



# D6.1 – Pilot Protocol

## WP6 – Pilots

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## EXECUTIVE SUMMARY

The pilot protocol provides guidance in the preparation and execution of the pilots in Belgium, the Netherlands and Norway.

The pilots form the keystone of the PARENT project. The aim is to recruit and engage participants in Amsterdam, Bergen and Brussels to reduce their household energy consumption through a participatory platform consisting of combination of online and offline engagement techniques.

The pilots will run for a period of twelve months, preceded by a preparation/recruitment period and followed by an evaluation/reporting period. In Amsterdam and Bergen, the target is to recruit 100 households; in Brussels we seek to involve 200 households, as we collaborate with two distinct communes (Forest and Watermael-Boitsfort).

The pilots consist of two distinct stages. The first stage focuses on the recruitment of participants and the installation of the sub-metering devices. In the second stage of the pilot, the project team will introduce a variety of community building activities and engagement techniques, including gamification and technology add-ons.

While recognizing that there are differences between the pilot experiences, the deliverable spells out common considerations, dealing especially with social acceptability and legal requirements:

- Ensure observance of Responsible Research and Innovation (RRI)
- Guarantee representativeness of households
- Adjust pilots to local conditions
- Determine responsibilities of project partners
- Acquire equipment necessary to run pilots
- Set forth conditions for evaluating pilots results via Living Labs
- Develop a template for consent for participation in research

It also provides an indicative timeline for the two stages of the pilots.

The pilot protocol builds on previous work packages, which have mapped the stakeholders, their needs, the technology state of the art and gamification theories (WP1), set out the legal, ethical, social acceptability and technical requirements (WP2-3, WP5), and developed a strategy for stakeholder engagement (WP4).

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## List of Abbreviations

| Abbreviation | Description   |
|--------------|---|
| WP           | Work Package  |
| T            | Task  |
| M            | Month   |
| PV           | Photovoltaic  |
| RRI          | Responsible Research and Innovation   |
| 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 |

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## 1 Introduction

The pilots form the keystone of the PARENT project. The aim is to recruit and engage participants in Amsterdam, Bergen and Brussels (Forest, Watermael-Boitsfort) to reduce their household energy consumption through a participatory platform consisting of combination of online and offline engagement techniques. The pilots will run for a period of **twelve months**, preceded by a preparation/recruitment period and followed by an evaluation/reporting period. In Amsterdam and Bergen the target is to recruit 100 households; in Brussels we seek to involve 200 households, as we collaborate with two distinct communes.

We anticipate that the pilots will consist of two distinct stages. In a **first stage**, the pilots are launched with information sessions in order to introduce the pilot objectives and conditions. Importantly, the consent form (which is required within of ELSA and RRI frameworks, WPs2-3) is explained and signed before participants receive the energy monitor. In addition to familiarizing people with the pilot, the aims of this first stage are to test to which extent participants are able to install the sub-metering device themselves, and to observe participants' interactions with the provided platform with minimal project intervention. Bimonthly (every two weeks) newsletters will be sent providing participants with an update on the project, information on local energy-related events and tips on how to reduce their energy consumption. During this first stage, participants can sign up and join at any point. We will continue our outreach exercises (see 3 pilot timeline), but also rely on early adopters to spread the news about the project among neighbours.

During the **second stage** of the pilot, we introduce a variety of community building activities and engagement techniques, including gamification and technology add-ons. The newsletters will map participants' energy consumption against other comparable households (clusters) and participants will be presented with challenges, awards and surveys seeking to retain their interest in reducing their energy consumption. Beyond these planned activities, we will also organize 2-3 workshops to receive feedback on their experiences and work interactively towards a better understanding of how energy consumption can be reduced in the home. The underlying assumption is that working in community towards a common goal helps stimulate individual change. In the closing workshop, participants are informed of the results and outcome of the project, invited to the final conference (WP9) and given information about our exploitation plans. Participants are allowed to keep the energy monitor as a reward for having completed the pilot experience.

The pilots build on previous work packages, which have mapped the stakeholders, their needs, the technology state of the art and gamification theories (WP1), set out the legal, ethical, social acceptability *and* technical requirements (WP2-3, WP5), and developed a strategy for stakeholder engagement (WP4). Their insights shape the approach taken in the pilots. To take one example, it became clear early on in the project that it would not be possible to use smart meters. Although this simplifies the interactions at a local level

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significantly (as the DSO is minimally or not involved at all), it required an extensive search into the most appropriate sub-metering device. The choice of sub-metering device determines who can participate (some require an electrical outlet next to the fuse box; others a limited distance to the Internet router). Moreover, as the project consortium experienced difficulties during installation when initially testing various devices, it seemed appropriate to test to which extent participants are able to install the sub-metering device themselves. To this purpose, a [questionnaire](#) was circulated to initial applicants in the Brussels pilot. Further, the choice of sub-metering device impacts the gamification techniques and technology add-ons we can introduce. While some sub-metering device include smart plugs, others do not. The possibility to integrate platform improvements also depends on the selected sub-metering device. (For further information, we kindly refer to D1.3 / D5.1.)

