# Project PARENT (RBC/ 2016 EURB 3B)

## Activity Report

## (01/03/17 → 28/02/18)

## General progress

In this second year of the project, all members of the team are steadily continuing work on their specific tasks as required by the Description of Work. As outlined in the previous period, large efforts were made in management tasks during the first year of the project, due to the departure of one of our partners (Enerbyte). This has had ramifications for the project's impact and yet we have been able to mitigate the direst of these consequences through realigning expectations and redirecting resources, as mentioned in the previous activity report submitted to Innoviris, as well as the report submitted to the JPI team some time after passing the 18-month mark in the project. Much of the effort in this period has gone into developing and nurturing the participant community in all three cities involved in the project.

Coordination

This second year of the project saw a more rigorous and systematic coordination role being taken across all partners, to the extent that is possible within both Brussels and our partner cities (Bergen and Amsterdam). In addition to the physical consortium meeting held in May 2017 in Amsterdam, regular consortium calls have been taking place – at the rate of roughly once every five/six weeks. This additional effort has been required due to the fact that there were personnel changes in one of the remaining partners (SVT in Bergen), and needs required that more information was shared amongst the pilot coordinators. Follow up meetings have been taking place, particularly between the UU and VUB.

A physical consortium meeting is planned for May 2018 in Bergen. The final date is yet to be fixed by the University of Bergen team.

Only one milestone was reached this reporting period, which is completely in line with project planning. MS5 (Development of the PARENT Platform). This has been achieved. The following figure shows a screenshot of one of the pages of the platform.
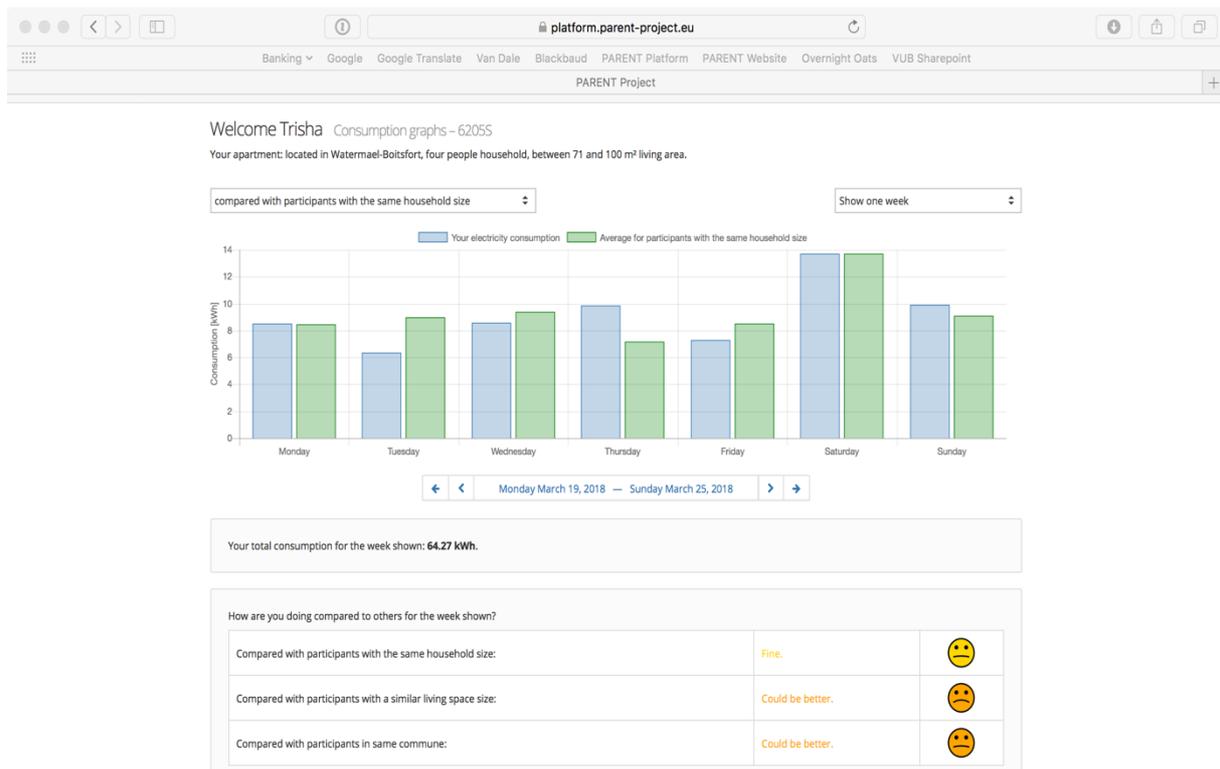
<u>Platform, pilots and living labs</u>
As will be noted in BluePlanet's separate report, the coordination team are incredibly grateful to them for taking up some of the 'effort' in development of the platform, which they have done with willingness and enthusiasm. The second version of the platform (including user challenges and a leaderboard) is planned for roll out in the coming weeks.

