

ENERGISE

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AND INNOVATION FOR SUSTAINABLE ENERGY

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HARVESTING ENERGISE LIVING LABS EXPERIENCES

Description: This report covers partners' experiences regarding the preparation and implementation of ELLs, including participant feedback, paying particular attention to gender issues, and reflections by external partners; the report also addresses the possible continuation of (some of) the ELL measures.

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Authors: Christian Scholl (UM), Veronique Vasseur (UM), Eeva-Lotta Apajalahti (UH), Senja Laakso (UH) and Eva Heiskanen (UH)

Reviewers: Frances Fahy (NUIG), Gary Goggins (NUIG), Eimear Heaslip (NUIG), Charlotte Louise Jensen (AAU), Marfuga Iskandarova (Kingston) Audley Genus (Kingston), Tim Harries (Kingston), Marlyne Sahakian (UNIGE), Edina Vadovics (GDI), Kristóf Vadovics (GDI), Eoin Grealis (LMU)

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ENERGISE partners	Logo
<p>National University of Ireland, Galway (NUIG), University Road, Galway, Ireland</p>	
<p>Aalborg Universitet (AAU), Fredrik Bajers Vej 5, Aalborg 9220, Denmark</p>	
<p>Kingston University Higher Education Corporation (Kingston), River House High Street 53-57, Kingston Upon Thames KT1 1LQ, United Kingdom</p>	
<p>Universiteit Maastricht (UM), Minderbroedersberg 4-6, Maastricht 6200 MD, Netherlands</p>	
<p>Université de Genève (UNIGE), 24 rue du Général-Dufour, 1211 Genève 4, Switzerland</p>	
<p>GreenDependent Institute (GDI), Eva utca 4, Godollo 2100, Hungary</p>	
<p>Ludwig-Maximilians-Universitaet Muenchen (LMU Muenchen), Geschwister-Scholl-Platz 1, Muenchen 80539, Germany</p>	
<p>Focus Drustvo Za Sonaraven Razvoj (FOCUS), Maurerjeva Ulica 7, Ljubljana 1000, Slovenia</p>	
<p>Applied Research and Communications Fund (ARC Fund), Alexander Zhendov Street 5, Sofia 1113, Bulgaria</p>	
<p>Helsingin Yliopisto (UH), Yliopistonkatu 4, Helsingin Yliopisto 00014, Finland</p>	

TABLE OF CONTENTS

Table of Contents	3
ENERGISE Project	5
Executive Summary	6
Introduction	7
Part I – An outline of the WP4 Monitoring approach.....	8
Part II – Outcomes of monitoring the ELL preparation process	10
Overview of key Aspects of local ELL preparations and implementation plans	11
Part III: Outcomes of monitoring the ELL implementation process.....	14
Part IV: Outcomes of evaluating the ELL implementation process.....	19
Accounting for changes	19
Overview of changes in local ELL implementation	20
Reflections on implementation process	22
Part V: Outcomes of the WP3 workshop "Feedback on the ELL Design"	25
Part VI: Feedback by external partners and participants.....	32
Denmark	32
Finland	33
Germany.....	34
Hungary	35
Ireland.....	37
Netherlands	38
Switzerland	40
United Kingdom	41
Appendix 1: Template for Local ELL Implementation Plan	44
Appendix 2: Template for 3 rd Monitoring Survey “Evaluating the local ELL implementation”	48

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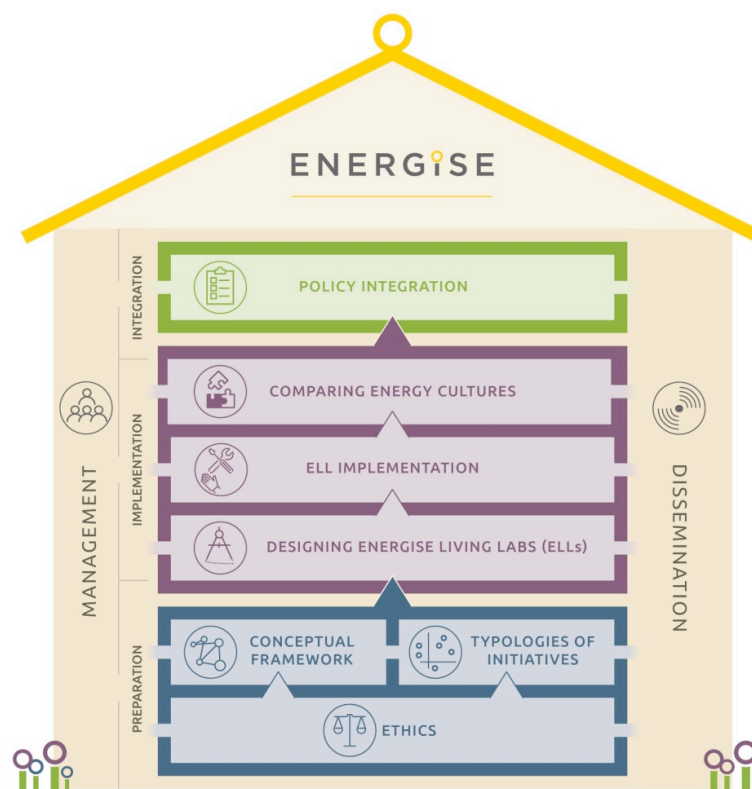
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ENERGISE PROJECT

ENERGISE is an innovative pan-European research initiative to achieve a greater scientific understanding of the social and cultural influences on energy consumption. Funded under the EU Horizon 2020 programme for three years (2016-2019), ENERGISE develops, tests and assesses options for a bottom-up transformation of energy use in households and communities across Europe. ENERGISE's primary objectives are to:

- **Develop an innovative framework** to evaluate energy initiatives, taking into account existing social practices and cultures that affect energy consumption.
- **Assess and compare the impact** of European energy consumption reduction initiatives.
- **Advance the use of Living Lab approaches** for researching and transforming energy cultures.
- **Produce new research-led insights** into the role of household routines and changes to those routines towards more sustainable energy.
- **Encourage positive interaction** between actors from society, the policy arena and industry.
- **Effectively transfer** project outputs towards the implementation of the European Energy Union.



EXECUTIVE SUMMARY

This deliverable harvests the ELL implementation experiences based on the WP4 monitoring of the preparation, implementation and evaluation of 16 ELL sites in eight countries. The deliverable consists of 6 parts.

Part I briefly sketches the WP4 monitoring approach outlining how the ENERGISE team monitored the parallel roll-out of 16 ENERGISE Living Labs (ELLS) in eight different countries. The approach consisted of four steps: a survey spread amongst local implementation teams in order to capture the preparation plans; a survey to capture the experiences of the preparation period and the final local implementation plans; bi-weekly conference calls with the representatives of each implementation team throughout the period of ELL implementation in order to jointly stir this process and react to unexpected developments; and, finally, a survey for capturing the implementation experiences and their evaluation by the local implementation teams.

Part II comprises a brief overview of the preparation process monitoring. Based on a general template and extensive exchange on consortium level, each local team detailed how the general guidelines for intervention and engagement (D3.4) and for monitoring and evaluation (D3.5) applied in local contexts. Partners also provided reflections on the overall preparation process and lessons learnt. The outcomes are presented in this section as a table summarising key aspects of local ELL preparations and implementation plans.

Part III provides a brief overview of the outcomes of monitoring the implementation process. It contains the agenda guiding the eight bi-weekly conference calls during the period of the ELL roll-out, a list of participants, an overview of the challenges encountered throughout the implementation process by each partner and an overview of issues addressed throughout the calls.

Part IV provides an overview of the changes made by local implementation teams in comparison to their final implementation plan. Based on a general template distributed in January, one month after completing the active ELL implementation phase, each local team reflected on the experiences of the local ELL implementation. This section also offers a list of key lessons taken from the implementation experience.

