PARENT

D4.6 – Key Performance Indicators WP4 – Strategies for Stakeholders Engagement

19 March 2018

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EXECUTIVE SUMMARY

As the final task in WP4- Strategies for stakeholder engagement, we look at the evaluation of the project in indeed reaching stakeholder engagement among other things. 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 evaluating 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 looked at 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 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 as a guide and a check list during the rollout of the project when possible. This report additionally aims to serve as a guide for other future projects, and will be revised at the end of the PARENT project in terms of leading recommendations as to how to organise citizen involvement in urban-scale projects.

Version Log

Issue Date	Rev No.	Author	Change
DD-MM-YYYY	1.0		[brief explanation of change]

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List of Abbreviations

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

1 Introduction

Based on Project description, several deliverable reports – including D6.1 pilot protocol, D7.1 living lab protocol and D4.5 gamification plan, this deliverable set out to identify measurable outcomes of the PARENT project.
By comparing the aims and goals of the project, with actual actions taken as well as the experiences of the target group, we aim to be able to measure, to a certain degree, the outcomes of the project and to measure its level of success.

The KPI's identified are 12 project design and implementation related, 23 pilot-related (technology and social engagement of participants), and 7 related to the Living labs and further scientific outreach. These 42 KPIs address several aspects of the project. For instance, we look at whether set targets have been met in terms of number of registered partners. We look at whether the number of meetings and services promised are met. These aspects are relatively easy to measure in a quantitative way, and while the design of the project may have evolved over time and therefore the requirement as well, this can be explained when measuring how the KPIs match up. Many of the KPIs are less clearly measured by checking boxes of actions done, or milestones reached. These qualitative aspects are measured largely through the final survey sent to our pilot participants- where they will themselves evaluate and rate the impact of the various actions and aims that we had for the project. Finally, some of the KPIs will be evaluated by the project consortium, based on experiences with the project roll out.
Even though not all KPIs fit smoothly into a measurement model, they are a good reminder to be aware of and keep in mind during the period of the pilots, that is to say, some of the KPIs allow us to shape the narrative of the project, whereas others are clearer markers of goals met or not.

2 Aim of the KPI metrics

2.1 Stated goal of the Project

The KPI metrics are meant to measure and evaluate the project design, implementation and outcomes. In order to select the key KPIs, a scan of the various other deliverables was conducted, especially looking at D6.1 Pilot Protocol, D7.1 Living Lab Protocol, D4.5 Gamification plan and D3.2 Living Labs Guideline for Social Acceptability. These deliverables were considered in order to identify the goals of

these specific deliverables, actions to be taken and expected impact. They are integrated into the overall project list of KPIs.

Additionally, we looked at the overarching goal of the project as described in the DOW where it is stated that:

"The main objective of the PARENT project is to increase, in a socially acceptable manner, the engagement of individuals in the management of their own electricity usage."

The three means of reaching this objective are described as via:

- The development of a marketable, open, extendible and reusable participatory energy management platform,
- recommendations on how such a platform could increase energy efficiency,
- awareness raising through close dialogue and knowledge sharing with multiple stakeholders at multiple levels.

3 The KPI metrics

3.1 What to measure & its purpose

The KPIs developed to measure and evaluate the project are meant as a help tool, a check list to keep in mind when developing specific actions and working on the project in general. The 48 KPIs listed in the five tables in chapter 4 have been designed to measure if the project has reached its purpose.

The KPIs are clustered into 3 main groups:

- Group 1, Project design, pilot preparation and implementation;
- Group 2, Participant engagement;
- And Group 3, Living labs and societal outreach.

Keeping the main objective above in mind, as well as the three key means of reaching that objective, special focus is put on group 2, looking at the pilot participants' experiences with the project[1]:

- Engagement/participation
- Satisfaction
- Behaviour change
- Learning/awareness increase
- Energy savings
- Actions taken

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[1] As found in Table 5-2 Technology Engagement, Table 5-3 Online behavior change Engagement and Table 5-3 Social engagement and actual behavior change

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- Positive spill over to other parts of life or to other persons

In addition to measuring participants' experiences, the KPIs target the implementation of designing a state of the art platform (that includes technical/online and communication plan) for energy management, and other aspects of the project we aim to measure[2]
- Project implementation/outreach efforts
- Technical and non-technical features of energy management platform
- Long term engagement activities – with participants and other stakeholders
- Outreach and scientific contribution

3.2 How to measure

The measurement unit will vary depending on the KPI and will include quantitative and qualitative output. There are KPIs that are easily measured by automated data, whereas some require participants'' written feedback. Whenever possible, we will aim to get both automated data from technology providers and human responses from participants, project partners and other stakeholders. Here is an example of data that we will collect:

