

Project PARENT (RBC/ 2016 EURB 3B)

Activity Report

(01/03/16 → 28/02/17)

1. General progress

1.1. Kick-off meeting – 30-31 March 2016

The kick-off meeting was initially scheduled to take place from 29 until 31 March. However, due to the terror attack in Brussels on 21 March, several flights were cancelled and we decided to compress the 3-day meeting into 2 days, i.e. on 30 and 31 March. During these two days, the Work Package (WP) leaders presented the work processes, how their WP will feed both into other WPs and the entire project, and the expectations, risks, and challenges for each of the work packages.

1.2. Consortium Meetings

Brussels – 11 June 2016

The Consortium meeting in June aimed at evaluating the first months of the project, assessing the challenges, and discussing synergies, interactions, and ways forward for our first milestone, due in M6, which aimed at gathering and analysing all relevant background information. Additionally, some management related issues were being discussed: updates on personnel, reporting periods, and the state-of-affairs of the partners' Grant Agreements with their national funding agencies and the Consortium Agreement.

Barcelona – 6-7 September 2016

The second consortium meeting focused on the working processes and lessons learned from the various deliverables that were due in the previous months, the external and internal communication of the project, and the steps forward. The outcome of the meeting resulted in a detailed list of action points for the different partners. During this meeting, the consortium also decided on using the project management online platform (Asana) as a tool to keep track of deliverables, to use Dropbox as a repository for documents, and to have six-weekly conference calls.

Other

As mentioned above, one of the outcomes of the Barcelona consortium meeting was the decision to organise six-weekly conference calls. These meetings give partners the opportunity to report on relevant updates and potential obstacles they foresee in the near future. We have opted to use Calliflower, a tool that allows the consortium to organise conference calls and online meetings. The first conference call only took place in January. In the period between September and December 2016 the Project Director (Shahin) was mainly having bilateral meetings with Enerbyte, other consortium partners, and examining additional options with external stakeholders, as there were a lot of uncertainties regarding their legal status (see section 'personnel' below). Topics discussed during the conference calls in January and February included personnel changes, the selection of the metering devices, and updates on the pilots in the partnering countries.

Phone calls, bilateral discussions

In the first year, discussions took place in different formats, depending on the people involved and aim of the meetings.

In this regard, IES organised several meetings with different parties the involved Brussels Communes, i.e. Forest and Watermael-Boitsfort. The meeting with both communes resulted in their enthusiastic expression of interest to collaborate in various events organised in Brussels to attract citizens to participate in the Brussels pilot.

Moreover, our Project Director (Shahin) organised meetings with project leaders of similar projects in both Belgium and The Netherlands to create synergies and see where our projects overlap, partially to find a solution for the issue with our technical partner (Enerbyte) leaving the Consortium (more detailed information in the Table WPO below).

1.3. Pilots – update

Whilst work was not scheduled to start on the Pilots and Living Labs until M12 of the Project, the VUB team has been proactive in developing and nurturing contacts with the local authorities and also gone to lengths to promote the PARENT initiative. The local authorities have published information about the project in their newsletters, and we have held several meetings with the various stakeholders in the city. See description in Table WP6 below for further information on the pilots.

1.4. List of Milestones

MS 1 – Relevant background information gathered and analysed: involves WP1, WP3, and WP4 – Due in M6

All deliverables for WP1 have been submitted: see annex for executive summaries, project summaries and management summaries of these deliverables. See the tables for WP3 and WP4 for explanations on late delivery of

MS 2 – The impact of PARENT platform assessed against ethical, legal and social acceptance requirements – Due in M12

Deliverables 2.1 and 2.2 have been accepted. However, Milestone 2 can only be fully achieved once the Deliverable for the ELSA Impact Assessment has been submitted. See description of WP2 in the table below.

MS 3 – Functional and non-functional requirements of the PARENT platform defined – Due in M9

The functional requirements of the PARENT platform have been defined by the state of the art study D1.3, the non-functional requirements have been prepared in D2.2. These will be more clearly defined in our consortium meeting, currently scheduled for end-May 2017 (M15).

MS 4 – System architecture of the PARENT platform defined – Due in M9

In collaboration with Enerbyte, and prior to their departure from the project, the consortium agreed to deliver an 'agile' system architecture for the PARENT platform. This means that since we will start the pilots and living labs using third party technologies, the system architecture will be continuously revised as a result of feedback from the users in the living labs, and fully defined by M25 (part-way through the living labs process).