Part V summarises the outcomes of a reflection workshop “Feedback on the ELL design” at the ENERGISE project meeting in Budapest in January 2019 organised by the leaders of WP3 (UH). The report also contains useful suggestions for the possible repetition and continuation of (some of the) ELL intervention measures implemented and for how to target longevity.

Part VI contains a collection of feedback as provided by ELL participants and implementation partners. Per country, this section provides an overview of the reactions the respective implementation team received.

INTRODUCTION

WP4 of the ENERGISE project concerns the planning and implementation of 16 ENERGISE Living Labs across the eight participating countries, following WP3 guidelines for intervention and engagement (D3.4) and for monitoring and evaluation (D3.5). To ensure comparability and to arrive at meaningful insights into practices, culture and associated energy use, the ENERGISE consortium aimed to implement ELL initiatives that are as similar as possible in terms of timing and approach but do not ignore local needs and contextual conditions.

The WP4 monitoring plan that forms the basis of this deliverable, and is outlined in Part I of this report, has been designed for the purpose of documenting ELL implementation in order to trace similarities and differences (see also D4.1).

This document harvests the experiences with the preparation, implementation and evaluation of 16 ELL initiatives that took place between August and December 2018. The process of devising the template for final local implementation plans, writing these plans, discussing implementation experiences during bi-weekly conference calls, devising the evaluation template and filling them in, brought to the fore a number of issues in need of further specification and ideas for future improvements by the ENERGISE consortium. At the partner meeting in Budapest (30 January – 1 February 2019), the WP3 leader (UH) organised a workshop to reflect on critical aspects of the overall ELL design.

In short, the overall aims of this deliverable, and the process it forms part of, are to:

- document the outcomes of the various steps involved in the WP4 monitoring of ELL preparation and implementation across eight countries
- present relevant data for explaining differences occurring in the substantive outcomes of the 16 ELLs by differences in local implementation processes
- document the retrospective reflection on the consortium's approach and its potential for future implementation of ELLs

PART I – AN OUTLINE OF THE WP4 MONITORING APPROACH

The WP4 monitoring approach aimed at the collection of data related to the ELL implementation process and the design of communication instruments for the entire ELL implementation process. Monitoring activities included the collection of process-related data and the signalling of possibly necessary intervention in local ELL implementation (e.g. by centrally refining plans or coordinating procedures). Important rationales for closely monitoring the process of ELL implementation were to ensure comparable activities across the 16 ELLs in eight countries, to support a reflexive implementation process and provide process-related findings for WP5 analyses. For monitoring purposes, we distinguished three phases, each requiring a slightly different approach:

- 1) Preparation (incl. recruitment): March – August 2018
- 2) Implementation (incl. baseline & ELL initiatives): September 2018 – December 2018
- 3) Evaluation: January 2019 – March 2019

The WP4 monitoring approach connected monitoring activities as much as possible to key implementation steps not least to keep the required time effort of local teams as low as possible.

1. MONITORING THE PREPARATION PROCESS

The monitoring of the preparation process consisted of two questionnaires to the local implementation teams with approximately five pages of open-ended questions. The questionnaires followed the steps of D3.4, inviting responses outlining plans and decisions made, reasons for choices made and reflections.

The first questionnaire was circulated in April 2018. Partners' responses have been discussed in calls in the week of 14 May addressing communication with participating households (with WP7-lead GDI) and the selection of sites, household characteristics, the involvement of hard-to-reach groups, and the detailed design of ELL initiatives, including challenges and supporting measures. Follow-up actions, such as the closer alignment of ELL interventions and communication with participating households have been discussed at the project meeting in Copenhagen in June 2018. The outcomes of this first monitoring step, including the actual preparation plans of all eight implementation teams have been reported in D4.1.

The second questionnaire covered more detailed aspects of the preparation concerning ELL implementation and evaluation. The idea was to take stock just before the actual implementation starts. Changes in respect to the previous plans were addressed. The questionnaire was disseminated at the end of July 2018.

2. MONITORING THE IMPLEMENTATION PROCESS

To monitor the implementation process, bi-weekly phone calls were organised between the middle of September and middle of December with the eight leads of local implementation teams. These calls have been used to jointly identify discussion and actions points addressed during or in between conference calls. Issues identified have also generated insights for WP5 ELL data analysis and WP3, WP4, WP6 and WP7 deliverables addressing ELL implementation WP4-lead Maastricht University chaired the calls and took minutes (see for more details Part III).

3. MONITORING THE EVALUATION PROCESS

An ex-post questionnaire was used for the monitoring of the evaluation process in February/March 2019. The questionnaire took an evaluative format and invited local implementation teams to reflect on possible deviations from their initial ELL implementation plans. The questionnaire, again approximately 5-pages in length and answerable within a few hours, was disseminated to the local ELL teams mid-January 2019.

PART II – OUTCOMES OF MONITORING THE ELL PREPARATION PROCESS

This section is based on the final local implementation plans (see Appendix 1) for each country involved in ELL roll-out, written by the corresponding local ELL implementing partner:

- Denmark (AAU)
- Finland (UH)
- Germany (LMU)
- Hungary (GDI)
- Ireland (NUIG)
- Netherlands (UM)
- Switzerland (UNIGE)
- United Kingdom (KUL)

Draft versions of the local implementation plans were reviewed by WP4 lead (UM) and emerging issues were brought to discussion at a consortium call and at the project meeting in Copenhagen in June 2018 (see also D4.1). In addition, partners were encouraged to read each other's draft implementation plans before submitting their final plans. This process was meant to facilitate collective reflection and the streamlining and further concretising of plans. The final 'implementation plan' was collected from all partners at the end of August/ beginning of September 2018 when preparations were close to completion and ELL roll-out about to start.

The main goal of this 'implementation plan' was to provide partners with a tailored framework for implementing ELLs, to take a baseline in order to enable a comparison of the actual implementation process and changes that might occur, to compare experiences with the initial plans and capture reflections on the ELL preparation process.

In this report, we share an overview of the implementation teams of each country and an overview of the lessons in relation to the preparation process. The template for the local implementation plans can be found in Appendix 1.

OVERVIEW OF KEY ASPECTS OF LOCAL ELL PREPARATIONS AND IMPLEMENTATION PLANS

	Team	Sites	Recruitment	Composition	Main Preparation challenge(s)	Challenge period
Denmark	- 2 AAU researchers - Roskilde Municipality	ELL1: Viby Sj, City of Roskilde ELL2: Trekroner, City of Roskilde,	Together with municipality, announcements through different channels (municipality's official communication channel, social media)	ELL1: 18 households, a community of place with most households living in detached houses, ELL2: 20 households defining themselves as a group of community-builders Both ELLs: mostly middle-class, but diverse age groups	- Technical issues with installing the meters - Expectation management with some households expecting technical energy advice	15/10 – 02/12
Finland	- 6 UH researchers - Posintra - City of Helsinki	ELL1: Porvoo ELL2: Merihaka district in Helsinki	Together with implementation partners, focusing on target groups	ELL1: 19 households living in single-family homes (with relatively large energy bills) ELL2: 18 households living in an apartment building with collectively managed heating system (as hard-to-reach group)	Avoiding interference of recruitment with holiday period in Finland	15/10 – 02/12
Germany	3 LMU researchers and 3 student	ELL1: town of Weilheim ELL2: town of	Via street recruitment, e-mailing, promotion by local stakeholders, local	ELL1: 20 households, diverse mix of home owners	Difficulties with the scheduling of ELL2 Group meetings due to	15/10 – 02/12

	researchers	Murnau and the nearby village of Iffledorf	newspaper and video promotion	and renters with varying educational and professional background ELL2: 20 households, diverse mix of home owners and renters with varying educational and professional background	participant availability.	
Hungary	6 GDI researchers, 2 associated researchers	ELL1: the town of Gödöllő (and close surrounding) ELL2: the town of Gödöllő	With the support of local NGOs, via various local mailing lists, targeted e-mailing and advertisements in local newspapers	ELL1: 21 households ELL2: 20 households Both ELLs had a similar socio-economic composition; GDI managed to involve higher-middle-class groups	Relative late development of communication support tools, so more local pro-activeness and preparation was required	08/10 – 25/11
Ireland	- 3 NUIG researchers - Tipperary Energy Agency (TEA) for ELL1 - Local school for second level education for ELL2	ELL1: Tipperary area ELL2: Tipperary area	Via local gatekeepers, ELL1 participants recruited by TEA using their newsletters and social media sites, ELL2 via a local school	ELL1: 20 households from Tipperary area ELL2: 18 households, the majority of them located around the local school Both ELLs included hard-to-reach groups and a mix of household profiles.	Recruitment and the relatively big distance to the ELL implementation site, and the long travel time for the involved researchers	22/10 – 09/12