- Automated data - from online platforms
  - Visit analytics for PARENT website
  - Mailjet newsletter service analytics for newsletter
  - Smappee energy monitor user data
  - Online Platform user data
  - Facebook data
- Self-reported (participant)
  - Project surveys
  - Emails sent to pilot leaders
  - Verbal communication and informal conversations
- Project team reporting
  - Registration numbers
  - Participation in events
  - Evaluations via informal communication with participants

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[2] As found in Table 5-1 Project design, preparation and implementation (recruitment and follow up) & Table 5-5 Project Living labs and further societal outreach/dissemination

4   PARENT KPIs

The KPIs are clustered into 3 main groups: 1, Project design, preparation and implementation; 2, Participant engagement; and 3, Living labs and societal outreach. As the largest part of the PARENT project focuses on the pilots, the KPI group targeting participant engagement is further divided into three tables: technology engagement; online behaviour change engagement; and social engagement and actual behaviour change. The list is not exhaustive as other activities may take place during the recruitment period, during pilots and or after the closing of the pilots for further dissemination. These are meant as a guideline for the pilot reports and project general evaluation

4.1   Project design, preparation and implementation

The 17 project design preparation and implementation KPIs focus on the pilots from a project management perspective. We analyse how the pilots were planned, the type and amount of recruitment efforts, selection of technology, participants and methodologies in reaching out the participants. It aims to check whether actions taken were in line with those in the project proposal and design and how these measures fared.

4.2   Participant engagement

In light of the key objective to increase engagement of individuals in the management of their own electricity usage - in a socially acceptable manner, there are 23 key KPIs that will be used for assessing participants' engagement in the PARENT project pilots. These will be used as a guideline both when designing activities within and around the pilots, as well as for measuring the project's success. The participant engagement KPIs are divided into three tables (that target the technology acceptance, smoothness and utility, the online instruments used to reach out the participants and the physical engagement efforts as well as actual behaviour change identified by participants).
Note that as this is a research project, some plans may change and evolve in unexpected ways. In order to increase and enhance the value of the project and to respond to real life situations that may come up, some flexibility in the evaluation is to be expected.

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4.3   Living labs and scientific outreach

In addition to the design of the project, and implementation where a strong focus is on the development of technology, methods for citizen engagement and the roll out of the pilots, there are two other important parts within the project that can be evaluated. These are measured in 8 KPIs on the Living labs and the general outreach of the project (in addition to the very strong local involvement and dissemination foreseen in the pilots).

Looking at the PARENT project DOW, the Living labs *"are meant to be an innovative instrument to ensure continuous participation of the stakeholders and of seeking their views in developing both the PARENT prototype (WP5) and PARENT final recommendations (WP9)."* Further translated in D7.1: Living Lab protocol: "*In practical terms, Living Labs are comprised by a stable pool of participant stakeholders, engaged and recruited locally in the three cities, to monitor and provide feedback on the main cornerstones of PARENT platform and pilots.*"

The evaluation of the Living labs will be mainly qualitative and based on the meetings held, participants involved and on the outcome of these meetings as well as level of satisfaction from meeting holders and participants. Finally, in the same group, we want to measure also the scientific outreach of the project by exploring the output provided by the project as well as the networks created and nurtured.

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5 PARENT project list of KPIs

5.1 Group1: project design, preparation and implementation

Table 5-1 Project design, preparation and implementation

	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation
1	Registered participants	Number of registered Participants	Project team reporting– forms counted	Quantitative - compared to goal of each pilot	Project design and implementation /recruitment
2	Retention of participants	Number of registered Participants dropping out of project	Project team reporting- number of drop outs and reasoning	Mixed quantitative and qualitative- dropouts compared with total participants and reasoning for leaving recorded	Project design and implementation & social acceptability
3	Consent form and informed consent	Number of signed forms	Project team reporting forms counted	Quantitative- compared to registered participants	Project design and implementation/ RRI implementation
4	Data protection and privacy	*Measures taken to ensure protection of privacy and data security in the platform and project overall*	Project team reporting	Mixed quantitative and qualitative- based on the project data protection plan and efforts	Project design and implementation & RRI
5	Registration support	Level of satisfaction with explanation and clear information given during and around sign up	Self-reported participants	Qualitative – based on final survey responses	Project design and implementation/recruitment
6	Energy monitor and application installation support	Level of satisfaction with explanation and clear information given during and around installation (by	Self-reported participants and project team	Mixed qualitative and quantitative - based on final survey responses from participants and on listing of	Project design and implementation/ technology support and facilitation

