanding of the complexity of behaviour, and some models have attempted to do this.⁸ Therefore, these models can help to gain understanding of which causes of behaviour, being internal or external, are fundamental to a person’s life and will require intervention for change. Jackson (2004) made a review of a number of behaviour models finding the Stern’s model (ABC) one of the most significant efforts in overcoming the internalist/externalist dichotomy. Its proponents claim that attitude-behaviour link is strongest when contextual (external) factors are weak or non-existing. In a later publication made by Stern in 2005,⁹ he presents a “Causal Model of Environmentally relevant behaviour” (table 2-1). This model suggests that is possible to influence

⁵ Jackson 2004; Stern 2000.

⁶ Holdsworth and Steedman 2005

⁷ Jackson 2004.

⁸ Bagozzi et al. 2002; Stern 2000.

⁹ Stern 2005.

individual behaviour, within the limits set by context, habit and personal capability, by making people aware of the adverse consequences of their actions, and by showing them that their personal behaviour is important enough to make a difference. People who do not see connections between their behaviour and such consequences, or who believe that their actions are insignificant for creating a change will not be motivated to act by an internalized sense of obligation. It will require external motivations or pressures in order to get them to change.

Table 2-1 A Causal Model of Environmentally Relevant Behaviour¹⁰

Level of Causality	Type of Variable	Example
7	Social Background and general personal capabilities	Race, socio-economic status, financial resources
7	External conditions (incentives and constrains)	Prices, regulations, technology, convenience
7	Social influences	Social norms, advertising
6	Basic values	Egoism, altruism, openness to change, maintaining tradition
5	General beliefs and norms	Belief environment is fragile or resilient; attitude about environmental protection
4	Behaviour-specific attitudes-beliefs and personal norms	Belief that recycling is good for environment, sense of personal obligation to reduce fossil fuel use, beliefs about the personal and environmental costs and benefits of particular behaviours
3	Behaviour-specific knowledge	Knowing which packaging is biodegradable; which household behaviours emit air pollutants
2	Behavioural commitment	Decision to travel by bus
1	Environmentally relevant behaviour	Automobile purchase

Source: Stern 2005

While the PARENT project acknowledges that both internalist and externalist approach must be taken to understand behaviour, and that there is a complex relationship between the various

¹⁰ Variables at higher numbered levels of causality have the potential for direct influence on variables at each lower numbered level. Sometimes, the most important effects skip levels of causality

The PARENT project is limited in the sense that it cannot address a variety of external conditions, such as financial capacity of participants to invest in energy saving, technology literacy, access to WIFI in home, the limitations of a person renting and other factors that may create a lock in. Keeping that in mind, the project does focus on understanding the various groups of participants involved and takes measures to address their needs for information and community building. Through the user surveys (D4.2), a series of questions are posed relating to both physical realities of participants (housing characteristics and access to technology) and their attitudes and values (both towards the environment, their commitment to act, their belief in their own ability to have an impact and their norms). The survey responses will be analysed along with behaviour change over time in the project at the end of the pilot period, and with a final survey where people can respond to what aspects of the project most or least inspired them to change behaviours. The analysis will contribute to the discussion on behaviour models and conditions for change.

The PARENT project targets specifically those who indeed do see a connection between their own behaviour and larger environmental consequences, and furthermore, highlights this connection in much of its information sharing, communication and outreach. Individual ability to change, especially when acting in a group as a part of something larger, that eventually may reach the attention of decision makers at government level is a key message of the PARENT project.

3 Factors of Behavioural Change

There is abundant literature regarding the so called 'ecologically conscious consumer' or 'green consumer', and many studies have tried to identify some of the characteristics of this group such as socio-demographic variables, environmental and social values, and psychological factors.¹¹ Socio-demographic variables include, age, gender, income, and education. In this grouping, those younger and older, women, higher income and higher educated are most associated with ecological consciousness.¹² However, these socio-demographic factors only explain a small part and all of them have been contested. Behaviour is influenced by several factors such as moral, habit, personal motivations and social norms,¹³ making it enormously complex to encourage sustainable behaviour. Many factors can inhibit people's ability to behave according to their desired level of social and environmental

¹¹ Gilg et al. 2005.