Netherlands	<ul style="list-style-type: none"> - 5 UM researchers - Initially: Op het Zuiden 	<p>ELL1: City of Maastricht (and close surrounding)</p> <p>ELL2: City of Roermond</p>	<p>Via direct mailings, newsletters, social media, e-mailing, posters and flyers</p>	<p>ELL1: 20 individual households</p> <p>ELL2: 14 households, majority tenants in apartment complexes</p> <ul style="list-style-type: none"> - Several ELL1 and ELL2 households appeared to have a pre-existing interest in sustainability 	<p>Recruitment of participants for both ELLs after having lost the local implementation partner</p>	22/10 – 09/12
Switzerland	<ul style="list-style-type: none"> - 2 UNIGE researchers - Terragir - Urbamonde 	<p>ELL1: City of Geneva</p> <p>ELL2: City of Geneva</p>	<p>Relayed by local NGOs, associations household groups, building management, social media, a journal article and mailing and additional face-to-face by participating in local events</p>	<p>ELL1: 20 participants, both single and multiple household members</p> <p>ELL2: 16 participants, including families and single households (living in a cooperative building)</p>	<ul style="list-style-type: none"> - Data on heating-related energy consumption is hard to obtain on individual household level - Widespread use of collective laundry required reliance on laundry diaries for data collection 	15/10 – 02/12
United Kingdom	<ul style="list-style-type: none"> - 3 KUL researchers - ENERGISE Sussex Coast 	<p>ELL1: Hastings and St Leonards on Sea</p> <p>ELL2: Hastings and St Leonards on Sea</p>	<p>Together with Energy Sussex Coast, via promotion at public buildings (local mosque), calls in local press, social media, snowballing</p>	<p>ELL1: 20 households with some variety with respect to socio-economic position</p> <p>ELL2: 13, some variety in socio-economic position; all belong to same faith group</p>	<ul style="list-style-type: none"> - Finding a suitable local site for the ELLs - Identifying and recruiting to ELL2 - Long distance between the research team location and ELL implementation site 	<p>ELL1: 15/10 – 2/12</p> <p>ELL2: 22/10 – 9/12</p>

PART III: OUTCOMES OF MONITORING THE ELL IMPLEMENTATION PROCESS

The rationale behind these bi-weekly monitoring calls was to identify and address issues emerging throughout the implementation in order to guarantee a smooth a successful ELL implementation process and help to align it across 8 countries.

The following schedule applied for our bi-weekly ELL monitoring calls:

- Tuesday, 11 September
- Tuesday, 25 September
- Tuesday, 9 October
- Tuesday, 23 October
- Tuesday, 6 November
- Tuesday, 4 November
- Tuesday, 18 December
- Tuesday, 8 January

The following ENERGISE team members participated in the bi-weekly monitoring calls:

Partner	Person
AAU	Charlotte Louise Jensen
GDI	Edina Vadovics
KUL	Marfuga Iskandarova
KUL	Tim Harries
KUL	Audley Genus
LMU	Eoin Grealis
NUIG	Gary Goggins (facilitation)
NUIG	Eimear Heaslip
UH	Eva Heiskanen
UH	Eeva-Lotta Apajalahti
UNIGE	Laure Dobigny
UM	Veronique Vasseur
UM	Christian Scholl (chair)
UM	Florian Goldschmeding (minutes)

The calls lasted approximately 90 minutes. The participation rate was high, with a maximum of two partners missing per call. Missing persons provided a written update or a Powerpoint presentation, which was presented by the chair of the meeting, on the ELL implementation in their country in order to ensure a continuity of the joint monitoring process.

Due to the workload with finalising the ELL's, the monitoring call of 18 December was replaced by a round of updates sent by Email and an additional call on 8 January, 2019.

D4.4 Harvesting ELL Experiences

The following **agenda** items structured the calls:

- Welcome/intro
- Issues addressed previous meeting
- Round of updates from every local implementation team (5 min./partner)
- Identification and discussion of issues arising from updates (15 min.)
- AOB/closing

Partners were asked to share information and updates regarding the following **topics** during their allocated 5-minute timeslots:

- Functioning of the local ELL team
- ELL activities during the past 2 weeks:
 - Related to communication with Households
 - Related to data collection
- Relevant observations
 - regarding data collected from weekly surveys
 - regarding interaction with households
 - regarding ELL community events (co-creation)
 - regarding participation (drop-outs?) of households
- Communication with stakeholders
- Unexpected developments (pos. & neg.); unplanned measures; problems

CHALLENGES ENCOUNTERED BY LOCAL IMPLEMENTATION TEAMS:

Denmark: The implementation team in Denmark faced a few technical challenges during the household visits at the beginning of the ELL implementation. Not everywhere, for example, was it possible to install the energy meters. . Further,, the heating challenge was experienced as over-ambitious by many households and the implementation team needed to sooth concerns raised by some households about the risk of dampness. However, participating households remained engaged throughout the challenge period, and overall the ELLs ran smoothly and were successfully implemented.

Finland: The implementation team in Finland had a smooth ELL implementation process. Except for some technical difficulties in the beginning with 14 of the energy meters being faulty/broken, no major challenges needed to be addressed. Participating households remained engaged and most of them responded to the weekly surveys. Implementing the ELLs in Finland a little earlier than other partners, the team in Finland also identified important lessons and opportunities for other teams, such as delaying the final questionnaire for not coinciding with the last weekly survey for households.

Germany: Barring a minor technical challenge at the beginning in dealing with isolation switches with one participant, the implementation team in Germany experienced a relatively smooth implementation process with households remaining largely engaged and good response rates to the weekly surveys. A minor challenge was faced when it turned

D4.4 Harvesting ELL Experiences

out that not all ELL2 households could come to the first focus group, which resulted in a good discussion among implementation teams and two proposed solution strategies: an additional focus group for the remaining participants or individual deliberation interviews (as done in the case of ELL 1). A challenge in relation to data gathering that was identified by the implementation team in Germany for all others was that households provided rather inaccurate information about their 'common' laundry/ heating routines in the baseline survey. Due to resource and time constraints, the team in Germany also faced the challenge of finalizing exit interviews before Christmas, and considered shifts in the original planning. In the end, the problem could be resolved by holding some of these phone calls by phone.

Hungary: The implementation team in Hungary faced no major challenges during ELL implementation. Participating households remained motivated and engaged throughout the process. Being well-prepared and starting a bit earlier than the other ELLs, the Hungarian ELLs played, in fact, the role of front-runner identifying both potential bottlenecks (e.g. the timelines set for finishing certain communication materials and research instruments) and promising good practices (e.g. bringing diaries to focus group to enhance the discussion) for the other implementation teams.

Ireland: The implementation team reported a number of challenges throughout the process. In the beginning, the team faced some technical difficulties with the Online Monitoring Platform, most of which could be resolved promptly. Also the relative distance of the team to the implementation meant a burden in terms of travel time. The rural character of the site implied additional time investment for building trust and explaining the ELL set-up. One challenge confronted by the implementation team in Ireland here was that it was above all the higher-educated participants attending the focus groups. Besides, researchers were confronted with the gendered dimensions of the household participation (men assuming more knowledge about heating and women taking care of the washing). Despite the mentioned challenges, the overall interaction with households went very well and the ELL implementation in Ireland was successfully completed.