1.5. Personnel

Internal to VUB:

- a) Both maternity leave (for Olof Soebach and Trisha Meyer) and the departure of Enerbyte caused Jamal Shahin to increase temporarily his role in the project in order to try to develop a new strategy to overcome the challenges that arose. **No additional financing will be required from Innoviris** as a result of this.

External to innoviris, but influencing the project :

- b) UiB only started work in earnest at the end of 2016, due to contractual issues.
- c) Enerbyte's effort and funding was removed from the project, due to bankruptcy of the partner.

1.6. Table of employees

Name	Function	Affiliation	Start	End
Jamal Shahin	Project Coordinator	Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB)	01/03/2016	28/02/2019
Trisha Meyer	Senior Researcher	Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB)	01/03/2016	28/02/2019
Ólöf Soebach	Researcher (Pilot Manager)	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	28/02/2019
Jacintha Liem	Project Manager	Institute for European Studies (IES) – Vrije Universiteit Brussel (VUB)	01/03/2016	28/02/2019
Alessia Tanas	Researcher	Law Science Technology & Society (LSTS) – Vrije Universiteit Brussel (VUB)	01/03/2016	28/02/2019

1.7. Budget

VUB	Actual Spending to date	Planned spending to date	Comment if major deviation
Personnel	Mar-Dec 2016: 93.694,31 EUR Jan-Feb 2017: Still awaiting salary invoices VUB	106.333,33 EUR	See financial report for figures

Running costs	5.937,35 EUR	6.050,00 EUR	1 dissemination activity (Amsterdam) + 1 consortium meeting (Barcelona)
Equipment costs	4.497,53 EUR	3.789,47 EUR	only 1 month of WP6 covered in year 1 for the purchase of testing devices (72.000 EUR/19 months)
Informatics costs	3.623,03 EUR	5.500,00 EUR	2 laptops purchased

1.8. WP progress

1.8.1. WP0: Project Management

<p><i>General status</i></p> <p><input type="checkbox"/> Late</p> <p><input checked="" type="checkbox"/> On Track</p> <p><input type="checkbox"/> Beyond Expectations</p>
<p><i>Progress with respect to the last period</i></p> <p>D0.1 (this document) is submitted on time.</p> <p>D0.4, the Data Management Plan, has been drafted, but is in need of revision due to the departure of Enerbyte and the consequences of this for the project. We await the next full physical consortium meeting at the end of May to find out how to proceed with delivering the final Data Management Plan.</p>
<p><i>Difficulties</i></p> <p>In Brief:</p> <ol style="list-style-type: none"> <i>UiB started contributing concretely to the project late in 2016, with only minimal contributions prior to this. This is due to the JPI structure, where funding for staff in UiB was only available from late September onwards, and then hiring procedures took an exceptionally long time.</i> <i>Enerbyte declared bankruptcy in November, effectively reducing their already unstable contribution to the project. All funds have been frozen and are unavailable to the consortium.</i> <i>Maternity leave (Meyer, Soebach) at the VUB also reduced the flexibility available to the VUB, but we have managed to work around this situation until their return.</i> <p>In more detail:</p> <p><i>Enerbyte and Me2</i></p> <p>Enerbyte was the technical partner in our JPI project. They declared bankruptcy in November 2016, nine months into our project.</p> <p>Enerbyte had a 23% share of the total budget of the project, and contributed 29% of the total effort towards the project goals. Their role was to develop the software platform from both the back and front ends, and to execute the Barcelona Pilot and Living Lab. Their major effort was concentrated on WP5, the development of the Virtual Energy Advisor. This was supposed to start in November 2016 and continue throughout the project. Enerbyte was also due to contribute substantially to WP8, to develop dedicated energy use algorithms and strategies for energy management. This was due to take place in the last six months of the project (September 2018-February 2019)</p>

Given that Enerbyte is now unable to contribute to these activities, we need to find alternative solutions for the gaps that now emerge in the project. A brief overview of the gaps will be described.

Gap 1

Support for research on gamification. Enerbyte had done research on gamification in the Spanish context, which it was due to use to contribute to our research on user clustering (T4.5).

Gap 2

Development of the Virtual Energy Advisor (VEA), including development of algorithms that will enable the PARENT platform to develop a fully functioning virtual energy assistant. Enerbyte was due to provide its own application/platform for the basis, and was due to execute development of the tool for the revised VEA. Enerbyte's departure from the project results in one major issue for the Innoviris component of PARENT: there will be no-one to develop the algorithms that are necessary to show that a viable business model can be made out of the results of our research. These were to be designed by Enerbyte in cooperation with Blue Planet, a partner in the project, funded by Innoviris.