¹² Straughan and Roberts 1999, Gilg et al. 2005, Eagly 1987, Straughan and Roberts 1999.

¹³ Jackson 2004

responsibility, such as lack of information regarding the environmental and social impacts of their actions,¹⁴ high cost of pro environmental choices and lack of trust.¹⁵ Therefore, behaviour change seems to depend on a conjunction of factors, so that changing just one factor is likely to make a difference to only a small segment of a target population. Different internal and external factors matter to different individuals at different times. When it is impracticable to change factors like physical infrastructure or regulations, the use of other internal factors to influence on behaviour such as attitudes or values, offer the greatest potential for change.¹⁶

Building on social norms is one way to induce behavioural change within the limits set by the behavioural context.¹⁷ Social norms have a powerful effect on people's decision-making and habits, and they are reinforced by the infrastructure and institutional context. Once something is established as a social norm it is much more likely to become a habit for people.¹⁸ Therefore, social norms, habits and routines are decisive factors explaining, for instance, consumption practices.¹⁹ Habit is a crucial factor in behaviour change, which is often very difficult to break. To break habits will require particular focus on "unfreezing" existing habits, which will involve changing the social context in which consumers operate.²⁰ Also, activating personal altruistic norms with messages that highlight the social or environmental consequences of specific behaviours and the importance of the individual actions seems to be an effective approach. Making people aware of the consequences of their environmentally significant behaviour for other people and the environment, and by demonstrating that an individual's actions are important, have the potential to activate personal altruistic norms and change behaviour.²¹ The belief that people's personal effort can contribute to the solution of a problem is an important factor.²² According to Straughan and Roberts (1999), it is more important that people believe in the efficacy of individuals to combat environmental destruction than it is to show concern for the environment.

In spite of the complexity of understanding the interplay of factors that influence behaviour, actions aiming to influence behaviour can focus on features that may play an important role in persuasion and can be more effective to motivate behaviour

¹⁴ O'Rourke 2005.

¹⁵ Robinson and Smith 2002.

¹⁶ Stern 2005.

¹⁷ Stern 2005.

¹⁸ Holdsworth and Steedman 2005.

¹⁹ ASCEE 2008.

²⁰ Holdsworth and Steedman 2005

²¹ Stern 2005.

²² Vermeir and Verweker 2006; Roberts 1996; Stern 2005; Straughan and Roberts 1999; Gilg et al. 2005.

change. These include²³:

- Building on personal values and norms
- Acting on perceived availability
- Acting on perceived effectiveness
- Raising involvement and participation
- Using emotional and imaginative appeal
- Making limited cognitive demands
- Applying principles of community management (credibility, commitment, face to-face communication, etc.)

Overcoming problems of lock-in, unfreezing old habits and forming new ones, understanding the complexity of the social logic in which individual behaviours are embedded: all these are pre-requisites for successful behaviour change initiatives.

The PARENT project focuses on all of these above features to some extent, with the final aim of making sustainable behaviour the norm and the habit. Step by step, from providing the tools to understand electricity and household use of electricity, through regular meetings and newsletter exchanges and via an online platform where people can compare with each other, and participate in fun to do gaming elements such as accepting challenges and scoring individual as well as collective points. The table below highlights some of the ways the project uses the features of impact in its project design.

Table 3-1 PARENT projects use of key behaviour change features

Feature for change ²⁴	PARENT response
Building on personal values and norms	Saving energy, saving money, and participating in creating a better world together are all values that are easy to agree on. And as participants choose to register and participate, it is likely that they share these common values at least some of them.
Acting on perceived availability	Highlighting solutions that are available out there, the project shows that they do exist and are widely in place such as energy efficient electronics, possibilities to become a prosumer, general advice on how to save energy. The project shows that there are plenty of things we can do as individuals working together.
Acting on perceived effectiveness	Providing information on positive changes that take place, on project goals reached, having the participation of the communes, highlighting that people are being taken seriously and the impact could be even higher than a personal improvement.
Raising involvement and participation	All of the project's initiatives aim to raise involvement and participation, from the first information session of the pilots and

²³ Stern 2005, Vermeir and Verveker 2006. Straughan and Roberts 1999, Holdsworth and Steedman 2005.