This pilot protocol seeks to outline elements of a common approach for organizing the pilots in Amsterdam, Bergen and Brussels. It recognizes that differences in local conditions and relations shape the timeline and approach taken. At the same time, in the following sections, we aim to explain common considerations and steps necessary to launch the pilots. We provide a sample timeline based on the Brussels pilot in order to demonstrate the sequence of interactions and workshops.

## 2 Pilot considerations

The following points (taken from the DOW) describe factors that need to be considered while preparing and organizing the pilots.

### 2.1 Ensure observance of Responsible Research and Innovation (RRI)

D3.2 sets out the principles for social acceptability of the living labs. It provides guidelines how we can seek to reach both ethical social acceptance (legitimacy and rightness of policies, regulations, applications, technologies and developments) and in-practice social acceptance (actual use of the technology) at three levels (socio-political, community and market) in the PARENT project. The pilots aim at ethical and in-practice acceptance at the level of social-political and community involvement. The acceptance at the market level will depend on a) the development and exploitation of additional platform features and b) the willingness of the device providers to incorporate suggestions based on our pilot experiences.

The principles set out for the purpose of organizing the Living Labs are highly relevant to consider in the conceptualization of the pilots as well. The following paragraph specifies how the pilots seek to fulfil the social acceptability principles explained in the annex to the social acceptability protocol. First, in terms of **involvement and engagement**, we recognize that the self-selected nature of the participants creates a bias towards an already environmentally-conscious subset of the population. At the same time, we aim to disseminate information about the project widely in order to not reinforce this bias from

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the outset (*heterogeneity*, see further point 2.2). Further, as the social acceptability protocol recommends, we have set up reference points/persons for each pilot. Interested stakeholders can reach the pilot coordinators using the email addresses [amsterdam@parent-project.eu](mailto:amsterdam@parent-project.eu), [bergen@parent-project.eu](mailto:bergen@parent-project.eu) and [brussels@parent-project.eu](mailto:brussels@parent-project.eu). To the extent possible we will also ensure that the pilot coordinator is clearly identifiable in communication to interested stakeholders (*reference point*). Still under involvement and engagement (but also addressing **trust building**), we recognize (and experience) the importance of setting *expectations*. The project communication developed for citizens and local partners outlines not only what the project is, but also what they can expect and how much engagement is required (see also point 2.4). The consent form signed when the participant signs up to the pilot aims at managing expectations as well. In this regard, a clear *communication strategy* is also crucial. In consultation with the local partners, the main project flyer has been shortened in order to communicate the key messages as clearly as possible. Further in terms of communication, engagement during the recruitment period is individual and responsive. During the pilot we will send bimonthly newsletters, monthly surveys and hold quarterly meetings to extend the retention of the participants.

Second, in terms of **empowerment**, the second stage of the pilot emphasizes bidirectional communication and community engagement. The surveys and workshops focus on receiving feedback from participants, which is further elaborated upon in the living labs (a sub-set of participants and other local stakeholders, see more D7.1). We wish to provide the knowledge and community to encourage behavioural change. Through sharing knowledge and building community, we wish to create an environment in which participants feel comfortable to make small yet concrete changes to reduce their energy consumption.

Third and finally, in terms of **spontaneity and realism**, we will experiment with different newsletter formats and features, gamification techniques, workshops formats, locations and timings. To the extent possible, we will also provide additional technological features building on the existing energy monitor platform. In the context of the pilots, the monthly surveys and quarterly meetings are crucial to gather participants' input, which provide the basis for the co-design process in the living labs. We will seek to integrate new opportunities into the pilot (e.g. overlapping projects, relevant events, changes in technology) as they arise, in order to enhance the experience (and thus responsiveness) of participants.

## 2.2 [Guarantee representativeness of households](#)

Representativeness within the PARENT project relates to **house(hold) characteristics**, on the one hand, and attitudes, beliefs and behaviours on **energy savings and community engagement**, on the other hand. In terms of household characteristics, we take into account material attributes: type of house, size of house, type of heating system; and household attributes: size of household, age, education, gender and ICT usage. In terms

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of attitudes and behaviours on energy savings and community engagement, we consider average consumption, personal values and views on sustainability and energy savings, current behaviour and efficacy, as well as attitudes to community and place, and current societal engagement. After recruitment, participants are invited to complete a [survey](#) to map their attributes, attitudes and behaviours. The survey helps us to understand motivations and barriers for sustainable energy behaviour, and to identify factors that may be linked with individuals' interest and ability to act towards energy saving.