As identified in more detail below, the pilots and living labs have been developing. In Brussels, the team has been working together with the local authorities (in Forest and Watermael-Boitsfort) to ensure political support. Newsletters and events have been organised, and have been receiving an acceptable level of interaction from the project's participants (citizens). There have been lengthy (yet manageable) delays in technology roll-out, given that we needed to call upon the services of two different electricians to help install devices in citizens' homes: this was not foreseen in the project planning, but we have been able to accommodate this in our resource allocation and timing. Future challenges that need to be addressed include enhancing citizen engagement and motivating sustainable use of the platform: the development of the second version of the platform, including challenges and a leaderboard, should go some way to addressing this.

<u>Ethics and GDPR</u>
Work has continued on ensuring GDPR and other legal compliance issues, as well as addressing ethically-responsible research, all with exploitation of the platform and the community in mind, once the project financing comes to an end.

<u>Dissemination</u>
The project will now enter its third and final year, and we look forward to reaping the fruit of our efforts in the previous two years. Several publications are foreseen, as well as conference participation, and a further development of the business planning. Particular efforts will be made in the short term to interact with the Urban JPI team, as well as other elements in the Brussels Region, to communicate our scientific and practical outputs to a broad constituency.

**Request for change**
One major change to the project planning is proposed here, and we look forward to discussing this with the Innoviris project manager. The final conference of the project was initially planned for October 2018. This date is suboptimal for three major reasons:
1. Municipal elections take place in the Brussels region this month, which means that politicians will be unable to participate. It also seems opportune to use the new mandates of the elected 'echevins' to publicise the project, hence we propose to move the final PARENT conference to a date in Q1 2019.
2. Given the delays in technology roll out, we have less household energy consumption data than originally planned, making comparison less useful than it could be. Given the effort that has been required in developing and growing the community, we also have a concern about the continuation of the platform once the project has finished operating. This is a key objective of the project. To this end, we are developing a plan to introduce a complementary third phase to the pilot process, where we develop a 'hands off' approach to managing the community. This will test sustainability of the platform as well as continuation of the participant community once the project has finished.
3. The partners in the project that are funded from sources outside the Brussels region (Universiteit Utrecht and University of Bergen) all started the project at a later moment than the VUB and Blue Planet.

Given these reasons, we request an extension of the project **with no extra resources required**, until 30 June 2019 (an extension of four months). This will allow us to organize the final conference in collaboration with the new political actors in the Brussels Region; will allow us to collect more data and explore even more engagement techniques with the pilot participants; and finally will give us the possibility to synchronise more effectively with the other partners in the project.

## Table of employees

| Name | Function | Affiliation | Start | End |
|---|---|---|---|---|
| Trisha Meyer | Senior researcher | Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 28/02/2019 |
| Ólöf Söebech | Project researcher | Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 28/02/2019 |
| Klaas Chielens | IT manager | Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 31/01/2018 |
| Jamal Shahin | Project director | Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 28/02/2019 |
| Jacintha Liem | Project Admin | Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 28/02/2019 |
| Alessia Tanas | Project researcher | Law Science Technology & Society (LSTS) – Vrije Universiteit Brussel (VUB) | 01/03/2016 | 31/03/2018 |
| Pradeepan Sarma | Project researcher | Law Science Technology & Society (LSTS) – Vrije Universiteit Brussel (VUB) | 01/10/2017 | 28/02/2019 |

**Budget**

| VUB | Actual Spending to date | Spending for reporting period | Planned spending to date | Comment if major deviation |
|---|---|---|---|---|
| Personnel | 199.395,65 EUR | 99.258,07 EUR | 212.666,67 EUR | See financial report for figures |
| Running costs | 7.777,54 EUR | 1.840,19 | 10.000 EUR | |
| Equipment costs | 39.893,89 EUR | 35.396,36 EUR | 48.000 EUR | |
| Informatics costs | 4.796,07 EUR | 1.016.39 | 5.500,00 EUR | |