²⁴ Bold texts highlight primary approach of the project methodology

	throughout the pilots, workshops, online platform and other events. The communication allows for participants to respond and get active.
Using emotional and imaginative appeal	The project tries to use creative methods such as games, interactive co-creating exercises at workshops and events, and by providing varied information material via the newsletters. The starting point is always our common goal of a better world that at the same time is better for the individual participant
Making limited cognitive demands	The project tackles sometimes complex issues, but it aims to send clear messages, solutions, methods to progress, step by step approach to follow from Smappee installation, to how to start transforming a home and life in a more sustainable way, in bit sized packages.
Applying principles of community management (credibility, commitment, communication face to-face.)	In all its communication, the project strives for credibility, through privacy and data protection talks, transparency on structure and funding as well as partnerships with communes and other actors. By organising face to face meetings, inviting participants to join us in events and the regular email communication is all a part of creating trust and community.

4 Barriers to change

The challenge for encouraging citizens to act more sustainably is that the change required of them is often at the more complex end of a decision-making processes, that and it does require one to make a change. As touched upon in the introduction, it has been well reported that for many people there is a gap between their high level of concern about the environment and their actions, called the value-action gap.²⁵ The most frequently listed perceived or real barriers to closing the value action gap have been the belief that one person cannot make a significant difference, lack of availability or accessibility of a sustainable product, more effort required to purchase/ behave sustainably, higher cost of sustainable products and lack of understanding of the problem/lack of information.²⁶ Additionally the previously mentioned situation of people being or feeling locked-in to particular behavioural patterns that seem to be resistant and difficult to change. This lock-in occurs in part through reversed incentive structures (e.g. subsidies for oil and coal), institutional barriers or inequalities to access that encourage continued unsustainable consumption.²⁷

²⁵ Defra 2008

²⁶ Defra 2008.

²⁷ Ministry of Agriculture, Food and Consumer Affairs Sweden 2005.

People act within social, technological and market boundaries, as well as the boundaries of their own knowledge and that can limit their capacity for behavioural change.²⁸ A change requires a combination of measures aimed at removing obstacles and creating opportunities for change. In the sections below, we look further into these structural and perceived barriers and explore means to overcome these, thereby enabling change towards a more sustainable behaviour.

4.1 Structural/systemic barriers

External conditions can impact people's choices and ability for pro environmental behaviour. These include financial resources, the location of jobs and relevant shops, the opportunities for using public transportation, proximity to a waste disposal site, level of services a municipality offers, and availability of sustainable products and services in the vicinity.

Lack of available solutions

For example, if a person is renting and not a homeowner, she or he may be unable to make physical changes to her or his home, thereby making it nearly impossible to make a change such as improving insulation/windows/new boiler/efficient kitchen appliance etc. It would require a person to move to another dwelling to make a change in household energy consumption. There may also be situations where an efficient solution does not exist or is not apparent. In those cases, it is the main responsibility of a government or those in the right authority to provide citizens with viable solutions.

The key response to this barrier is to shift the focus to areas where there are solutions available and to create citizen push towards government actions.

Lack of sustainable alternatives

Similarly to the barrier above, when a sustainable alternative to what a person has or uses does not exist, responses are limited. One option is to stop owning or using the non-sustainable item. This can be hard when we look at things like electricity. If the only electricity on the market is unsustainable, a person has very few choices as it is very hard to live without the resource. In this case, reducing dependency is a solution and again, the responsibility lies mainly with those who have the authority to make changes such as requiring a supply of sustainable electricity, setting standards and regulations and developing alternatives.

²⁸ Mont and Plepys 2008.