Netherlands: The implementation in the Netherlands had a smooth implementation process and reported very few challenges. In the starting phase, it proved impossible in several houses to place the energy meters because the machines appeared to be connected directly into the wall. Later, the team noticed the fairly absent interaction of ELL2 participants on the WhatsApp group and struggled with finding ways to stimulate more interaction.

Switzerland: The implementation team in Switzerland also had a smooth process facing few challenges. As in the Netherlands, it appeared impossible to install the energy meter in some houses due to washing machines being directly connected to the wall. Moreover, the implementation partner reported that the energy meters may be difficult to read for some households. However, households remained engaged throughout the challenges period and filled in the weekly surveys. However, during the heating challenge ELL2 participants realized that – due to heat leaking between apartments of the same building – it was

D4.4 Harvesting ELL Experiences

impossible to bring the temperature down to below 20 degrees, even with no use of the heating.

United Kingdom: The implementation team in the United Kingdom faced a number of challenges. At the start, there were some issues with the equipment (late arrival, problems with installation in some households). As the research team had to rely on the local partner for ELL2 recruitment, there was less of an understanding of those households and their circumstances, as well as their cultural background (the community living lab comprised mainly first and second generation immigrants). Communication with ELL2 participants was not always as effective as desired and not everyone had a good command of English in this hard-to-reach group; also ELL2 was split into two sub-groups on gender lines for focus groups, which had an effect on the overall level of interaction and communication within ELL2. The focus groups resulted in less useful qualitative data. There was a relatively high number of dropouts and low level of engagement in ELL2.

ISSUES ADRESSED:

During each call, a list of topics to be discussed was established throughout the call and addressed at the end. Issues on this list were either brought up explicitly by participants or identified jointly after listening to one or several reports. These issues were either technical, otherwise operational or related to data analysis plans and therefore feeding into WP5. During the monitoring calls, we strived for a good understanding of the problem, checked whether other partners ran into similar problems, and formulated an action point if necessary. To find a solution was not part of the call and was dealt with in other settings. The chair reported during the following call if and how the issue has been or will be addressed.

Technical issues were often related to the Online Monitoring Platform (OMP) and its functionality for the different implementation teams. The team for Ireland, for example, encountered language difficulties with using the OMP. This could quickly be resolved by changing their OMP environment to an Irish country profile.

Other operational issues often related to the details of the implementation of specific data collection instruments, such as the weekly surveys or interviews. One example was the question of who in a household needs to sign the consent forms, especially in case of several persons partaking in an interview. After consulting the data protection officer at Maastricht University, the WP4 team could clarify that the interviews were supposed to be held with one person of each household and that this person signs the consent form “on behalf of” the entire household. However, if another person joins (unexpectedly), a consent of the additional person was necessary to ensure ‘lawful processing’ of the data. Operational issues were also related to questions from implementation teams about minor variations in the ELL design, such as an additional meeting for ELL2 participants planned in Hungary or an encouraging Email sent to ELL participants for continuing the heat challenge in Denmark.

D4.4 Harvesting ELL Experiences

Issues in relation to data analysis often arose when implementation teams started to wonder about the format and exact details in which data will need to be shared. They provided good opportunities for WP5 to fine-tune the planning of the analysis. For example, a discussion during the first monitoring call on 11 September 2018 of several minor issues with the OMP led to the insight that a data cleaning protocol would need to be developed for guiding further cross-case comparison. During the third monitoring call on the 9th of October, participants identified the necessity to merge IDs on the OMP, in case single participating households have multiple (survey) IDs. During the sixth monitoring call on 20 November 2018, the idea was generated to capture the mode of data collection, as well as the recording date in relation to the overall local ELL timeline.

REFLECTIONS:

The monitoring calls worked well in terms of creating transparency between the implementation processes in various sites. It helped implementation teams to reflect on their ongoing implementation process, to anticipate next steps and to learn from good practices and challenges experienced by other implementation teams. Most issues – excluding some technical quarrels related to the OMP – arising during the calls could be addressed satisfactorily either immediately or in the two-week period between calls. There was no need to separately engage the “ELL implementation advisory board” including representatives of WP4, WP5 and WP8.

However, the chosen format of the monitoring calls also limited the space for deeper discussion of the implementation experiences and more in-depth form of exchange. 5-10 minutes per partner for feedback is very little. Besides, there was little time for discussing emerging and potentially cross-cutting issues at length. The strength of the monitoring calls may therefore be seen in providing a relatively efficient way of keeping each other updated and taking up technical and operational issues. The final evaluation survey offered more space to share and discuss deeper issues with ELL implementation.

PART IV: OUTCOMES OF EVALUATING THE ELL IMPLEMENTATION PROCESS

This section is based on the third monitoring survey “Evaluating the Local ELL implementation” (see Appendix 2), filled in by all the corresponding local ELL implementing partner:

- Denmark (AAU)
- Finland (UH)
- Germany (LMU)
- Hungary (GDI)
- Ireland (NUIG)
- Netherlands (UM)
- Switzerland (UNIGE)
- United Kingdom (KUL)

The survey was distributed to the implementation partners in late January 2019 and returned by mid-February.

The main goal of this survey was to compare the implementation experience with the original local implementation plan and harvest lessons and experiences, also taking into account the possible scale-up of ELLs.

ACCOUNTING FOR CHANGES

Remarkably, partners indicated only minor changes to the original implementation plan, which testifies to a thorough preparation process and a robust ELL design. Most of the changes were due to technical circumstances or external factors. None of the changes implied a substantive deviation of the envisioned ELL design that would have made the ELLs incomparable, and all implementation teams provided good reasons for those minor changes that were deemed necessary. The following table provides an overview of changes in local ELL implementation.

OVERVIEW OF CHANGES IN LOCAL ELL IMPLEMENTATION

ELL1	<i>Description of the change in relation to local Implementation Plan</i>
First home visits	Denmark: very few participants could install the energy meters, and meetings took longer than anticipated Finland: few participants lost in this stage UK: local partner helped to deliver and install equipment
Baseline	Denmark: some people found it difficult to fill in Ireland: 3 weeks instead of 4 weeks of baseline
Deliberation interviews	Denmark: lasted longer than expected and many people asked questions about the targets and purpose of the challenges
Laundry challenge	Netherlands: 2 households participated without energy meters UK: in many households it was not possible to connect the energy monitor to the washing machine due to the inaccessible location of the socket
Heating challenge	Denmark: several participants found it hard to reduce to 18 degrees; some because of their houses being very well insulated, others because of social expectations and comfort standards.
Diaries	<i>No changes experienced by any of the partners</i>
Weekly surveys	Denmark: reminders were often necessary Ireland: Not sent at the start of the week, but a few hours before they were due to be completed
Exit interviews	Netherlands: some interviews were taken by phone
Closing survey	Hungary: free “energy advice” was provided by experts to interested households towards the end of the heating challenge period Ireland: completed after the completion of exit interviews, on paper and online

ELL2	<i>Description of the change in relation to local Implementation Plan</i>
First home visits	Denmark: very few participants could install the energy meters, and meetings took longer than anticipated

D4.4 Harvesting ELL Experiences

	<p>Finland: few participants lost in this stage</p> <p>UK: conducted by local partner rather than research team</p>
Baseline	<p>Ireland: 3 weeks instead of 4 weeks of baseline</p> <p>UK: survey done mostly face-to-face rather than online</p>
Focus group 1	<p>Denmark: not everyone showed up, and one group of elderly was difficult to engage in discussions</p> <p>Germany: 2 focus group meetings held, due to availability of participants</p> <p>Hungary: one additional meeting was organized for ELL2 participants in between focus group 1 and 2</p> <p>Ireland: Participants that could not attend were interviewed individually</p> <p>Switzerland: no additional focus group meeting with participating households unable to attend the first one</p> <p>UK: two focus sub-groups, (one comprised mainly males, another – mainly females), both relatively short (approx 1,5-2h)</p>
Laundry challenge	<i>No changes experienced by any of the partners</i>
Heating challenge	UK: ELL2 participants agreed to general challenge; few ELL1 participants opted for individual challenges
Diaries	<i>No changes experienced by any of the partners</i>
Weekly surveys	<p>Denmark: Several participants needed reminders</p> <p>Ireland: Not sent at the start of the week, but a few hours before they were due to be completed</p> <p>UK: very low completion rates</p>
Focus group 2	<p>Germany: 2 focus groups held, due to availability of participants</p> <p>Ireland: Participants that could not attend were interviewed individually</p> <p>UK: the two focus sub-groups mainly split on gender lines; conducted at two different venues</p>
Closing survey	<p>Hungary: free “energy advice” was provided by experts to interested households towards the end of the heating challenge period</p> <p>Ireland: completed after the completion of exit interviews, on paper and online</p>

REFLECTIONS ON IMPLEMENTATION PROCESS

This section presents key reflections that were provided by the local implementation teams in the 3rd monitoring survey for evaluating their local ELL implementation, and afterwards discussed based on a first draft of this report.