**WP0: Management**

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| *General status* <br> ☐Late <br> ☒On Track <br> ☐Beyond Expectations |
| *Detail here the progress with respect to the last period* <br> Work continued on the Data Management Plan, which has gone through several iterations, was finalized (D0.4) and is being monitored by Deepan Sarma. All deliverables submitted in this period have gone through a quality check, and are either awaiting final review or have been finalized. After the end of the first reporting period, a Quality Management Plan was installed, to ensure timely and useful delivery of reports in the project. The steps outlined in the 'QMP-Lite' are: <br> 1. Submission of **draft final version** of the deliverable to Jacintha and Jamal at the beginning of the delivery month. <br> 2. Jamal provides **feedback** on the content and develops the **executive/project/management summaries** of the deliverable <br> 3. If deemed necessary, the updated version can be circulated to other partners for **additional feedback**. <br> 4. Based on additional feedback, the lead author can refine both the deliverable and the summaries. <br> 5. Once finalised, the final document is to be sent to Jamal and Jacintha, in the **PARENT template** (Dropbox/PARENT/06 Den of deliverables/Template deliverables.docx) in both **Word and PDF** version. <br> 6. In case of agreement between coordinator and lead author, the deliverable is sent to the **External Advisory Board** for comments. |
| *Detail difficulties if any* <br> No problems specific to Project Management have been encountered, beyond those that were already expressed in the first interim report. BluePlanet has done an exceptionally good job of 'stepping into the breach' left by the departure of Enerbyte, and have taken on the role of platform developer. At no additional cost to the project. |
| *List here the objectives for the next period* <br> As mentioned in the 'general progress' section above, we wish to extend the project by four months, at no additional cost to the funders. This will be the main objective for the next period, as well as successful completion of the project. |

## WP1: State of the Art

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| *General status*<br>☐ Late<br>☐ On Track<br>☒ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>All deliverables were completed in the first reporting period. Work has continued on elaborating D1.1, the stakeholder map. |
| *Detail difficulties if any*<br>As all deliverables were completed during the first project reporting period, there have been no difficulties. |
| *List here the objectives for the next period*<br>To exploit the research executed in this WP for scientific communication, and further elaboration of D1.1, with the support of the participants in our Living Labs. |

## WP2: Regulatory requirements

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| *General status*<br>☐ Late<br>☒ On Track<br>☐ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>D2.1 and D2.2 having been completed in the previous period, T2.2 "Impact Assessment against ELSA Requirements" is currently underway. It has gradually been developed in interaction with other project partners and will be completed in the form of D2.3, which is expected to be completed in M26 of the project (April 2018). Once this is completed, T2.3 "Continuous monitoring of the ELSA Requirements", i.e. D2.4 and D2.5, can begin. |
| *Detail difficulties if any*<br>The departure of personnel from one of the partners (SVT) made the completion of tasks associated with T2.2 more difficult. Additionally, as is common in multi-disciplinary consortium projects, there are some difficulties with respect to alignment of working methods and practices, especially given the restructuring of the project partner composition midway, and this has an effect on the completion of some of the tasks (T0.3 and T2.2) which require a good deal of partner output. Consequently, overcoming these challenges has increased the difficulty of the completion of these tasks and its expected output, D2.3. |
| *List here the objectives for the next period*<br>The main objective for the next period is to monitor the implementation of the recommendations described in D2.3 in T2.3, producing D2.4 and D2.5 "Report on monitoring of observance of ELSA requirements". |

## WP3: Societal acceptability

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| *General status* <br> ☐Late <br> ☒On Track <br> ☐Beyond Expectations |
| *Detail here the progress with respect to the last period* <br> Deliverable 3.1 and 3.2 were delivered and accepted by the coordinator. |
| *Detail difficulties if any* <br> None |
| *List here the objectives for the next period* <br> This workpackage is effectively complete, although monitoring and revision of the deliverables submitted is foreseen prior to finalization of the project. |