We cannot guarantee representativeness of households in the PARENT project, as citizens volunteer to participate in the pilot experiences. We are aware that this will likely result in an overrepresentation of already environmentally-conscious citizens and expect that overall energy savings will be smaller than one could expect from a truly representative sample. At the same time, a number of measures have been taken in the recruitment process to reach out to a broad(er) segment of society. In Brussels, project information has been disseminated through local citizen groups, neighbourhood associations and contacts were laid with social services. Furthermore, upon recommendation of the local partners, flyers were distributed at neighbourhood markets and events.

### 2.3 Adjust pilots to local conditions

The execution and comparison of pilots in three European cities is of great added value to the project. Throughout the project, partners are regularly updated on pilot developments and experiences are shared for the benefit of the consortium. Further on the basis of the individual pilot and living labs reports (D6.2-5 and D7.2-4), the pilot evaluation report (D7.5) will reflect on similarities and differences between each city. This will allow us to identify lessons learned that transcend national boundaries. The following paragraphs set out some of the initial features that are common *and* distinctive to the three pilots. A short description of each pilot follows:

#### **Similarities**

Each pilot has opted to use Smappee as their energy monitor of choice. This simplifies sharing experiences related to installation and use of the energy monitor between pilots. The means to engage with participants within the pilot (newsletters, workshops, platform and gamification) are similar as well. It should be noted that the specific content of these tools is locally determined, however. To highlight the platform in particular, participants share their consumption data with the PARENT platform, where we offer comparisons according to the relative size of the family unit and total m<sup>2</sup> of the house. We also anticipate that participants will be able to accept small challenges to reduce their electricity consumption and engage in their community through the platform. Accepting and completing a challenge gains you points, which translate into small prizes distributed during the pilot workshops.



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## Differences

It is clear that the geographical location of the pilots (e.g. the latitude and proximity of a city to the sea) impact energy consumption patterns. Winters in Norway are harsher than in the Netherlands and Belgium. At the same time, we might learn that houses are better insulated to protect against the cold. Further, socio-economic differences are evident not so much between as within the various pilots. Renters will not have as many means of changing their consumption as owners do. Yet at the same time, we believe that many small behavioural changes can make a big difference too. Finally, perhaps most distinctive for this project, the collaboration with local authorities and the recruitment processes differ quite radically between pilots. Brussels involves local authorities very closely in the preparation and execution of the pilot, Bergen relies on a mix of top-down and bottom-up approaches for engagement and involvement, and Amsterdam has recruited participants mainly by snowballing technique (word-of-mouth).

## Brussels

The pilot in Brussels involves not one, but two local communities: **Forest** is located close to the city centre of Brussels, is densely populated and multi-cultural, and **Watermael-Boitsfort** lies on the outskirts of the city, adjacent to the forest to the south and east of Brussels, and is generally perceived as one of the “wealthier” communes of Brussels. The pilot mainly targets households as domestic electric consumers. Without pro-actively seeking to include households equipped with solar panels (*prosumers*), they have been interested and thus included in the pilot as well. The Brussels pilot seeks to involve the local authorities as much as possible. The pilot is viewed as a joint initiative and their collaboration is crucial for the recruitment of participants and organization of the pilot workshops. Feedback on participants’ pilot experience is primarily gathered through surveys and workshops. The Living Lab sessions serve as a means to discuss topics raised in the workshops in further detail and to network with relevant local energy stakeholders.

## Bergen

The pilot in Bergen involves a hybrid bottom-up and top-down approach for the engagement and involvement of the local context. Geographically, the pilot covers the area of the municipality of Bergen. Located on the southern-west coast of Norway, it is the second biggest and most populated city of the country. The pilot targets mainly households as domestic electric consumers. However, as the diffusion of private photovoltaic panels (PV) recently started to increase, the pilot also envisions the participation of *prosumer* households. Engagement at the level of energy local stakeholders is achieved through the three half-day round-table (Living Lab) sessions, where a heterogeneous set of local actors (municipality, SMEs, NGOs) will take part. For what concerns data generation and gathering activities, pilot participants will be involved in focus group and interview sessions (beside the surveys envisioned for the platform).