			reporting on technical issues encountered	number of technical issues reported and requests for further support	
		PARENT team- regardless of outcome or relationship with Smappee help desk)			
7	Sustainability of pilot efforts- level of engagement over time	Participation in project in the beginning vs. end of pilot	Automated & self-reported participants: automated use of, platform, challenges, emails received and event participation; self-reported participants interest over time	Quantitative and qualitative - based on platform data, participation in events data and based on final survey responses	Engagement/longevity
8	Diversity of approaches used to consider heterogeneity of participants	platform features and initiatives organized targeting households as heterogeneous entities? (different usage patterns, size of household etc.)	Project team reported – list of actions taken/features included & reflection of team	Mixed quantitative and qualitative	Project design and implementation, Representativeness & *Social acceptability*
9	Satisfaction with project incentives provided	Level of satisfaction with incentives/ prices/ other game initiatives initiated during pilot (and awareness of these existing)	Self-reported participants	Qualitative - based on final survey responses Quantitative - based on participants engaging in incentive schemes	Engagement / acceptance
10	Communication and support provided by project throughout pilots	Level of satisfaction with support throughout the project/Experience and level of communications on project, LL, pilots, platform, relevant	Self-reported participants	Qualitative - based on final survey responses and compared with communication strategy	Engagement / acceptance

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		news from the local energy context etc.			
11	Realistic expectations of involvement and results for participants	Were the expectations of stakeholders and pilot participants met in terms of level of what was expected from them in terms of participation and amount of effort and level of contribution from project team given to them	Self-reported participants	Qualitative - based on final survey responses	Project design and implementation, and Acceptance
12	Number of recruitment activities and types	Efforts to recruit participants, communication activities	Project team reporting- list of actions and efforts taken	Mixed quantitative & qualitative - compared with project description plan	Project implementation
13	Number of newsletters and other emails sent	Level of online communication with participants	Automated data and Project team reporting- number of newsletters and other mail communication	Quantitative - compared with efforts foreseen- project description plan	Project implementation
14	Number of workshops/meetings organised	Level of face to face communication	Project team reporting	Quantitative - compared with efforts foreseen in project plan	Project implementation
15	Number of surveys made	Level of engagement activities	Automated and project team reporting– surveys made and responses	Quantitative - compared with efforts foreseen in project plan	Project implementation/ participant reach

| 16 | Number of games/other activities initiated | Level of gamified engagement activities | Project team reporting – list of actions | Quantitative – compared with efforts foreseen in project plan | Project implementation |
| 17 | Representativeness of participants (Engagement of the project with groups that show different energy consumption patterns) | age, gender, attitude and values, housing characteristics | Project team reporting and self-reporting participants – based on clustering survey | Mixed quantitative and qualitative - compared with pilot city demographics/estimates | Project planning/inclusiveness efforts and implementation |

5.2　Group 2: Participant Engagement

Table 5-2 Technology Engagement

	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation
18	Installed energy monitors and applications	Number of Smappees showing up on the PARENT online Platform	Automated data- Smappees on platform	Quantitative - compared to registered participants- significant majority considered very good outcome	Selection of technology
19	Frequency of use of energy monitor and application	How often per day/week/month participants look at their application	Self-reported Participants	Quantitative - based on final survey responses	Technology acceptance /selection of technology

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20	Experience of energy monitor and application	Level of satisfaction with the energy monitor and understanding of data	Self-reported Participants	Qualitative - based on final survey responses	Project design and implementation/selection of technology
21	Participants on the PARENT online platform	Number of active (Smappee correctly installed and data shared) users on PARENT online platform	Automated data – platform data	Quantitative - compared with total registered participants	Project design and implementation /selection of technology
22	Visits to the PARENT online platform	How often per day/week/month participants visit the comparative part of the platform	Self-reported - participants	Quantitative - based on final survey responses	Engagement /technology participation
23	Experience of the online platform – comparative part	Level of satisfaction with Platform	Self-reported – participants	Qualitative- based on final survey responses	Engagement /technology participation
24	Effectiveness of data visualisation	Intuitive understanding of data visualisation	Self-reported - participants	Qualitative - based on final survey responses	Engagement/

Table 5-3 Online behaviour change Engagement

	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation
25	Number of participants visiting online platform for the "challenges"	How often per day/week/month participants visit the challenges page of the platform	Self-reported - participants	Quantitative – based on final survey responses	Engagement /technology participation
26	Number of challenges ticked	How many challenges accepted	Automated data – platform data	Quantitative – compared with participants on the online platform (number participating at least once &	Engagement /technology participation