Stakeholder collaboration

Local associations as implementation partners have often played an important role in the recruitment of participants, given their local knowledge, local presence and visibility.

Other stakeholders located/rooted on the specific sites could have been engaged, and performed as local frontrunners during the interventions.

Media involvement was important in some cases and might perhaps be enhanced in the future, and included from the beginning in the ELL preparations.

Site selection

'Easy access' due to the location of both ELL sites being in the same municipality has been advantageous. Running both ELLs in two different locations and/ or in remote sites has implied additional complications (travel time and comparability).

There were no problems during the ELL implementation regardless of the preliminary concerns that ELL participants would interfere with each other because of living in the same town.

Recruitment

Active engagement of local stakeholders in distributing the call for participation contributed to the success of the recruitment in many cases.

In many cases it proved difficult to reach households were often already aware of sustainable energy use in one way or another. The strategies to include households who had not previously considered their energy use with regard to sustainability still need improvement.

Data collection tools

Discussions about data collection tools reflect for a good part quantitative versus qualitative preferences of the ENERGISE consortium and made the reach of an agreement a challenge

The Online Monitoring Platform (OMP) was a helpful tool for sending out e.g. weekly surveys and reminders. However, several researchers using it would have desired more flexibility in the settings and use of the OMP.

D4.4 Harvesting ELL Experiences

The use of online survey tools for questions related to pre-existing knowledge suffer from a significant shortcoming as respondents can simply pause and check details before submitting answers thereby changing the nature and interpretation of the question.

Weekly surveys were not labeled according to dates, but according to week number, this confused participants with regard to the relevant data to use for the completion of surveys.

For future ELL implementations, tools should be considered that are more accessible to people with low computer/ overall literacy.

Filling in the diary and weekly surveys was experienced as repetitive by some households. While the laundry diary is important towards reflexivity around laundry practices, the temperature diary seems less important and could be done online.

Thermometers and electricity meters have appeared to be useful for several households, supporting them towards being more reflexive in their energy practices.

Design of the challenges:

It could have been interesting to reduce consumption in other areas as well (participants mentioned energy consumption from cars, IT use, meat consumption and flying). Somehow, it seems like the focus on two domains reduced the individual motivation to challenge themselves on other consumption areas. At the same time, participants expressed satisfaction with the practical and limited focus of the challenges – it became feasible to do them and try out things within these domains because it was so practically oriented.

The collaborative challenge was essential to the design and should be maintained (versus competitive gaming for example). The challenge kits and insights distributed to households should also be maintained.

For ELL2 it is useful to not only consider ‘communities of place’ but also ‘communities of interest’.

The organisation of more intermediate events (DIY eco-detergent workshop, knitting workshop, etc.) with ELL2 participants, as done in the case of Hungary, can be beneficial for the stimulation of social interaction, exchange of experiences and good practices, etc. Planning more group meetings and including group building activities would also have helped to facilitate the ELL2 more.

The experience of several implementation teams suggests that one should not assume that participants will share the environmental concerns of the project and potentially harness the challenges to other concerns – e.g. money saving.

Timeline

The timing of the ELL created quite a lot of pressure for the implementation teams. It would have helped if there had been a few more weeks available for implementation. Implementation teams struggled to get the entire process done in December before the Christmas break. More flexibility would have been useful as regards the timeline for implementation.

It could be interesting to extend the period where participants engage in both challenges. However, in ELL2, that period proved the most difficult one due to the design of buildings (small houses with little space to line-dry clothes, which would not dry when it was too cold). This means that further guidance would be necessary for participating households.

The heating challenge would have been more effective if the weather had been less forgiving at the beginning of November. For a future ELL intervention it might be useful to select dates in the 'middle' of winter (later in the year compared to the ENERGISE-timeline) in order to avoid any influence of high temperatures on the results. Regarding the length, it would be interesting to be able to monitor the baseline and the challenge period for a longer period.

The duration of the challenges could be extended, as 4 weeks seemed too short according to some responses provided by the participating households.

PART V: OUTCOMES OF THE WP3 WORKSHOP "FEEDBACK ON THE ELL DESIGN"

Eeva-Lotta Apajalahti, Senja Laakso and Eva Heiskanen, University of Helsinki

After the end of the ELLs, the consortium reflected back on the design of ELLs, while also keeping an eye on how practitioners can design and implement practice-based interventions such as ELLs in their own contexts. During Work Package3 workshop in Budapest, January 2019, we worked in three groups for 45 minutes. Based on our experiences in ELL implementation, we collected elements of what to keep, what to reconsider and what to add for future living lab design. At the end of these notes, you can find the list of the post-it-notes' content. Based on the feedback, the initial design of the ELLs was elaborated and the online tools and an online user community were developed for scaling up, designing, implementing and evaluating a host of ENERGISE Living Labs across Europe (see Laakso et al. 2019, D3.6).

CHALLENGES AND THEIR SCALABILITY

When considering the scalability of the ENERGISE living labs a distinction is made between implementation as part of a research initiative and implementation as part of a sustainable consumption initiative; the latter naturally necessitating less intensive data collection and monitoring. For example, based on discussions in Budapest, it was noted that temperature loggers, while important for an ex-post evaluation/validation as part of a research initiative, would not necessarily be a necessary component in the design of a future scaled up initiative. Calibrated loggers are also relatively expensive, and necessarily require analytical expertise in order to deliver added value for practitioners in future living labs.

More generally, the challenge format of the living labs was considered good and suitable for the aims of ENERGISE. Competition, for example, would not have worked as well as the challenge. This was one of the key aspects of the design: collaboration instead of competition, supportive but not prescriptive. There was also quite wide consensus that the challenges were simple and easy of households to understand. Many liked the "low tech" style of the experiment. Based on discussions in Budapest, there was a sense that the loggers may not be necessary in the design of future living labs.

Focusing on the two domains defined beforehand was seen as a limitation. Some households already washed very little, perhaps one cycle per week, and some already maintained their normal indoor temperature at 18-19 degrees. Therefore, not all households considered the challenges very challenging. Opening up deliberation for more domains, such as eating meat, showering, commuting or travelling, as well as making the challenges, timelines and implementation more flexible, would have enabled making the challenges more suitable for both the participants and the implementation partners.

D4.4 Harvesting ELL Experiences

Therefore, the first meetings with the households/focus groups could be about co-designing the challenges (i.e. “choose your domain!”). This of course would require adjusted design for the living lab but the basic design of living lab could be modified for several different domains.

Some of the households asked for better justification for the challenges: if the goal of the living lab is to reduce energy use, why should they focus on reducing laundry as it is not that energy intensive? Preparing to answer to these kinds of questions would have been useful for all those doing the interviews and meeting the households.

The deliberation phase was considered important, as well as the baseline period. Some of the partners felt that it was good to deliberate individually with households, as this enabled discussion on each households’ situation better than the group discussion. On the other hand, individual interviews require more resources. For the households, baseline period was an opportunity to already reflect on their habits.