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## Amsterdam

The pilot in Amsterdam has grown by word-of-mouth within a community of houseboat owners docked on Borneo island. This initial group of users have installed solar panels on their houseboats, with the ambition to become independent from the energy grid. They participate in the PARENT project to gain (better) insight not only into their consumption, but also their production patterns. The Amsterdam team envisages to extend the pilot to other residents on Borneo island as well. Informal contacts are paramount to this pilot's bottom-up approach of recruitment and engagement.

### 2.4 Determine responsibilities of project partners

Early contacts with local project partners is advisable in order to establish a clear working relationship. For this purpose, a sample letter introducing the project and an overview of expected engagements for local partners was developed and provided to the project consortium. In particular, local partners are most closely involved in the following five tasks: the identification, selection, recruitment of and communication with the user groups (pilots, D1.1, D6.1-5); the determination of regulatory requirements (legal framework, D2.2); the determination of platform system requirements (technological constraints, D5.1); the identification, selection, recruitment of and communication with focus groups (living labs, D7.1-2), and the contribution to analysis and communication of final recommendations (D9.1-2).

### 2.5 Acquire equipment necessary to run pilots

Research in the early stages of the project revealed that it would not be possible to use smart meters in the city pilots (D1.4). This instigated a process of testing multiple sub-metering devices to find the solution most suitable for our purposes (D1.3). All three cities have decided to acquire the energy monitor Smappee.

### 2.6 Set forth conditions for evaluating pilots results via Living Labs

A sub-set of engaged participants along with local, technical and energy experts will meet in Living Labs to evaluate and co-design pilot improvements (see D7.1). While we will receive feedback through questionnaires and start to brainstorm about improvements for the platform in the pilot workshops, this needs to be followed up with a smaller group of participants and other relevant local stakeholders. We envisage that the Living Labs can serve to discuss what type of tips would be useful to provide, what events are taking place locally, which features we might add to the technical platform & newsletter, what incentives we could provide for continued engagement, and more. These discussions can be both very detailed (and therefore local, e.g. do the meeting times/locations work?), as well as reflective on broader trends (e.g. how can you stimulate engagement over a long period of time?). Please note more broadly that D4.6 provides an overview of the key performance indicators for evaluating the PARENT project (pilots, Living Labs and general project-related).

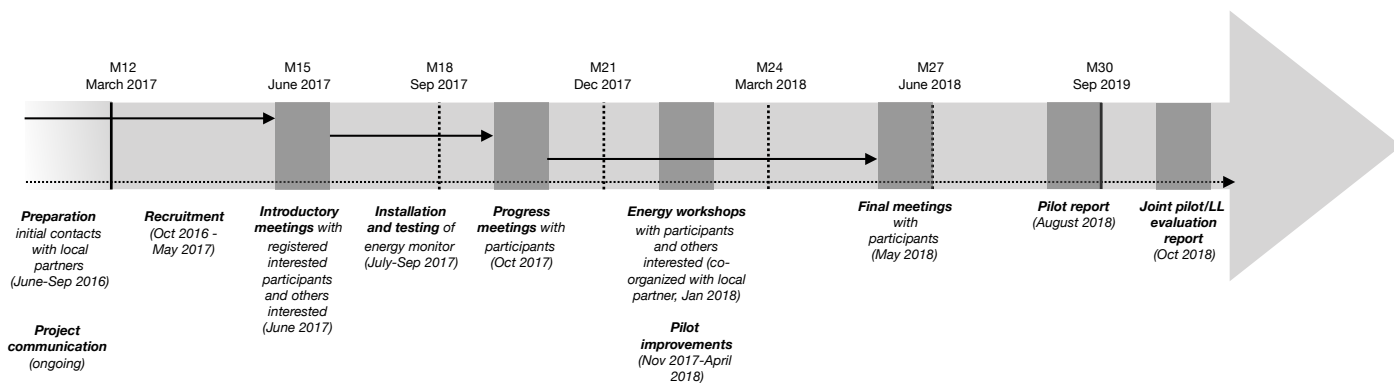
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## 2.7 Develop a template for consent for participation in research

On the basis of D2.1-2.2, a consent form for participation in the pilots has been developed, taking into account ethical, legal and otherwise regulatory requirements in each of the pilot cities. This will be translated into all relevant languages and expounded upon during the introductory meeting with participants, in order to ensure understanding of the rights and responsibilities when partaking in the pilots.

## 3 Pilot timeline

The following timeline describes the steps taken/anticipated in organizing the pilot in Brussels. Although timing may differ between the various pilots, the sequence and number of steps described are similar. WP6 runs from March 2017 through September 2018 (M12-30).