High technical barrier /Elitist attitude

When a sustainable solution or alternative requires high levels of certain skills, it may become a deterrent for people to adapt or accept the change. For instance, understanding product ingredients list can require a high degree of literacy and asks an individual to research what the abbreviations mean and how those ingredients have been extracted/created/developed. Another example is for understanding energy consumption. A person must be able to understand what a watt is, how to read a meter, and to translate figures into a meaning. Smart solutions such as energy monitors and smart plugs can in some instances make the data more understandable and easier to connect with, but the technical barriers for installation and use may be a limiting factor. A person with limited technology knowledge or resources for understanding complex data may easily feel alienated and unable to embrace the change.

Education, guidance, hand-holding through challenging steps are the key means to overcome technological and high skill barriers. Alternatively, simplifying and reducing the high skill needed to use a sustainable product would allow a larger group to access with lower efforts.

Lack of access to information

Few people have a high awareness or comprehension of the real sustainability or ethical character of products. The benefits of sustainable solutions are often poorly communicated to people, so that they are unable to make fully informed decisions in accordance with their preference, budget or conscience. But also, sometimes people act unsustainable just because they think that's what everyone else does. A way to overcome this barrier is to ensure there is available verifiable information that is communicated in a clear way and made accessible to all, not only segments of the population.

4.2 Perceived barriers

Structural barriers can be challenging to overcome and lowering those barriers often requires physical changes to our environments, political and regulatory actions as giving a priority to overcoming these. Perceived barriers, relate more to a person's attitude, and these can be just as challenging to overcome, but the tools may be different. Perceived barriers include people's habits, attitudes, culture and community as well as believes, such as whether it is socially acceptable to choose an environmentally adapted lifestyle. Substantial parts of our everyday behaviour are made up of habitual actions. People perform such actions without evaluating all possible consequences of our choice or all possible alternative options. Habits are formed among other things, to facilitate everyday living and are often hard to break.

Lock-in – Unsustainable Habits

According to a report commissioned by the UK National Consumer Council and the Sustainable Development Commission called “I will if you will,” four areas of our lives account for most of our impact on the environment. These are our household management, our diets, transportation and holiday travelling.²⁹ People find themselves locked into unsustainable behaviour patterns, out of habit or because they are following the majority who they see as acting in the same way.

The report suggests that practical catalysts are needed to open people’s minds to the impact of their actions and demonstrate alternatives, helping to build the mandate for more radical change.³⁰

These include making the connection between climate change and environmental (and social) impact and the way people use electricity, the way they travel, eat etc. Making the link clear is a first step in preparing the mind for change. It can be important to meet people where they are at, taking small steps at first and progress over time to more fundamental changes. It helps to be able to focus on one concrete action and once that change has been made, move on to the next, thereby snowballing the impact.

Difficulty of making environmentally conscious choice

Linked with the lock-in, is the belief (or reality) that the sustainable behaviour is more difficult to do and that it requires a high amount of effort. Instead of just getting in the car and driving, a person may need to walk and take one or more means of public transport to their destination. Instead of grabbing the pre-made meal from the frozen food section, a person may need to find a local produce market and find out how their food was sourced. Instead of that take away coffee cup, a person will need to bring their own coffee, in a reusable cup, or sit down to drink. With people’s busy schedules and high-pressure lifestyles, an important way to reduce the effort of change is to make the sustainable choice easier. To make the default choice that sustainable one. The National Consumer Council and the Sustainable Development Commission UK report indicated that

“people moving into homes with built-in renewable energy technologies, like solar water heating or micro-wind turbines, report far greater awareness of what they can do to reduce their climate impact – and their energy bills. Micro-renewable technologies can provide a tangible hook to engage us emotionally with the issue of energy use. People also report a sense of satisfaction and pride that they are helping to tackle climate change in their everyday lives.”³¹

²⁹ National Consumer Council and the Sustainable Development Commission UK, 2006.