Gap 3

Exploitation plan. If the VEA (notably the algorithms) is unable to be developed by Enerbyte, then the consortium has a problem in developing a successful exploitation plan, as, in effect, there is no business model to exploit. Enerbyte was due to contribute to the development of the exploitation plan.

Gap 4

Pilot and Living Lab in Barcelona, pilot and living lab validation. Given that Enerbyte is unable to play a role in the project, the possibilities for continuing the Barcelona pilot are strongly limited. Enerbyte were also supposed to manage the comparative validation of all pilots and living labs across the project.

Objectives for the next period

1. Continue to manage the departure of Enerbyte, by working to find solutions that facilitate the development of the platform and build other solutions highlighted in section 1.5 of this report. For example: Identify innovative solutions: such as involving the FABLAB from the EHB in Brussels for some of the development work on the new platform, in the form of coursework in exchange for credits on their university programme.
2. Continue to manage the relations with the local authorities in Brussels, to ensure that we maximise visibility and ensure policy-relevance of our work.
3. Finalise a revised Consortium Agreement (or an amendment to the original agreement). Currently, the Legal Officer at the VUB is in receipt of a new Consortium Agreement revised by the Project Director (Shahin). We are awaiting feedback from them on this new version (submitted to them on 14 February).

Concerning the gaps described above:

Solution to gap 1

VUB will take up this role in order to ensure that it is completed. We will not request additional resources for this activity.

Proposed solution to gap 2

Contact has been taken up with a Kortrijk-based company, Smappee, who develop and sell a hardware solution that we will probably use for our project (pending legal and ethical review). They also develop their own platform, similar to the one under development at Enerbyte (and thus serves as a direct replacement for the platform under development by Enerbyte for the PARENT project). Initial contact has been made, and their roadmap would enable them to participate in our pilots and living labs. **They do not require funding from Innoviris to offer their platform and to participate in our living labs and pilots.** As they are based in Flanders, they would be ineligible in any case. In addition, their hardware has an established and open API (Application Programming Interface), which allows for software developers to develop supplementary “platforms” for additional features, a process we fully intend to take advantage of through additional connections the VUB has made at the Erasmus Hogeschool Brussels’ FABLAB (especially their BA and MA programmes in communication design).

Additionally, Blue Planet, an established partner in the project, has necessary expertise and experience to fulfil the role of writing the algorithms necessary for the VEA. However, this was not foreseen in the project proposal, where Blue Planet was attributed the role of supervising algorithm development (to be executed by Enerbyte), and working this into an exploitation plan (see Gap 3) for a Brussels-based company. **Blue Planet has expressed an openness to take on the role, thereby ensuring that the ambitions of the project in the Brussels region can be achieved, but this does require additional resource allocation on their side.**

Alternative solution to gap 2

Contact has been taken up with another JPI-funded project, me². This project is carrying out a similar objective to PARENT, and is working in the city of Amsterdam. Hugo Niessing (a non-funded partner in the PARENT project) is engaged with the research team that manages me². Investigations are ongoing as to how the projects can work together. A meeting took place on 8 December 2016 between the two partners (Jamal Shahin and Halldóra Thorsdottir), and further conference calls have been organised with the project directors (Jamal Shahin and René Bohnsack) in December, January and February. There is a possibility to ask me² to help develop algorithms for both their project and ours, and there is a clear opportunity to share pilot methodologies.

Proposed solution to gap 3

Contingent upon the decision made concerning Gap 2, Blue Planet will be able to take up the role of Enerbyte in development of the exploitation plan. No additional resources will be needed for this task.

Alternative solution to gap 3

The me² project, should they be willing to work with us on developing algorithms for use in our respective projects, may be able to supply Blue Planet with the required information.

Solution to gap 4

We cancel the Barcelona pilot, if funding is not available to manage and continue this.