### Preparation

#### 1. Project communication – May 2016 – ongoing

- Related to 2.1 Ensure observance with RRI (involvement and engagement, trust building)
- Development of communication with various audiences in mind
  - General audience: [project website](#)
  - Local partners: introductory letters, short project description, requested commitments
  - Citizens: long and short project descriptions

#### 2. Initial contacts with local partners – June – September 2016

- Related to 2.3 Adjust pilots to local conditions, 2.4 Determine responsibilities of project partners
- Emails/visits to local partners
- Introduction of project and establishing working relationship

#### 3. Recruitment – October 2016 – June 2017

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- *Related to 2.1 Ensure observance of RRI (involvement and engagement, trust building), 2.2 Guarantee representativeness of households*
  - Communication through local partners
  - Emails/visits to civil society groups
  - Participation in related local events
  - Distribution of flyers
  - Recruitment through interested participants (word of mouth)

## Stage 1

### **4. Introductory meetings in each commune – June 2017**

*Audience: registered interested participants and others interested*

*Aim: launch the pilot, provide information on the project, start building community*

- *Related to 2.1 Ensure observance of RRI (involvement and engagement, trust building), 2.2 Guarantee representativeness of households, 2.7 Develop template for consent for participation in research*
- Information on project, energy monitor, community engagement
- Information on commitment requested from households
  - Install the energy monitor
  - Share consumption data
  - Respond to questionnaires (max. 1 questionnaire per month)
  - (Optionally) participate in living labs and/or follow up meetings (2-3 meetings over 12 month period)
- Information on reasons to participate
- Consent form
- User clustering questionnaire
- Ice breaking game and refreshments
- Organized twice (weekday evening and Saturday afternoon) in each commune to target different audiences

### **5. Installation of the energy monitor – July - August 2017**

- *Related to 2.1 Ensure observance of RRI (engagement, empowerment, spontaneity and realism), 2.5 Acquire equipment necessary to run pilots*
- Participants install energy monitor themselves
- Coordinate installation with electrician where necessary

### **6. Testing of the tool and data – July - September 2017**

- *Newsletter related to 2.1 Ensure observance of RRI (engagement, trust building, empowerment)*
- No intervention
- Except bimonthly (every two weeks) newsletter on performance, information on local energy-related events and tips

## Stage 2

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## 7. Progress meeting – October 2017

*Audience: pilot participants*

*Aim: receive participants' feedback on first experiences, provide information on energy efficiency, continue to build community*

- *Related to 2.1 Ensure observance of RRI (engagement, trust building, empowerment, spontaneity and realism), 2.6 Set forth conditions for evaluating pilot results*
- Questionnaire on use of energy monitor and suggestions for improvement
- Information session on tips for easy energy saving
- Game and refreshments

## 8. Continuation of pilot with improvements – November 2017 - April 2018

- *Related to 2.1 Ensure observance of RRI (engagement, trust building, empowerment, spontaneity and realism), 2.6 Set forth conditions for evaluating pilot results*
- Bimonthly newsletter on performance, information on local energy-related events, tips and comparison with other households
- Monthly questionnaire, game, engagement technique – bidirectional
- Installation of version 2 of tool (if possible with additional features)

## 9. Energy workshop – January 2018

*Audience: pilot participants and others interested*

*Aim: maintain community, provide information on energy efficiency*

- *Related to 2.1 Ensure observance of RRI (engagement, trust building, empowerment)*
- "Extra" and ideally organized by local partner
- Unless we have version 3 of tool and want to discuss/train, alongside a user experience questionnaire

## 10. Final meeting – May 2018

*Audience: pilot participants*

*Aim: receive participants' feedback on the pilot*

- *Related to 2.1 Ensure observance of RRI (engagement, trust building, empowerment, spontaneity and realism), 2.6 Set forth conditions for evaluating pilot results*
- Thank you and continuation of using the tool
- Questionnaire on the use of energy monitor, tool, engagement techniques, and suggestions for improvement
- Game and refreshments
- Participants retain energy monitor as a reward

## 11. Report – August & October 2018

- *Related to 2.1 Ensure observance of RRI (engagement, trust building), 2.3 Adjust pilots to local conditions, 2.6 Set forth conditions for evaluating pilot results*

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- Pilot report and joint pilot/Living Lab evaluation report
  - Follow-up with participants, citizen groups and local partners to communicate project results

## 4 Conclusion

The aim of the pilot protocol is to provide guidance in the preparation and execution of the pilots in Belgium, the Netherlands and Norway. Common considerations, dealing especially with social acceptability and legal requirements, are spelled out and a timeline for the preparatory, initial and advanced stages of the pilot are provided.

Let the fun begin!