There were discussions on whether living labs are sufficient for changing practices as people might go back to their old habits. One suggestion was to have longer time period for the experimentation, e.g. seven weeks per challenge. Or maybe conduct larger scale pilots, in which the challenge period would not be as intensive challenge but longer and simpler and engage larger number of households in, for example, 6 main cities in the UK, with the focus on pilots and prototypes as well as spillovers from these. It all depends on the goals and funding. Some of the partners thought that yearly challenges or at least a little bit longer than seven weeks challenges would be good. Some partners also thought that four weeks per challenge was enough.

It could also be useful to think about scalability aspects already at the planning stage. Even though the aim of the living lab would not be to scale the experiment, it would be informative to calculate what it would mean if 100,000 households would do the same. This would increase the attractiveness and meaningfulness of the challenges. Engaging media and more active use of social media would amplify the message of the living labs by providing information, ideas and stories for more people as well as engaging in a discourse around normative practices at a societal level. It was also important to think about the key stakeholders already early in the planning stage: who could implement living labs and who could use the findings: intermediaries, city officials, politicians? Implementation partners were considered something to keep and they were considered to be vital for the living labs. Local partners were involved from the recruitment phase to the communication of challenges and outcomes.

AIMS, GOALS AND METHODS

There were several openings on the clarity of challenges, aims and goals and we discussed on what is the purpose of the living lab. When it comes to consider living labs for practitioners, aims should be clearly defined beforehand. Is the aim to understand

D4.4 Harvesting ELL Experiences

practices and their change in a particular context, or to do intra- or cross-country comparisons, or both?

In line with defining the purpose is the use of methodology. What do we/they want to accomplish and how this goal could be achieved? Defining clear goals and aims (and research questions) steers the selection of methods and data that needs to be collected (goals define the means). When it comes to the design of our ENERGISE living labs, there were perhaps “too many cooks” and the aims and goals of the ELLs were very ambitious in relation to time and other resources available. There were also some overlaps in terms of data collection from surveys and interviews that could have been avoided.

There were some disagreements regarding data collection. Filling in weekly surveys and diaries was quite laborious for households and was also one mentioned in the feedback from some of the households, who said that it was hard to remember to respond to questionnaires or fill the diaries (however, some households also liked it). Although, remembering to fill the diaries on the way was seen as somewhat laborious by the households, most of the participants also thought that the diaries were very useful and the meters informative. Diaries and meters gave simple feedback on daily activities. This was something to keep. When we consider the results, we should take into account diaries and meters as material artifacts. For some researchers, it was a surprise how people used meters so rarely. Many of us noticed that the survey response rate for the online weekly surveys started to decline towards the end of the challenges as people started to skip them.

The necessity of surveys was discussed. Especially the recruitment survey could have been shorter and it is important to think about the needs of the implementers: for example, are they interested on who is the main person of the household or not? Many phases of data collection were designed for research purposes, and these are not always necessary for practitioners but they should think about the needs for data well in advance and plan the data collection accordingly. For example, cross-country comparisons might not necessarily be relevant for future living labs. In addition, coordinating the survey and diary processes in each country to ensure their comparability was also resource-intensive.

We had discussion on the project time schedule, which was seen to more or less dominate the implementation. At the same time, this is natural as we wanted to implement the challenges somewhat at the same time. For the heating challenge many would have chosen January instead of November, as the fall can be (and in this case was) warm. On the other hand, November enabled us to observe what happens if people did not turn on the heating in the first place. If the challenges had started on a different time of the year the results could have been different. One suggestion was that we could have had marginal control period last year at the same time to have better baseline. Related to the time line, one suggestion was to drop the one overlapping week for laundry and heating for keeping the challenges simpler.

D4.4 Harvesting ELL Experiences

Lastly, data sharing was also discussed. What data will be shared and made available for all? There is a lot of data and some of it might not be used, but we cannot uncollect it either and it might be useful in the future. Some data is analysed only within country. Should all the data be accessible for all? These type of issues also merit consideration.

RECRUITMENT AND ENGAGEMENT OF THE HOUSEHOLDS

When it comes to selection of the households, it was good to try to get hard-to-reach groups involved in the ELLs but it also had its shortcomings: perhaps they are not the most energy consuming people, and the groups can be very different from each other, making comparisons difficult. Focusing on hard-to-reach groups was not perhaps the best recruitment strategy. We need to have totally different approach for hard to reach, for example by working with NGO's who work with these groups (as GDI had done).

For some of the participants, the challenge was a bit stressful. For example, if the child got sick, there was an immediate thought of dropping out. It could have been communicated better in some occasions that exceptions can be made and that these are okay, if just explained in the weekly surveys or interviews. The message should be that "just" try to do the challenges and do not stress if you can't do it all the way. We do not know the end result either, we are experiencing with the households and are more interested in the process than about the achievement of the targets.

We also discussed whether the project was "ours", "theirs" or common endeavor. Some participants just did the obligatory things and waited for the challenges to end. This way participants were polite as they did not want to "ruin our project". In contrast, some of the participants (maybe the wealthier and more environmentally aware households?) were very enthusiastic.

We also discussed quite a bit about the participants and activities in ELL2. Many partners used "community of place" as a recruitment strategy, although "community of interest" might have provided more shared grounds for the participants. This also relates to the discussion above about the ownership of the project/living lab. In an existing, active community, the challenges would possibly have become real "community effort". Some people also might not like joining in any new groups. For example, introducing challenges at the work community would reveal more shared norms and possibly challenge conventions such as of being clean, tidy and smart at the office. Adding community tools and communal effects was something to add and was raised at each group discussion.

The group dynamics within the ELLs also varied and could be activated: by adding an extra informal group meeting, participants started to use Facebook group more actively. However, this also depends on the existing group dynamics and whether the group was a pre-formed community or created for the purposes of the project. We should provide more advice and tools for community engagement for the implementers of future living labs, as well as more alternative ways to engage the community and to facilitate interaction within the community. This is critical to reconsider in planning community living labs.

D4.4 Harvesting ELL Experiences

There was also a discussion whether we could drop the whole ELL1. Meeting face to face with the 20 households three times during the living labs was time and resource intensive and many practitioners do not have the needed resources. Yet these deliberations were incredibly effective, as meetings enabled reflexive discussions around social norms that underpin practices. For the guidelines we could set the “optimum” time for how long recruitment and implementation could take. Many participants in the ELL1 also felt that it would have been nice to discuss with someone and share experiences. However, some issues are preferably shared more privately, so there should be an opportunity for meeting individually. Some people might also feel uncomfortable in group discussions, whereas others might dominate the discussion. Keeping the collective aspects of the ELL2 was seen important as sharing the experiences is vital for learning and getting peer support.

The following points were written on post-it notes in the workshop:

TO KEEP

- the challenge and non-competitive elements
- at least 4 week challenge, maybe even 7 week challenge
- low-tech approach, less gadgets (e.g. no thermo-loggers)
- thermometers for heating and electricity meters for understanding wash programs (simple feedback)
- diaries for laundry as an opportunity to reflect
- tips and the box (sustainable products, need to carefully think what to include)
- collective elements of ELL2: sharing experiences with other participants
- baseline measurements (already a wake-up and opportunity to reflect)
- deliberation individually with households (moment of rupture)
- cross-cultural focus (interesting to see how challenges worked differently)
- strong collaboration with local implementation partners (e.g. in recruitment)

TO ADD

- flexibility in relation to timelines for recruitment, implementation (e.g. in relation to weather), domains, challenges (e.g. peak hour challenge, water use challenge) etc
- degree range instead of specific degree for households to aim at