1.8.2. WP1: State of the Art

General status

- Late
- On Track
- Beyond Expectations

<p><i>Progress with respect to the last period</i></p> <p>Deliverables 1.1-1.5 submitted</p>
<p><i>Difficulties</i></p> <p>None.</p>
<p><i>Objectives for the next period</i></p> <p>Continue to refine the stakeholder map (D1.1)</p>

1.8.3. WP2: Regulatory requirements (and compliance therewith)

<p><i>General status</i></p> <p><input type="checkbox"/> Late</p> <p><input checked="" type="checkbox"/> On Track</p> <p><input type="checkbox"/> Beyond Expectations</p>
<p><i>Progress with respect to the last period</i></p> <p>D2.1 and D2.2 have been submitted; D2.3 (Impact assessment) is slightly delayed due to <i>force majeure</i> departure of Enerbyte, and needs to be modified.</p>
<p><i>Difficulties</i></p> <p>Departure of Enerbyte has meant that it is very difficult to deploy impact assessment, as there is no technology partner to respond to the questions raised by the impact assessment.</p>
<p><i>Objectives for the next period</i></p> <p>D2.3 will be modified to be addressed to the pilot coordinators, in order to ensure that they execute the impact assessment in collaboration with the technology providers (Smappee or Cloogy). Preliminary answers to the impact assessment questionnaire have already been received from Smappee and Cloogy, and we are awaiting further reactions from them both. Estimated delivery of the first response to the revised impact assessment will be in M15 of the project.</p>

1.8.4. WP3: Societal Acceptability

<p><i>General status</i></p> <p><input checked="" type="checkbox"/> Late</p> <p><input type="checkbox"/> On Track</p> <p><input type="checkbox"/> Beyond Expectations</p>
<p><i>Progress with respect to the last period</i></p> <p>Drafts of D3.1 and 3.2 (both due in M6) have been delayed due to the fact that the staff member in Bergen responsible for these activities only began working in late 2016.</p>
<p><i>Difficulties</i></p> <p>WP3 has been slightly delayed due to problems with appointing staff at the University of Bergen. Deliverables are currently being developed and should be available in the coming two months, but are not in a publishable state.</p>

The Intention of Deliverables in this WP are to understand some of the local (geographical, cultural and technological) preconditions, enablers and restrictions as they occur in the three pilot cities (D3.1), and subsequently to write up a protocol for the operationalization of the Living Labs (D3.2).

As foreseen in the proposal, the development of the Living Lab protocol (D3.1) and the Pilot protocol (D6.1) are closely connected, and we have gone to efforts to ensure that VUB and UiB are closely working on these deliverables to ensure consistency and coherence as well as interaction across the two activities. We are specifically focusing on the interactions and comparability of the Bergen and Brussels pilots, as the Amsterdam Pilot and Living Lab are providing a 'vanguard' role, already implementing and testing acceptance and therefore providing additional data for the design of the Pilot/Living Lab implementation in Bergen and Brussels. It has also importantly been decided that the Deliverables should be finalised after closer consultation with the local authorities involved; in order to gather their input and insights. This will only increase the value and pertinence of the reports, and ensure that they are more applicable to our situations.

Objectives for the next period

Deliverables 3.1 and 3.2 will be available prior to the commencement of living labs and pilots in the Bergen and Brussels region (M15).

Additionally, D6.1 and D7.1 are being developed in tandem with D3.2, and should thus be available at the same time as the delivery of D3.2 (M15).

It is important to state that this does not affect the overall flow of the project, as buffers had been built into the space between deployment of technology and finalization of preparations for implementation.

1.8.5. WP4: Strategies for stakeholder engagement

General status

- Late
 On Track
 Beyond Expectations

Progress with respect to the last period

Efforts have been made in delivering a draft of D4.2 and D4.4 to the project director (Shahin). These need to be revised as they were considered not sufficient for submission.

Difficulties

WP4 has been slightly delayed due to three different factors, of which the project officer at Innoviris has been updated. **It is important to state that this does not affect the overall flow of the project, as buffers had been built into the space between deployment of technology and finalization of preparations for implementation.**

First, Enerbyte had a substantial role in this work package. As they are no longer part of the project, VUB has taken on the responsibility to fulfil their tasks in this work package. This has inevitably brought delays to the smooth flow anticipated in this deliverable.

Second, the delay in starting from the UiB side has meant that they have been focusing on WP3 until now: they are getting up to speed on WP4 and should be delivering D4.1 by May (M15).

Finally, maternity leave at the VUB has led to additional delays in leading the further development of these deliverables. The staff member responsible for WP4 from the VUB side is returning to work in the middle of April, and we will therefore update Innoviris within one month of delivery of this report.

Objectives for the next period

Deliverables 4.1 and 4.3 are in development, and we will receive working (if not final) copies of these documents before the implementation of the living labs and pilot projects in Bergen and Brussels (M15).

A first draft of D4.2 has been provided to the Project Director, but the document was considered not publishable at this stage. A refined version should be available in May (M15).

A first draft of D4.4 Should be available after 5 April. We expect a final version to be delivered to the Project Director (Shahin) at the beginning of May (M15).