## WP4: Stakeholder engagement

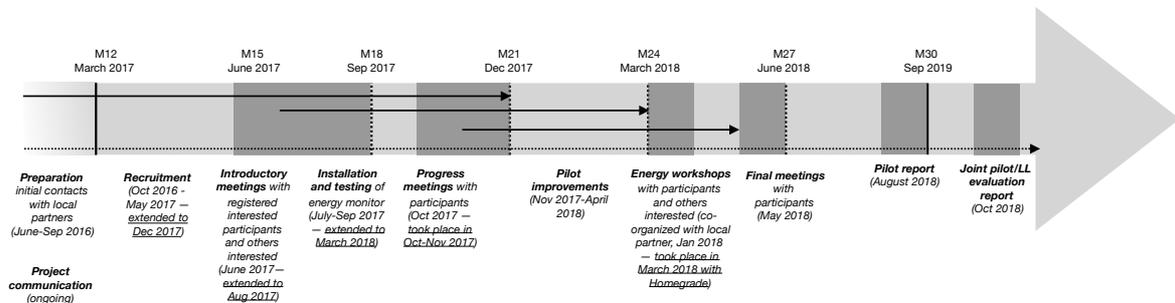| |
|---|
| *General status* <br> ☐Late <br> ☒On Track <br> ☐Beyond Expectations |
| *Detail here the progress with respect to the last period* <br> WP4 organised several Skype meetings with SVT and Utrecht University to develop the gamification plan, the user clustering questionnaire as well as the practical implementation of the platform elements and questionnaire. This continued throughout the period, with our last Skype meeting held with Utrecht in January 2018 to discuss elements of the 2nd version of the online platform. <br><br> D4.1 was accepted by the coordinator, after revisions. <br> D4.2 and D4.3 were combined (after discussion with the coordinator) and have also been accepted by the coordinator. <br> D4.4 was submitted and has been used to structure the pilots. A final iteration of this deliverable will be made in due course. <br> D4.5 and 4.6 were also accepted by the coordinator in this reporting period. |
| *Detail difficulties if any* <br> None specific to this work package. |
| *List here the objectives for the next period* <br> Final iterations of the deliverables, building on experiences carried out in executing stakeholder engagement, will be published on our website after the summer. |

## WP5: VEA

*General status*
☒ Late (against original expectations)
☒ On Track (revised expectations)
☐ Beyond Expectations

*Detail here the progress with respect to the last period*
Close collaboration with Blue Planet has taken place. Three face-to-face meetings, several telephone meetings and frequent email exchanges and the online platform was in co-development throughout the period. All features of the online platform are created and tested in close collaboration between VUB and BPL.

As the VUB assists SVT and Amsterdam in managing the online platform and the participants of their pilots, frequent email exchanges took place for adding participants to the platform and acting as a help desk to explain the functioning of the platform to our partners.

*Detail difficulties if any*
None

*List here the objectives for the next period*
To develop the second version of the platform, including the various stakeholder engagement (gamification) features that are currently being developed, in accordance with the respective deliverables in WP4. This should be ready in M25/26 for roll out to the participants.

## WP6: Pilots

*General status*
☐ Late
☒ On Track
☐ Beyond Expectations

*Detail here the progress with respect to the last period*
Recruitment
The pilots were launched in this reporting period. A huge amount of effort has gone into project communication with citizens, with many (not foreseen) events taking place. We received 192 expressions of interest in participating in the project. After eight information sessions in both communes and online, 46 contacts with individuals, participation in two public events at both communes, six 'open door' moments held at the two communes, to name but a few, 137 participants agreed to sign up to receive a device and access to our platform. 18 of these participants have subsequently decided to not install the energy monitor, either for technical (14) or non-technical (4) reasons. However they continue to participate in the pilot in other ways.

Engagement
On the PARENT platform, participants have access to their energy consumption compared to others with similar household characteristics (household size, surface area, commune). A regular newsletter is sent to the participants, detailing their energy consumption, providing energy reduction tips and highlighting sustainability-related news from their locality (ten have been sent so far). Further we have organized five different workshops across the two communes. In this context, the PARENT pilot in Brussels co-organized two workshops with Homegrade in order to

encourage citizens to become more aware of measures that can be made to reduce household energy consumption.