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	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation
					average no of challenges accepted per user)	
27	Development in leader board over time	How many participants make it to the leader board, and overall leaderboard scores	Automated data - platform data	Quantitative - compared with participants on platform	Engagement /technology participation
28	Experience of the challenges gamification	Level of satisfaction with challenges	self-reported - participants	Quantitative – based on final survey responses	Engagement /technology participation
29	Newsletter reach - *Number of people sent*	How many received project newsletters	Automated data – mail service data	Quantitative - compared with total number of participants	Engagement/selection of technology
30	Newsletter reach - *Number of people opened*	How many people read the newsletters	Automated data – mail service data	Quantitative - compared with emails sent	Engagement /technology participation
31	Newsletter reach - *Number of people clicked*	How many people engaged with the content by clicking on a link in the newsletter	Automated data – mail service data	Quantitative - compared with emails opened	Engagement /technology participation
32	Experience of newsletters	Level of satisfaction with newsletter frequency and content	Self-reported - participants	Qualitative - based on final survey responses	Engagement /technology participation
33	Engagement via social media	Participants' use of Facebook group for direct peer to peer sharing and engagement	Automated data - Facebook data	Quantitative - based on number of participants part of Facebook group and frequency of posts and likes	Engagement/social connections

Table 5-4 Social engagement and actual behaviour change

	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation

34	Participation in workshops	Number of participants in workshops	project team reported	Quantitative - compared to the number of registered participants	Engagement
35	Participants' electricity reduction	Did participants notice a reduction in electricity consumption over span of pilots	Self-reported – participants & Automated platform data	Mixed qualitative and quantitative- based on final survey responses & on platform data (changes in total averages over time)	Engagement/Behaviour change
36	Self-consumption of locally produced renewable energy (for prosumers)	Did participants notice a change in electricity self-consumption over span of pilots	Self-reported - participants	Mixed qualitative and quantitative -based on final survey responses and dialogue w. participants	Engagement/Behaviour change
37	Self- sufficiency of locally produced renewable energy (for prosumers)	Did participants notice a change in electricity self-sufficiency over span of pilots	Self-reported - participants	Mixed qualitative and quantitative -based on final survey responses and dialogue w. participants	Engagement/Behaviour change
38	Participants effort/actions to reduce electricity consumption	How many actions did participants take to reduce their electricity consumption	Self-reported - participants	Quantitative - based on final survey responses	Engagement/Behaviour change
39	Spill over to other pro environmental behaviour	Participants doing other new ecologically conscious activities /actions (e.g. using bike more, less waste, less toxic products, more local/organic foods etc.)	Self-reported - participants	Quantitative - based on final survey responses	Engagement/Behaviour change
40	Spill over to other public participation behaviour	Participants participating in other new local initiatives (e.g. meetings, workshops, signing petitions for improvement locally, political	Self-reported – participants	Qualitative - based on final survey responses, anecdotal evidence (best practices)	Engagement/Behaviour change

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		activities, neighbourhood events, shared gardens, etc.)			

5.3   Group 3: Project Living labs and further societal outreach

Table 5-5 Project Living labs and further societal outreach

	KPIs	What to be measured	Type of information collected	Evaluation Method	Purpose of evaluation
41	Execution of three LL workshops	How many workshops/focus meetings were conducted and when were they conducted? within time frame or project	Project team reported based on participation figures	Quantitative - compared with plan set out in D7.1	Input for project and output for smart electricity community
42	Involvement of relevant stakeholders in LL	Did the workshops have relevant and representative participants	Project team reported – number and type of participants	Quantitative – compared with plan set out in D7.1	Representativeness and scope for further actions
43	Representativeness of stakeholders who took part in the LL	Did the workshops pay attention to the heterogeneity of participants?	Project team reported	Qualitative - According to *Social acceptability measures of the project*	Representativeness & *Social acceptability*
44	Fruitfulness of outcome for project and LL participants	Level of satisfaction of meetings and possible continuous network by organisers and participants, accessibility of meetings	Project team reported (with input from participants), number of invitees returning to a LL,	Qualitative - based on discussions with participants and meeting holders	Long term engagement and social acceptability
45	Number of networks reached	Outreach to other networks and neighbourhood communities to recruit and in other way engage	Project team reported – listing of people contacted and connected	Mixed quantitative and qualitative - Compared	Project planning/inclusiveness

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	out to overall in project		with and nature of those connections	with efforts foreseen/planned	efforts and implementation?
46	Number of media dissemination activities overall	Social media /other newsletter presence- media promotion of project	Project team reported – list of documented outreaches	Quantitative -compared with efforts foreseen/planned / qualitative- impact/reach of these activities	General public outreach and dissemination
47	Engagement of the project with other initiatives in community	Number of prizes collected in the community from donors / involvement of other organisations in project /involvement of local government/ team efforts	Project team reported- Number of organisations- collaborators reached and number of activities	Qualitative - analysis of collaborative efforts and actual collaborations	General public outreach and dissemination
48	Scientific contribution	Number of academic/scientific articles published, conferences participated in, and dissemination activities	Project team reported- list of output	Quantitative - compared with dissemination plan goals (WP10)	Scientific community outreach