Deliverables 4.5 and 4.6 should not be affected by this delay.

1.8.6. WP5: Development of VEA

General status

- Late
- On Track
- Beyond Expectations

Progress with respect to the last period

Difficulties

Enerbyte, responsible for this WP, has been declared bankrupt.

Objectives for the next period

As outlined above in Table WPO, we have identified a number of solutions to the Enerbyte departure scenario, and are patiently working within our consortium and with other external partners to resolve the situation. **First and foremost it is important to note that the development of a separate platform will now take place during the pilots and will not be designed before the pilots and living labs are in place: to start the pilots and living labs, we shall use third-party platforms based on open technologies that enable us to build upon them in subsequent moments during the pilot and living lab activities.**

1.8.7. WP6: Pilots

General status

- Late
- On Track
- Beyond Expectations

Since the project has started, contact has immediately been taken up with the two communes in Brussels (Forest and Watermael-Boitsfort). Information concerning the PARENT project has been disseminated in the newsletters of the communes, and has been presented to the communes at several meetings (Forest in July 2016, Boitsfort in June and November 2016). Additionally,

contact has been taken with other key stakeholder groups including the *Maison d’Energie* and Sibelga (both in August 2016).

We are already collecting names of interested households in both communes, and have over 50 people signalling intent for participation in the pilots and living labs in both communes.

Difficulties

As identified above in WP3, the protocol for the pilot (D6.1) will be delivered in M15, in order to take into account the social acceptability protocol, currently in development at our Norwegian partner, UiB.

Objectives for the next period

We will launch the pilots in the next period.

1.8.8. WP7: Living Labs

General status

- Late
- On Track
- Beyond Expectations

Progress with respect to the last period

Our Dutch partners UU and RES have already launched their living lab mechanism, which provides both the Bergen and Brussels living labs with key insights into uptake of the existing platforms. This will aid us in developing the deliverables due in this WP for the Brussels region (which we shall continue to do in close tandem with our Norwegian partner UiB).

Difficulties

As identified above in WP3, the protocol for the living labs (D7.1) will be delivered in M15, in order to take into account the social acceptability protocol, currently in development at our Norwegian partner, UiB.

Objectives for the next period

We will launch the living labs in the next period.

WPs 8 and 9 have not started, and were not due to start in this reporting period.

1.8.9. WP10: Communication

General status

- Late
- On Track
- Beyond Expectations

Progress with respect to the last period

The Communication Plan has been submitted and accepted. Posters and website have been developed. Interactions have been made with other JPI Urban Europe projects, and UU has submitted a version of their deliverable D1.4 to a conference, thereby receiving a scientific publication in conference proceedings.

Difficulties

Delivery of the exploitation plan (D10.3) will need to wait until we have a clearer understanding of the construction of the PARENT platform. This will be discussed between Blue Planet (responsible for the deliverable), Innoviris and the rest of the consortium in the coming months.

Objectives for the next period

Development of exploitation plan (D10.3); further communication activities.

1.9. Valorization activities

Amsterdam JPI projects meeting – 14 April 2016 (JS/JL/HN)

On 14 April 2016, JPI Urban Europe organised a one-day project meeting in Amsterdam, which aimed at bringing together the coordinators of the project that received funding from the funding agency. From our side, Jamal Shahin, Jacintha Liem, and Hugo Niesing (Resourcefully) attended the event. The first part of the programme focused on getting familiar with the different projects where each of the coordinators were asked to give a brief presentation of their project, followed by a poster presentation. The second part consisted of several parallel workshops session on int. al. programme management and communication, dissemination, and valorisation.

DOMINO collaboration – meeting 13 January 2017

The synergy meeting resulted in a list of activities where both projects can work together but also complement each other. As for valorisation, the PARENT project aims at increasing awareness and contributing to the reduction of energy consumption in two communes of the Brussels Capital Region, namely, Forest and Watermael-Boitsfort. Therefore, the two project teams decided to initiate joint workshops during the second period of the DOMINO project cycle, estimated to start around M12/13 of the PARENT project. Furthermore, both projects will explore whether each of the target groups might also be interested in participating in the other project's pilot. In terms of project dissemination, DOMINO would be able to offer posts through their social media channels and advertise the PARENT project's activities. In turn, PARENT can share with DOMINO its findings on the legal analysis, carried out for the first part of the project.