The following graphic outlines the progress of the pilots. The timeline indicates where activities took longer than anticipated in the pilot protocol.



| M12 March 2017 | M15 June 2017 | M18 Sep 2017 | M21 Dec 2017 | M24 March 2018 | M27 June 2018 | M30 Sep 2019 |

*Preparation* initial contacts with local partners *(June-Sep 2016)*

*Project communication (ongoing)*

*Recruitment (Oct 2016 - May 2017 — extended to Dec 2017)*

*Introductory meetings* with registered interested participants and others interested *(June 2017— extended to Aug 2017)*

*Installation and testing* of energy monitor *(July-Sep 2017 — extended to March 2018)*

*Progress meetings* with participants *(Oct 2017 — took place in Oct-Nov 2017)*

*Pilot improvements (Nov 2017-April 2018)*

*Energy workshops* with participants and others interested (co-organized with local partner, Jan 2018 — took place in March 2018 with Homegrade)

*Final meetings* with participants *(May 2018)*

*Pilot report (August 2018)*

*Joint pilot/LL evaluation report (Oct 2018)*

D6.1 was delivered and accepted by the coordinator. See annex for the executive summary.

*Detail difficulties if any*
The biggest difficulties have been technical, and are centred around the choice of technology that we made after analysis of the various options available (in D1.5). This was not foreseen by the project, and required additional intervention from two different electricians to ensure that willing participants were able to engage in our project.
Whilst this has not distracted from the quality of the participation, the technical delays have worked unfortunately towards slowing down participant access to our platform as the Smappee devices could not be installed without expert intervention, thereby giving us less time to focus on engagement, behavioural change and understanding potentials for exploitation. Furthermore, we are currently developing a plan to introduce a complementary third phase to the pilot process, where we develop a 'hands off' approach to managing the community, which we foresee as a potential barrier to continuation of the platform once the project has finished operating. This will test sustainability of the platform as well as continuation of the participant community once the project has finished. This is one of the reasons why we request an extension of the project end-date (see 'general progress' section of this report).

*List here the objectives for the next period*
To continue to engage with the citizens through the various activities underway. Deliverables 6.2, 6.4 and 6.5 will be submitted in M30 (August 2018) in their preliminary form, with final submission to be made at the end of the project.

## WP7: Living Labs

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| *General status*<br>☐ Late<br>☒ On Track<br>☐ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>D7.1 has been accepted by the coordinator and has been implemented by all partners. The living lab 'community' has been established in Brussels, and two meetings have already taken place with these participants. A final meeting will take place in May 2018, and this will focus on sustainability of the platform.<br>D7.2 (Brussels), the first report from the first living lab in Brussels, has been submitted and accepted by the coordinator. See annex for summary. Given the lack of synchronization across partners, the full deliverable D7.2 has not yet been prepared. |
| *Detail difficulties if any*<br>None to report. |
| *List here the objectives for the next period*<br>To complete the third and final living lab, and to ensure that the community that has been built around these meetings continue to collaborate. |

## WP8: Results and analyses

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| *General status*<br>☐ Late<br>☒ On Track<br>☐ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>**This WP does not start until M30 of the project**, although progress has been made towards launching the WP at that moment. Efforts carried out, and preliminary results already gathered, in WP4 and WP5 clearly point towards key issues that need to be raised in this WP. |
| *Detail difficulties if any*<br>None |
| *List here the objectives for the next period*<br>To start the WP and to ensure that the partners are all engaged in supporting the platform. One of the key issues to raise at the next physical consortium meeting will be how we wish to address this WP. |

## WP9: Recommendations

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| *General status*<br>☐ Late<br>☒ On Track<br>☐ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>Work does not officially start in this WP until M29 of the project. However, a draft programme for the final conference has already been proposed, in discussion with staff at the VUB. As mentioned in the 'general progress' section above, we do suggest to move the conference to a later date, given the political situation in Brussels at that time (elections). |
| *Detail difficulties if any*<br>No specific difficulties, apart from the conference date. |
| *List here the objectives for the next period*<br>Agree with Innoviris to shift the final conference date to late-Q1 2019, thereby allowing us to discuss with new political actors, gather sufficient data from our participants, and synchronise our final activities closer to those of our partners. |