³⁰ http://www.sd-commission.org.uk/data/files/publications/I_Will-Summary.pdf

³¹ http://www.sd-commission.org.uk/data/files/publications/I_Will-Summary.pdf

High cost and time consuming

Along the same line of finding the sustainable choice requiring more effort, there is a sentiment that being environmentally friendly is expensive and time consuming. Indeed, home renovations and technological high performing equipment are costly and takes time, but many solutions actually save money and time over the longer term. From a top down approach, making sustainable solutions less expensive and making the design of sustainable solutions so that they are evidently a time saving thing, is important. From a behaviour change perspective, identifying solutions that are not costly or time consuming and creating the situations for people to experience the benefits is one way to reduce the barrier. In order to get people started, a change must lead to an improvement in their life. For instance, biking instead of driving can easily be a faster healthier and happier choice, but there can be a big mental barrier to even try it. Testing a bike ride with a colleague or a friend, or participating in the car free day, may be an opportunity to demonstrate the benefit of biking.

Sense of uselessness/banality of change

As touched upon in chapter 3, the belief that people's personal effort makes no difference in solving a problem is a key barrier. Why do something small or even big, when the problem (e.g. climate change) seems so overwhelming and a single person's actions have little or no impact? It is more important that a person feels that her or his actions matter, than his or her belief in the cause.³²

Showing people that they are a part of something bigger and they are not alone is a way to overcome this barrier. Additionally, it's important to show that other people are also doing things as most people do not want to be the only ones out. Showing role models, examples and group initiatives will create a sense of team, or a community feeling that helps in believing in impact. Receiving feedback on achievements will reduce the barrier of feeling insignificant.

Loneliness

Very much linked with the barrier of feeling like change is insignificant, is the feeling of loneliness. Being alone trying to make a change is hard. Feeling lonely is a paralysing feeling. In addition to providing a person with a community of people who have a shared goal, and linking people together, showing measurable impact can further aid. By showing that as a group, the collective effort has saved a certain amount of CO₂ or energy or plastic bags or any issue that is being tackled, not only

³² Straughan and Roberts 1999.

makes a person feel like they are having an impact, it also adds to their sense of accomplishment and makes them feel good about their behaviour change.

Too much information, too many issues, too little time

The world is full of information. The internet and its social media throws information at people all day. People know about environmental disasters, social injustices, people and other animal life suffering, extinctions of species, poverty, hunger, slavery, war. There seem to be so many enormous problems in the world. Where to begin? A person also needs to make time and space for their own lives, work, families, illnesses, financial worries, social schedules and so on. It is hard to balance all the information about the world and managing one's own life at the same time. Therefore, the maximum is done to cover everything, and people, understandably focus on those things closest to them and the things they understand the best. To reach people and engage them therefore requires a simple and clear message of something that is doable and has an impact. It has to fit within a person's life and make it worth their time. People need to believe that the actions and changes they make are the right ones to do and that they fit into their broader life values. Using role models, maybe even a bit of fun, well communicated message and by helping people take the steps, it may be possible to reach through all the noise.

5 Opportunities for change

By looking at the key structural and perceived barriers towards pro-environmental behaviour change, we also look at the ways these can be overcome, or at least how the barriers can be reduced. Table below (5.1) highlights the points from the identified barriers, the means by which these barriers can be reduced, and compares those with relevant activities planned in the PARENT project.

5.1 Table on addressing barriers

Identified barrier	Proposed means to address	PARENT Project activities
Structural & systemic Barriers		
Lack of available solutions	<ul style="list-style-type: none"> Focus on what can be done 	<ul style="list-style-type: none"> Policy recommendations

	<ul style="list-style-type: none"> • Address those in power situation to create solutions 	<ul style="list-style-type: none"> • Pilots focusing on personal behaviour change and small-scale energy saving
Lack of sustainable alternatives	<ul style="list-style-type: none"> • Reducing dependency on unsustainable product • Address authority to make regulations and develop sustainable alternatives 	<ul style="list-style-type: none"> • Focus on energy reduction of households • Policy recommendations towards more sustainable systems
High technical barrier /elitist attitude	<ul style="list-style-type: none"> • Lower technical requirements and exclusion • Provide guidance, education, hand-holding 	<ul style="list-style-type: none"> • Professional electrician installing energy monitors in households • Personal guidance via phone/email/meetings. • Information sharing via mail/website/meetings • Workshops
Lack of access to information	<ul style="list-style-type: none"> • Information provision that is communicated in a clear way and made accessible to all 	<ul style="list-style-type: none"> • Technology integration / Installation of energy monitors in households • Creation of content, advice, information material • Active sharing of information • Personal guidance via phone/email/meetings. • Information sharing via mail/website/meetings • Workshops
Perceived Barriers		
Lock in- Unsustainable Habits	<ul style="list-style-type: none"> • Establishing link between environmental issue and behaviour • Meet people where they are at • Provide small concrete steps as solutions that can progress over time • Choice edit/force change with system/structural changes that remove unsustainable option 	<ul style="list-style-type: none"> • Providing energy monitor to show link between energy and behaviour • Information sharing on issue and solutions • Regular communication with doable steps (via newsletter) • Workshops