Presentation of the PARENT project at Watermael-Boitsfort – 26 November 2016

On 26 November, project coordinator Jamal Shahin attended a public event at the train station of Watermael-Boitsfort to promote the project and to recruit participants for the Brussels pilot. For this purpose, Jamal demonstrated the Smappee device and distributed project information flyers in Dutch, French, and English. Furthermore, he also provided practical and legal information to the public. During this event, nine individuals signed up for more information concerning participation in the PARENT project's pilot.

Annex: Executive Summaries WP1 deliverables

Summary - D1.1 – Mapping the stakeholders

Scientific Abstract

This document sets out to give a preliminary overview of the main stakeholders related to the Electricity supply chain, in Europe in general, and in four European cities (three of which are pilots in the PARENT project). The goal of this document is to provide:

- A) practical overview of the supply chain,
- B) an overview of who the key stakeholder types are or could be, and
- C) a list of particular stakeholders in Amsterdam, Barcelona, Bergen, Brussels and at EU level.

This process included addressing all potential players in the whole supply chain, from regulators, electricity producer, interest groups, to city representatives and of course the electricity end users.

When gathering an overview of stakeholder types, the harmonised electricity market role model, developed by the European Network of Transmission System Operators for Electricity (ENTSO-E), was used as a starting point. Additionally through desktop research and through consulting the networks accessible to the PARENT team a final list of 19 key stakeholder types were identified.

Narrowing the information to a city level, each partner collected a list of key stakeholders within each city and at EU level. The information on each stakeholder includes practical information (e.g. name and contact information), stakeholder characteristics (e.g. where in the supply chain they fit) and relevance to the PARENT project (e.g. potential collaboration or role of stakeholder).

The current stakeholder map comprises a list of almost 200 entries from the four cities and European level stakeholders. Each city has its own specificities and by acknowledging and mapping these differences/overlaps, the project is better prepared for the next steps. This is something that will be kept in mind when planning the pilots and living labs in order to ensure usability and usefulness of the VEA in each city.

Since this document is being delivered at the beginning of the project in order to create a baseline for future operations and to identify stakeholders already known to partners. Due to its practical nature, *Section 5: The stakeholder map* will be a **living document that will continue to grow** throughout the project lifespan. In this document the stakeholder map contains limited information. The annexed Excel sheet provides fuller content information. In compliance with privacy rules or at actors' specific requests, personal data is at times removed from official documents and kept only on local drives of relevant partner organisations.

Project Summary

Intention of deliverable: This deliverable set out to create a map of all stakeholders known to partners. It has the objective of being a source of information for information sharing, partner identification and general awareness of the actors in the policy, business, technical and civil society landscapes. Effort has been made to be as comprehensive as possible (many of the actors noted will not be contacted), to ensure a broad understanding of the actors engaged in the field.

Actions resulting from deliverable: The contacts for individual cities should be used by the Pilot responsables if necessary for identifying potential candidates for participation in the Pilots and living labs. EU-level contacts will be broached when the project is closer to having concrete results to share with them. Despite the intention to make this a living document, this has not (to date) been entirely successful. However, the stakeholder map will be circulated with a request for updating prior to the next consortium meeting.

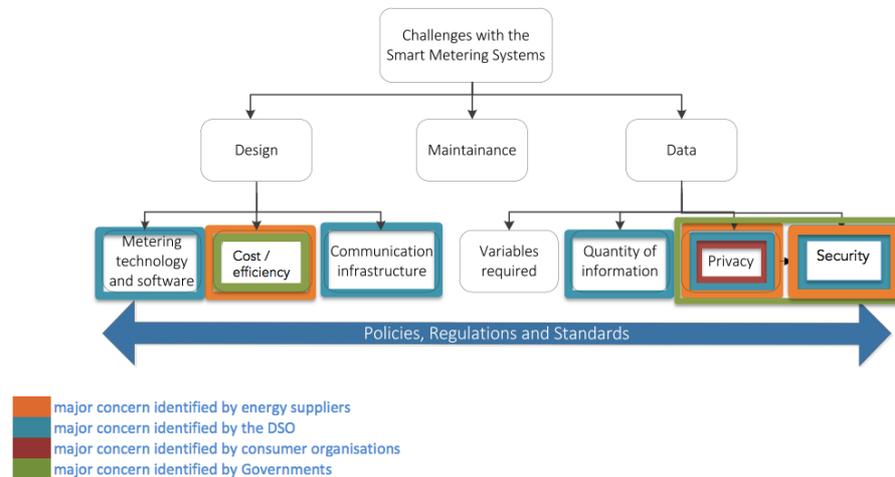
Management Summary

This deliverable achieved its objectives in the immediate term, but needs to be continually updated by the consortium in order to ensure usefulness.