## WP10: Dissemination

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| *General status*<br>☐ Late<br>☒ On Track<br>☐ Beyond Expectations |
| *Detail here the progress with respect to the last period*<br>In addition to general project communication through the communes, we have also established a 'web team' that will further enhance our project website ([www.parent-project.eu](www.parent-project.eu)), creating a space for project deliverables and other project information.<br>Furthermore, several (scientific) publications will now emerge from early work carried out as part of the project, and as reflection on the ongoing pilot exercises. See Valorization activities section below for more information. These include:<br><br>**Participation in conferences**: SVT (University of Bergen) are participating in two conferences in the upcoming reporting period, having prepared papers for these; VUB will participate in the IAMCR conference in Oregon, with a paper describing the pilot process in Brussels, and participated in the Cyberlaw conference in Brno, Czech republic in October 2017.<br>**Journal articles**: VUB has been invited to prepare a paper for *Media and Communication* on smart cities, and will focus on the PARENT pilot experience. |
| *Detail difficulties if any*<br>None |
| *List here the objectives for the next period*<br>To continue to disseminate the project through our web communication channels (project website, LinkedIn page, and through scientific (and policy) conferences. We also intend to increase our level of activity in the Urban JPI initiative framework. |

## Valorization activities (selection)

Briefly, the project has carried out the following activities beyond interaction with our participants **in the Brussels region**:

- Presence at **Forest** 'Fête de Quartier Marconi' May 2017
  Presence at **Watermael-Boitsfort** 'Rendez-Vous Energie' December 2017

Additionally, the Project has been mentioned in the communal newsletters on several occasions in the past reporting period.

Staff from the VUB have also talked about PARENT at various events, including:

- VAL-EUR Conference, Université Libre de Bruxelles, March 2017.
- Cyberlaw conference, Masaryk University, Brno, Czech Republic, October 2017.

Papers that will be prepared by the VUB team include:

- Shahin, J., Meyer, T. and Söebech, O. (2018). *Flagship without a flotilla? A case study of a 'smart city' project to reduce household energy consumption.* Media and Communication, 6(4) Winter 2018.
- Meyer, T., Söebech, O. & Shahin, J. (2018). *Keeping it real. Lessons on implementing sustainable consumption policy at a local level.* IAMCR: Reimagining sustainability: communication and media research in a changing world. 20-24 June 2018.

This does not include activities led by the other partners in the consortium.

# Annex: Executive Summaries WP3 deliverables

**D3.1 : Scoping paper on societal acceptability**

In studying the social and normative implications of smart metering and the Platform to be developed by PARENT, we have consciously adapted the now widely used terms "social acceptability" and "social acceptance". While not arguing for a clear cut distinction between the two concepts, the former may be seen to refer more to the in-principle legitimacy and usefulness of smart metering devices, the second more to how people actually perceive and interact with such devices and their related policies. Yet, none of these terms are un-problematic, and some initial clarifications and words of warning should be introduced from the outset. The aim of this deliverable is not to provide a theoretical treatise on the topic of smart metering and society, but it introduces theoretical elements (and hesitations) insofar as they seem necessary for our practical purposes of studying and understanding social acceptability in three European cities, and (centrally) of *interacting with users*.

**D3.2 : Social acceptability protocol for living labs**

The *Social acceptability protocol for Living Labs* (D3.2) - provides guiding principles for the implementation and running of Living Labs in the PARENT Project's Pilots. These principles take into account concerns that relate to the social acceptability of PARENT platform and also more broadly to PARENT interventions in the Pilots and the Living Labs. The document provides actionable tools for gathering data about social acceptability through the Living Labs. Three annexes are provided that should be used to help i) design stakeholder engagement in the Living Labs; ii) assess whether social acceptability concerns were addressed successfully in the Living Labs, and iii) systematically codify the knowledge gained in the three LLs to ensure learning can be transferred beyond the life of the project.

The deliverable is structured as follows: after having defined the scope and objectives of the *Social Acceptability Protocol*, it provides a brief framing of how Living Labs are conceived within PARENT. Subsequently, there follows a detailed section that defines social acceptability both theoretically and practically. A brief concluding section summarizes these definitions and recaps the purpose of the annexes that follow. The three annexes described above follow. These constitute the concrete tools developed by the deliverable and concerns: guidelines for social acceptability of living labs; assessment of social acceptability of living labs; discussion guidelines for social acceptability of the Platform.

Project summary
The deliverable (D3.2) has been developed within the PARENT project for exploring societal acceptability of the PARENT platform in the sites of investigation (*i.e.* pilots, WP6), and targeted towards more responsible governance of energy monitoring systems. The protocol is based on: (1) existing knowledge about societal acceptability of these systems and (more generally) renewable energies and (2) results from the EPINET project into societal acceptability thereof, sorted according to the six pillars of Responsible Research and Innovation (RRI) with additional attention paid to sustainability and personal data protection. The keys considered are: Governance; Public engagements; Gender equality; Open Access/Open Science; Ethics; Sustainability; and Privacy and personal data protection.