D4.4 Harvesting ELL Experiences

- alternatives for those who already wash less laundry or have 18 C indoors
- more practice-oriented information (e.g. on safety, hygiene, recommended wash temperatures etc.)
- more tips
- involving households in framing the problem and co-producing the challenges, consider decision making processes and relations within households in committing to the challenge
- community of interest rather than of place, groups of more similar households (easier to compare)
- interaction among households (meetings, activities, sharing stories), approaches to facilitate peer to peer learning
- more stakeholder involvement (e.g. in the final seminar) to allow scalability
- more media engagements: target media to improve dissemination, engaging media at early stage as one of the key stakeholders, bring them on the “journey” with households or even including a journalist as a participant, social media
- monitor better social diffusion of ideas from ELLs
- clear evaluation criteria à more focused data collection
- connecting new projects to existing ones (energy communities)

TO RECONSIDER

- usefulness of individual approach without any communal elements
- unified challenge for all (more flexibility)
- less data collection: heating journals, in-depth interviews, weekly surveys (if longer challenge)
- technical aspects, equipment (e.g. thermologgers)
- detailed measurements of e.g. windows
- energy bills etc (may be difficult to collect)
- hard-to-reach as a recruitment strategy, challenging to compare if different groups
- community of place as a recruitment strategy
- too many competing goals (hard-to-reach, domains, etc)

D4.4 Harvesting ELL Experiences

TO CONSIDER:

- opportunistic vs. strategic site selection
- transferability of the challenges

PART VI: FEEDBACK BY EXTERNAL PARTNERS AND PARTICIPANTS

This section presents a country-based overview of the feedback the respective ELL implementation team received from external partners and participating households.

DENMARK

Roskilde Municipality (RM) was very engaged in helping with identifying relevant site-locations, they played a crucial role in the recruitment phase and in taking part in arranging the final Local ELL workshop in May 2019. In general RM was very interested in the approach and the results, and several actors from the city council as well as the local climate council participated with interest in the final local ELL workshop. They have later asked to receive the final results from the ENERGISE project as they are interested in learning from it. The Danish ELL team is working on producing a pixi-version of the results for the city council.

The Danish ELL participants have also expressed great interest in the ELL results and in the ENERGISE approach in general. A few quotes that illustrate participants experiences are given below:

“it has been anything but normal” – 6-year old son from ELL1.

- *“it was ‘Mette’ who entered us into the project, and to be honest, I felt it was kind of.. to begin with I didn’t feel this was particularly cool. But I think differently about it now, and I actually feel this has been really good. I mean, well, I can see we’ve actually changed some things” – husband from ELL1.*

- *“of course, I think people think, “I have the right to not freeze in my own home”.. “Of course it is a (human) right”....but when you think about it....as we do here, now.. then of course we know that we could also just wear some warmer sweaters” – female participant from ELL2.*

- *“We really enjoyed participating. We still use several of your suggestions” – Elder participant from ELL1.*

FINLAND

External partners participating in the project were very satisfied with the results, as well as with the opportunity to engage with local households in a new way. They found the project's approach novel and interesting, and were encouraged to engage in questioning everyday routines in their own work.

As concerns the participants, open-ended comments at the end of the Finnish ELL follow-up questionnaire indicate a general appreciation of the challenges, willingness to participate in other such initiatives, and to engage others in doing so, at least among a share of the participants. Thirteen respondents (out of 33) offered open-ended comments, most of them stating it was fun to participate or that the project was a useful experience that made them think about and question their routines. Some examples include the following:

- *“The project inspired me to monitor our indoor temperature and laundering and made me change my ways, so it was very good! The info packages were good and useful. The implementation of the project was clear and the meetings with the project team were nice and rewarding. Thanks for a good and important project! This kind of thing would be needed more widely. What should we experiment with next?”*

- *“It was surprisingly good. At the start I was contemptuous of the challenge and thought I was ecological. I noticed that the real challenges of today are much more serious and embedded than one thinks. The project came at a super time: so many climate issues came at the same time and the project eased my anxiety. I am now spreading the message and willing to try other things, too. I have also changed my diet on the basis of Sitra's CO₂ calculator¹.”*

- *“It was interesting to participate. I was surprised how much one can change by changing one's laundry routines. I am looking forward to the results of the project.”*

- *“The project was very interesting and it was easy to participate. The meetings were useful and enjoyable, due to the opportunity to share and hear others' experiences. I hope to run into the results of the project elsewhere and that it would reach people.”*

¹ A carbon footprint calculator available online, and providing tips for changing sustainability. Online: <https://elamantapatesti.sitra.fi/>

GERMANY

Overall impressions from ELL participants in terms of the delivery, outlay and format of the study were very positive. When asked to elaborate on the changes households made in monitoring energy use, many households pointed to the fact that the ELLs heightened their awareness of the issue and the monitoring devices/tools keep it more present in their minds

Other households were confident in their pre-existing energy awareness and in their daily actions without the need to monitor consumption while some households admitted that some aspects of their practices had return to pre-ELL levels.

Some households described how they more diligently strategize around heating and laundry and other related energy practices to reduce the energy required.

Specifically on the delivery of the project itself households were again, generally very positive with households citing that the project was informative and helpful in terms of energy awareness with the inclusion of monitoring equipment highlighted as a very positive element.

The heating challenge was criticised however by one household who felt that a uniform target temperature was very difficult to maintain. This point was also reflected by another household who said that they felt it would be better to reduce the existing relative daily temperature profile rather than set a uniform target temperature for the entire day.

- *"Overall, the topic is more present in everyday life, which often changes smaller processes or at least questions whether there might be another, better solution."*

- *"We are all more attentive to the temperature in the rooms, the heating is much rarer and at much lower temperatures, and we also make sure to wash everything out and only wash it when it's really necessary."*

- *"I think it is better to adjust the heating all the time. Yes, of course we can adjust the system manually but the temperatures that we had set before the challenge worked perfect for us. During day time, when all are back home at 13:00 pm the heating goes up to 22/23 degrees. In the living room. It is more comfortable to turn up the heating than to wear more clothes."*

HUNGARY

From Hungary (source: Vadovics, E. and Pap-Szuromi, O. (2019): Living Lab Country Report - Hungary. pp. 60-61.):

For feedback from participants we look at information from three sources: (1) comments from participants from the closing individual interviews; (2) reflections from participants from the closing focus group discussion; and (3) comments from participants given three months after the completion of the ENERGISE Living Labs in the follow-up survey.

At the end of the individual interviews **ELL1 participants** were asked what they thought about their participation in the Living Labs. They were generally happy to have participated in the challenges and stated that they did learn new practices and skills, as well as received new information about energy use in the home.

- *"It was very interesting to participate; I was interested in finding out more about energy use and saving. It is worth paying attention to these things, I learnt about and became interested in saving energy through changing my everyday practices. It's amazing that I can still find ways to save." (female participant)*

- *"It gave me a good feeling to participate, I'd do it again. The challenge was good as it wasn't too much; it wasn't like we could hardly wait for it to stop although I'm not saying we'll miss writing the diary. And, in the end, even writing the diary wasn't such a big task." (female participant)*

At the same time, although the majority of comments are positive, some participants commented that at times it was very demanding to participate mainly due to the great amount of 'administration' (i.e. writing laundry and heating diaries, filling in weekly surveys, etc.) required. These sentiments are reflected in the quotes below:

- *"[Participation] gave us more things to do; we ended up with more tasks. But it was also challenging. And in return we received new ideas, tips and new experiences. It was interesting." (female participant)*

- *"It was tiring. I was happy to get home, but I still needed to read the meters. Sometimes I wished I did not sign up." (female participant)*

ELL2 participants offered similar comments about participation at the end of the closing focus group discussion. Participants generally loved being part of the ELL2 and nobody had any regrets about joining. For all it was great to belong to this group and participate at the meetings.

People loved the challenge kits and the meters. However, they also liked the fact that the ELL was all carefully thought out and everything was carefully planned. And even though there was a challenge, they could also choose their own challenge, which was good. The ENERGISE Living Labs felt like a game with rules.