<p>Difficulty of making environmentally conscious choice</p>	<ul style="list-style-type: none"> • Reduction of the effort of change/make the sustainable choice easier • Clear information and solutions 	<ul style="list-style-type: none"> • Giving people the energy monitoring and taking care of installation • Clear solutions via workshops/newsletter/challenges
<p>High cost and time consuming</p>	<ul style="list-style-type: none"> • Making sustainable solutions less expensive • Making the design of sustainable solutions evidently time saving • Identify low cost solutions • Show added value of changed behaviour 	<ul style="list-style-type: none"> • Energy monitor and installation provided at no cost • Interface of monitor easy to read and thereby time saving (once understood) • Newsletter, workshops and platform challenges highlighting savings in cost and adding to quality of life opportunities
<p>Sense of uselessness/banality of change</p>	<ul style="list-style-type: none"> • Showing people that they are a part of something bigger • Showing people they are not alone in acting • Showing role models making same changes • Group activities • Community building • Providing feedback on achievements 	<ul style="list-style-type: none"> • Pilots focus on group effort • Online Platform and newsletter shows comparison and achievements • Challenges and leader board • Collective score of challenges accepted on online platform • Group events- workshops • Comparison • Project focus on more than one city • Communication that pilots will lead to policy recommendations
<p>Loneliness</p>	<ul style="list-style-type: none"> • Showing people that they are a part of something bigger • Community building • Measurable impact of group 	<ul style="list-style-type: none"> • Pilots focus on group effort • Online Platform and newsletter shows comparison and achievements • Challenges and leader board • Collective score of challenges accepted on online platform • Group events- workshops • Comparison • Project focus on more than one city • Communication that pilots will lead to policy recommendations

Too much information, too many issues, too little time	<ul style="list-style-type: none"> • Highlight change is doable and worth it • Clear targeted information adapted to specific needs/groups • Helping people in their actions 	<ul style="list-style-type: none"> • Pilot community building efforts • Technology and behaviour solutions • Providing targeted workshops on what people can do • Relevant bi-weekly newsletters • Management of expectations
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6 Conclusions

Changing behaviour is a complex process, and something most people have attempted on a personal level to change their behaviour could agree that it can be quite challenging, even when that behaviour change would be considered desirable. This document provides a general overview of the debate and discussion on behaviour change models, factors for behaviour change and highlights the key barriers to change. These aspects are then compared with the approaches taken in the PARENT project, where the aim is to assist participants to reduce their own household electricity consumption, and to make a change towards a more sustainable lifestyle. PARENT tries to reach its participants by having a positive and meaningful message that most people would agree with – save the planet, save money, and connect with other people in your surroundings. Through its various information sharing, outreach efforts, empowerment and engagement activities, the project takes advantage of key factors that can enable behaviour change and strategically aims to reduce the challenges and barriers to change. These activities include providing participants with an energy monitor, technical advice, face to face meetings, workshops and events, surveys, regular newsletters full of updates, information, motivation and solutions, an online platform that allows people to compare their consumption and accept challenges in addition to small incentives and prizes and personal phone calls when asked by participants. At the end of the pilot, a final survey will be shared with participants, where we will attempt to answer some questions on whether participants changed their behaviours, or were by any means affected by the project, and if so, which aspects of the project spoke most to them and gave them the needed tools to make the actual change.

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