The social acceptability protocol developed by this deliverable is intended to be used within the Living Labs (WP7), through its adoption in the Living Labs protocol (D7.1), and as input to (value-sensitive and interactive) design of the Platform (T5.2-T5.4). Finally, this deliverable complements and relates to the ELSA frame (Ethical, Legal, Social Aspects) developed in D2.1 – *Definition of the ELSA benchmark* – and builds on the insights of D3.1 - *Scoping paper on societal acceptability and RRI*.

# Annex: Executive Summaries WP4 deliverables

**D4.1 : Qualitative appreciation of values, need and preferences of stakeholders**

The objective of this deliverable is to support elicitation of stakeholder values, needs and preferences as a basis for a process of iterative design which would result in a real two-way communication between stakeholders and PARENT, namely through the Living Labs and the platform. In line with the project developments and the structural changes linked with its implementation, an iterative design of the platform, in the strict, technical sense, will be translated into a broader co-construction of the PARENT's intervention in the pilot sites, as clarified by Deliverable 3.2, 6.1 and 7.1.

Therefore, this deliverable will develop considerations in support of a critical (or conscious) reflection on the challenges of identifying and defining values, needs or preferences for a technological platform and its core design feature of gamification in the energy domain.

The deliverable includes a section on values as contingent, situated and unknowable in advance, a priori. It also provides a section on gamification that explains the origins of the phenomenon and provides a few theoretical framings to reflect on it. Finally, the deliverable links the two perspectives, on values and on gamification, to gather critical thinking on gamification, energy and PARENT objectives.

**D4.2/4.3 : User questionnaire/analysis report**

The purpose of this deliverable is to provide a clustering method and a questionnaire given to participants at the beginning of the pilot. The questionnaire responses will allow us to define the pilot participant group for two key purposes.

First, there is a clustering questionnaire to provide participants a relatively fair comparison for their own electricity consumption. Four clustering questions, all relating to *Housing characteristics,* were added to help group the participants in a way to be able to provide them with meaningful comparison with other participants in similar situations.

The second clustering questionnaire covers the characteristics: *Housing characteristics*, *sociodemographic characteristics* and *attitudes and beliefs*. This questionnaire goes deeper into understanding a person's household, lifestyle, attitudes and values. The aim of the questions is to see where she/he places themselves with regards to technology, environmental consciousness and social engagement with the intention to explore whether we can identify key characteristics of engaged participation I the project- and hence receptiveness to similar approaches.

This current deliverable (D4.2) explains how the questionnaire was designed, for what purpose and how it was implemented. The Clustering may feed into WP 10 on Dissemination and Exploitation, in particular for T.10.3 Exploitation, where the plan is to allow for clustered group purchasing.

**D4.4 : Behaviour change toolkit**

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 into behavioural 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.

**D4.5 : Gamification plan**

This document is intended to give guidelines on how to develop specific gamification features for a project where participants try to reduce their energy consumption and save money, participate in local governance and connect with their neighbours (PARENT). The gamification plan is based on a previous research document D1.5 Handbook of best practices in gamification under WP1 – State-of-the-Art of the PARENT project where data and information was collected on gamification in theory and practice.

In this gamification plan, we first expound upon the five specific game elements selected as critical to successful gamification practices in relation to the target group and the project aims. These are:

- Information provision
- Personal performance /status
- Rewards (extrinsic value motivators)
- Social interaction/social connection/Group performance
- Off platform game elements

Each game element has key features and prerequisite requirements for functioning properly in implementation. These are briefly highlighted.

Finally, an overview assembles the measures in one table specifying gamification elements of high importance, desirable features and extras- those that would be nice to have if the project had a substantial budget or partnering organisations that could implement.

Project Summary
Intention of deliverable: This deliverable prepares for the development of gamification activities within the project. It is heavily based on the knowledge collected in D1.5 Handbook of best practices in gamification under WP1 – State-of-the-Art of the PARENT. It specifies game designs and the main ways to implement those. As a document, it aims to be a practical plan for implementation, allowing still for flexibility, taking into consideration that the project is a research project and as such, the plan may evolve. It also acknowledges that with limited resources, the implementation of the plan may be partial.