Summary - D1.2 – Mapping stakeholders’ needs

Scientific Abstract

The deliverable reviews energy management needs of stakeholders ranging from energy providers, DSOs, governments and end-users. First of all, the document addresses the needs emerged at the EU level of stakeholders active in the retail sector of the internal energy market. Specific emphasis on *stakeholders relevant to PARENT on aspects relevant to PARENT* is provided. Secondly, the document introduces a methodology for further mapping stakeholders’ needs at local level. This methodology will be further extended and applied once relevant actors will be identified in each PARENT city (i.e. Amsterdam, Bergen, Brussels – and Barcelona). A set of “steps” for local stakeholders’ engagement is proposed. The deliverable concludes with an ad-hoc focus on end-users and an interview protocol inquiring on their potential needs vis à vis the VEA to be co-developed and tested in the context of Living Labs. The study refers to a key public consultation from the European Commission on Energy Management Systems to outline the stated needs of all stakeholders. These are outlined in the following diagram:



Most importantly for the PARENT Project, the study highlights that the core areas for consumer organisations (and thus our target groups) are:

- Accompanying technological solutions with human-centric ‘advice’: only if consumers understand the information they are given they can become more energy efficient.**
- Impact on household activities: smart metering technology makes it technically possible to process granular data which can give a unique insight into the activities of households.**
- Privacy and protection of personal data are central aspects.**

Project Summary

Intention of deliverable: This deliverable was designed to contribute to setting the scene for the platform development (WP5) and for Living Labs (W7). By outlining the stated desires and challenges outlined by various stakeholders (as they have publically announced in a series of European Commission public consultations), we intended to have the baseline for understanding the various issues that should be addressed in our Pilot and Living Lab activities. The original intention of this deliverable was to identify specific stakeholders in the various cities, however this proved to be far too ambitious at this stage of the project. Thus, D1.2 has focused on setting the scene for a more ‘constructive’ approach to engagement with stakeholders in our pilots.

Actions resulting from deliverable: This deliverable needs to be used in the context of WPs 4, 5 and 7, as the design of Pilots and Living Labs in Brussels and Bergen (and Amsterdam).

Management Summary

This deliverable needs to be seen in the context of a range of activities being carried out in the consortium, and specifically leads to bigger questions to be addressed by the participants in WPs 4, 5 and 7.

Summary - D1.3 – Technology state of the art

Scientific Abstract

This task overviews the existing: (1) devices measuring energy consumption at households (i.e. smart meters, sub-meters, etc.), (2) personal energy management solutions, classified on their functionalities, attributes, cost-efficiency, etc.

The study concludes that sub-meters are potentially useful, but are riven by challenges such as cost, and connectivity. It resonates with D1.2 in the sense that it develops a clear line concerning the advantages of such units, but assumes that the user will be able to interact usefully with the tools (in contrast to the findings from D1.2). Focusing on the residential consumer, the cost of purchasing a sub-metering device is not pay-off for the energy savings that an average residential consumer could obtain, so it could be seen as a nice-to-have device. Therefore, few domestic users are willing to face this extra cost, however the functionalities, features and information that this software offers (real-time data, comparisons, temperature control, alerts, disaggregation...) improve what is expected from the smart meters. Also on the bad side with the cost, is that this implies the installation of another hardware and the data communication, most of this domestic sub-metering communicate via Wi-Fi and it is one of the main problems together with the data quality.

Project Summary

Intention of deliverable: The deliverable was designed to describe the state of the art in the technology behind smart, sub- and personal energy management systems. The intention was to show the breadth of technological choices and to identify specific emergent and new technologies that will help inform the choices to be made in the Project's Pilots and Living Labs. Working alongside D1.4, the objective was to help understand the specific aspects of the end-user technologies that could be used in our project.

Actions resulting from deliverable: Blue Planet were requested to execute an additional piece of research in collaboration with VUB (Klaas Chielens) to identify and propose various tools that could be used in our project. As a result of these recommendations, the VUB started testing two specific tools (Cloogy and Smappee) to identify the potential utility of one or the other.

Management Summary

At the time of writing of this deliverable, the decisions to be made by the consortium were very unclear, and much was dependent upon a greater understanding of the regulatory and technical competence of organisations that were not involved in our project (namely, the DSOs). As we became more aware that a European Project could not rely on regulatory or technological consistency from the infrastructure providers (see D1.4), we were pushed to make a choice for sub-meter devices.