Actions resulting from deliverable: This deliverable allows for the development of online gamification as well as offline. It allows for some measurement leading to KPIs as well. It provides guidelines for online platform development, email newsletters and the pilot executions.

**D4.6 : Key Performance Indicators for PARENT and the PARENT Platform**

As the final task in WP4- Strategies for stakeholder engagement, we take a closer look at the evaluation of the project in indeed reaching stakeholder engagement. Task 4.5: Key Performance Indicators (KPIs) is led by the VUB and has received input from project partners SVT.

This document presents a plan for evaluation the progress and outcomes of the PARENT project using 40 KPIs that focus on the different aspects of the project and compared with the stated goal. In defining theses KPIs, we examined what the project sets out to do, both on a general level through the Description of Work, and at a more specific level through deliverable reports. The project plan has evolved and changed slightly over time, with a change of technology partner and a stronger focus on community building and participation, and the KPIs reflect that change. Further changes may require additional KPIs to be inserted towards the end of the project.

The KPIs should be used not only to evaluate the project, but also act as a guide and a check list during the rollout of the project when possible. They could also serve as a guide for other projects, and will be revised at the end of the project in order to provide recommendations on how to organise citizen involvement in urban-scale projects.

# Annex: Executive Summaries WP6 deliverables

**D6.1 : Pilot protocol**

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 at least twelve months, preceded by a preparation/recruitment period and followed by an evaluation/reporting period.

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).

# Annex: Executive Summaries WP7 deliverables

**D7.1 : Living Lab Protocol**

The PARENT Living Labs are meant to be an innovative instrument to ensure continuous participation of the stakeholders in the co-development of the PARENT platform and PARENT final recommendations. This brings Living Labs (LL) very close to a methodology for the collaborative construction, or co-design, of innovation through the involvement of users and stakeholders in real-life testing and deliberation. This protocol has the objective to outline elements of a common approach for the LL in PARENT cities (Amsterdam, Bergen, and Brussels).

The document identifies and defines the practical aspects that concern the organization and implementation of LL in the local contexts. This protocol relies on the works done in other areas of PARENT. In particular, it puts into practice the principles set forward about social acceptability (WP3), it elaborates further the considerations on the values and needs tied to gamification (WP4), and it directly relates to the developments of the pilots (WP6). Furthermore, it recognizes that differences in local conditions and relations will shape the approach taken. In the following sections, we aim to explain common considerations and steps necessary to launch and conducting the LL.

This deliverable links directly to the following deliverables that have been developed as part of the PARENT Project.

- Deliverable 1.1 – *Mapping the stakeholders.* It includes an initial mapping of the main stakeholders identified for the cities hosting the pilots;
- Deliverable 3.2 – *Social Acceptability protocol for Living Labs*. It includes general considerations and practical annexes on how to organize LL in accordance with the main principles of RRI (Annex 1, D3.2) and how to lever on LL to foster and study social acceptability (Annex 3, D3.2);
- Deliverable 4.1 - *Qualitative appreciation of values, needs and preferences of stakeholders*. It elaborates general considerations on the complexity of designing for gamification while considering stakeholders' values and needs;
- Deliverable 6.1 - *Pilot Protocol*. It provides an overview for the developments of the pilots and their road-map.

**D7.2 (Brussels) : Living lab Report 1**

This Living Labs meeting was the first of three meetings for the "*Comité de pilotage PARENT à Bruxelles*", the overall goal of which is to serve as a place of dialogue on strategies for energy reduction. The subject of the meeting held on January 23, 2018 was "*Que faisons-nous en tant que communauté énergétique à Bruxelles*?" and was specifically directed at exchanging ideas between different energy-related actors in Brussels engaged in citizen-engagement initiatives. The three topics discussed were: i. identification of sustainability initiatives to reduce energy consumption in Brussels; ii. assessing these measures in terms of effort required and impact expected on the part of users; iii. communication strategies and means of citizen recruitment. In practical terms, this was executed through the use of several mapping exercises, followed by group discussion on the outcomes of these activities. The aim was to encourage the participants to actively reflect on the role that their own initiative or organization plays with respect to energy reduction and citizen engagement and to think critically on the efficacy of these practices. The coordinator of the meeting, IES, played a facilitator role in the meeting, guiding the activities but largely allowing participants to deliberate amongst themselves.