Summary D1.4 – Smart grid roll-out and access to metering data: state-of-the-art

Scientific Abstract

In this study, we start by providing an overview on smart electricity metering systems, the main applications and advantages, and the critical challenges that are facing their deployment in Section 2. After that, the roll-out of smart electricity meters in Europe is investigated in Section 3. Particularly, the roll-out of smart meters in the three European countries participating in the PARENT project and Spain is surveyed. Then, we study the smart metering data management and data access models in Europe focusing and comparing the status in the four targeted countries in Section 4. Section 5 concludes the report and provides directions for future steps.

The study aims at providing a guideline to different players in the energy market including third parties interested in playing an integral role in the energy reduction targets in the residential sector. It shows that the roll-out status of smart meters in Europe varies between countries and that not all European countries have deployed smart meters yet due to the results of their CBA performed, which may make the mission of helping consumers in reducing their electricity consumption through energy advisory platforms more challenging for third parties. Apart from getting the authorization from electricity consumers to allow third parties to access their consumption data, smart metering data access also strongly depends on the regulations and the data access model deployed in each country. It has been shown through this study that some countries in Europe have decided to adopt, or have already adopted, a separate CDH entity responsible for providing access of metering data, due to its advantages represented by the transparency, non-discriminatory and neutral data handling. In other data access model, it is expected that in some places the process will be more complex, taking into account the agreements that need to be done, the frequency of meter reading, the max delay between consumption and data access, the data privacy guarantee, among others.

Project Summary

Intention of study: This study was intended to investigate whether the PARENT project could ‘piggy back’ on developments in the European Union to roll out smart meters. It was to be seen as a complementary study to D1.3, which focused on the technological state of the art.

Actions resulting from deliverable: Decisions had to be taken concerning whether we as a consortium would go further in investigating linking to DSOs (Distributors of electricity) in the three countries participating in PARENT. It was decided that given the regulatory and technological divergence in the countries, as evidenced in this study, that we adopt a sub-metering system as the tool for collecting data and measuring household energy consumption. Furthermore, a version of this deliverable has been sent for presentation at a conference.

Management Summary

This study was designed to highlight the complexity involved in gaining access to metering data, and as such should be seen as an examination of the regulatory state of the art in the countries involved in PARENT. The findings reveal that there is a broad national difference across the four countries surveyed, leading to large amounts of complexity for use of smart meter data. Bearing in mind these factors, we have made the decision to try to apply a model for PARENT that builds on sub-meters.

When examining the deliverables generated in WP1 as an ‘ensemble’ we see that smart meters are currently being deployed from the perspective of the distribution and network operators, rather than from the perspective of consumers and households.

Summary D1.5 – Handbook of best practices in gamification

Executive summary

This document looks at the state of the art gamification techniques that enable, motivate and trigger people to participate and act. We start by addressing the various definitions and the meaning of the term of gamification. We then touch upon the general goals and aims of gamification to enhance non-game applications. In the third and fourth part of the report we look at the most frequently used game mechanics and elements to give an overview of the available options and trends, as well as list general advice for good practices collected through the various academic papers and practical guidelines. These first four sections aim at introducing the concept of gamification, its use and limitations and its application in the field.

In the fifth and sixth section, we narrow in on specific good practices and describe six cases where gamification is working to improve an application. The cases are analysed in a matrix of gamification in order to identify what elements are being used, how they work and what makes these gamified applications effective in reaching their goals.

The cases were:

- 1) Eco-driving
- 2) Fitness
- 3) Demand dispatch systems
- 4) Energy
- 5) Crowd-funding
- 6) Recycling

Finally, we narrow in even further; addressing the PARENT project specifically with lessons learned from the analysis and provide recommendations for gamification for the PARENT Virtual Energy Adviser (VEA).

Project Summary

Intention of deliverable: This deliverable was designed to establish the core aspects of gamification, showing examples and highlighting characteristics that work well and areas where gamification needs improvement.

Actions resulting from deliverable: This deliverable feeds directly into task 4.4 where specific gamification mechanisms elements will be selected and adapted for the implementation in WP5. The study also provides key characteristics of gamification that will be useful when discussing with participants in the pilots and the living labs (WPs 6 and 7).

Management Summary

The deliverable clearly achieved its objectives, in the sense that it set out the basis for a framework of gamification development in the PARENT project. It shows “what works” and where potential challenges lie in the application of gamification and reveals some of the social and technical steps that need to be taken during the development of the pilots.