D4.4 Harvesting ELL Experiences

The most important comment, about which a lot of participants were quite vocal, is that through participating in the ELL2 they gained confirmation, support and inspiration for leading environmentally friendly lifestyles as well as reducing their consumption. Furthermore, a lot of them would like to continue with their efforts for which there is also proof in sign-ups for various local and national sustainable lifestyle programmes run by GDI (e.g. the local Climate Club, the national E.ON EnergyNeighbourhoods programme).

In addition, participants welcomed the opportunity and gained positive energy and inspiration from belonging to the ELL2 group.

Finally, 14 participants offered comments about participation and the ENERGISE Living Labs at the end of the **follow-up survey**. These comments are overwhelmingly positive, and several participants even expressed their thankfulness for being able to participate. Below, we provide the translation of several of these comments:

- "It was a great experience for me to participate in this project, it was really inspiring, it has had an impact on other environmental aspects of my life as well. GreenDependent implemented the project in a very professional way, congratulations!!!" (female participant)

- "This is a great initiative! There definitely was a challenge. The presents were great and very good quality :)" (female participant)

- "I had a great time at the group events. The questions and tasks were good as they helped me become even more conscious about my energy use and focus more on my use. I think paying attention to these kinds of things has become part of my everyday life, thank you." (female participant)

- "It was interesting, I'd be happy to do the same with other focus areas." (female participant)

- "Thank you for the opportunity to participate, we have truly learnt and experienced a lot!" (female participant)

IRELAND

Feedback from participants based in Ireland was very positive overall and most households felt participation had a positive impact on their lives. One household reduced their indoor temperature from 24°C to 17/18°C, calculating that they would save approximately €2,000 per year. Another household was delighted with the help in reducing laundry and halved their weekly number of washes from 14 to 7. When asked if they enjoyed participating in the ELLS, participants commented:

- *“I like a challenge. I like studying things. I like innovation. I like thinking about things and thinking sure it doesn’t have to be that way, yea I enjoy that kind of thing. I like keeping charts and comparing and I’m interested in that type of thing. But I’m very interested in reducing the carbon footprint. Especially Ireland, we’re way behind.”*

- *“I would add that we would’ve been pretty conscious. But it was nice to be in a challenge where you were guided by something, or the areas to look at. From that point of view it was nice. We weren’t doing it on our own, we weren’t kind of figuring it out on our own.”*

- *“...this whole projectit’s definitely made me more aware of the amount of mistakes I was making. Certainly using the blooming washing, tumble dryer every day, at least once a day so ridiculous. And now I’ve stopped it. I’m often tempted, oh I’ll just give it a quick and I think no, wait a couple of days and fill it up properly. And then it’s much better.”*

- *“I liked the fact that it wasn’t too time consuming. I liked that there wasn’t a lot of reporting, there wasn’t a lot of writing up from the point of view of time, it wasn’t time consuming. And it was a positive challenge, it impacted positively on the way I do my laundry routine and also on the way we heat our house.”*

- *“I felt I was participating in something. It didn’t take too much of my time and if it can make a difference to any one thing. I’d like to think it did but I don’t see how. And (the researcher) always answered our questions and a total pleasure just to sit and have a chat. That’s what it feels like rather than an interview.”*

- *“... I think it would definitely have changed us for the better.”*

Participants in Ireland also offered suggestions for how to broaden the reach of the project:

- *“I suppose coming from a sales and marketing background I could tell you an initiative of some form working towards something is always a good thing for people...The paper system is great but if you had an online log. If you had an account where you could go into the energise website and log in and just upload your data.”*

- *“more awareness of how society makes you do different things that you don’t think about as you’re doing it”*

- *“You change your ways when you hear what other people do”*

NETHERLANDS

Overall participants had a positive response to the ENERGISE project and its laundry and heating challenges. Several participants reported that they enjoyed the challenges, and that participating in the ELL was easy and comfortable. Many stated that reading the thermometers every week was their least favorite part about the project, but that the diaries and questionnaires were easy to complete, and that the communication and set up of the challenges was clear throughout. Participants reported that they felt more engaged with their energy use, and that attitude towards it had changed. Some households criticized the project, however, stating that the uniform targets made it difficult to achieve the challenges. Others stated that they would have appreciated receiving an indication of their energy use in comparison to others or to a recommended level of energy use. Those who were under the impression that their household (pre-ELL) was energy-conscious may have been less motivated in their participation because of this.

Quotes were obtained from EXIT Interviews and EXIT focus group meetings unless otherwise indicated:

- *“Because of our consciousness with regard to our energy use, we were interested in participating in the project and gaining insights in our routines.”*

Focus group attendee: “The fact that we committed to these challenges as a group motivated me to really engage with the challenge.”

- *“We had completely forgotten about the challenge box and placed it in the basement. Then, when we received the email telling us to open the box and start the challenge that was a nice little surprise, and an impulse to start changing things.”*

- *“The [ENERGISE] project did stimulate me to look more critically at whether items of clothing needed to be washed. I used to wash a lot of items on 60*, and now I often use 40*”*

- *“I would recommend anyone to do such a challenge. The concept of a challenge really makes you reconsider your routine and could be used to change other things in your life too.”*

- *“What I did not enjoy so much was that in the evening, I would often be relaxing on the couch and suddenly realize “oh right, the thermometers.” Then, although you just got comfortable on the couch, you have to go upstairs and write down the temperatures in each room. Yes, that was the only thing that I found annoying, was reading the thermometers.”*

- *“I feel fine, every week I received an email {with the questionnaire}, sometimes the time varied a little bit, but it went well. It was all communicated very well; there is nothing else I can really say about it. I had fun participating – and [husband] has nice slippers now!”*

D4.4 Harvesting ELL Experiences

- *Focus group attendee: “The fact that we committed as a group stimulated me to live more sustainably and consciously.”*
- *“While the project has a promising premise, we felt that the challenges should have been more personalized. The incentive to wash less or turn down the heating becomes bigger with a baseline measurement which is compared to the general energy usage in e.g. NL or Limburg or EU. Sure, we can always do more (half our washing, turn the heating 1 degree lower), but it would have been helpful to see how we fare as a starting point in a comparative setting. People who were participating in this research are most likely already involved in thinking about their energy consumption and have figured out that wearing warm socks, drinking a tea and having a blanket are useful tools to prevent us from warming the living to 22 degrees and that wearing an apron is helpful in keeping clothes clean...” (from follow-up survey)*
- *“Taking part did not require much effort from us, and we enjoyed participating in the project. We are also really happy with the gifts we received!” (from follow-up survey)*
- *“I very much enjoyed participating in the project. Especially the [ELL2] meetings in the Oranjerie, where we received lots of useful information.” (from follow-up survey)*

SWITZERLAND

The University of Geneva hosted a first event to gather impressions by implementation partners on March 26, 2019; a closing event to communicate results is planned for June 2019. At this event, Grégoire Wallenborn presented the ENERGISE approach and ELL design, in a panel discussion with our two implementation partners: Wladislaw Sen from Terragir, and Damien Varesano from Urbamonde. An emphasis was placed on the value of these forms of experimentation, where social norms are discussed and possibly contested. We were joined by Nathalie Ortar, from ENTPE-Laboratoire Aménagement Economie Transports, who reflected on her own experiences in organizing similar forms of experimentation in the context of France. Both implementation partners expressed much enthusiasm about the project approach. In addition, Cédric Jeanneret from the Geneva utility company SIG was on the panel, and expressed his support for the living lab approach. Two household participants were also present at the forum, and one in particular discussed how important it was for him to engage in deep reflections on his consumption practices; the project allowed him to reconsider his habits and routines, in a bounded space and time.

In relation to feedback from household participants, drawn from exit interviews and the final focus group, people were generally enthusiastic about the Living Labs. For one other participant (male, 47 years old), the main motivation was to help in the creation of new ways of life, and having a transformative effect on routinized everyday life:

- *“ It’s like the challenge is really this idea of, if my own experience, what’s happened to me... if that can be useful for gathering info and preparing other ways of doing things in the future, and changing the model that we have from before them, I’m happy to give my time, to the extent that I feel like there’s a solid basis behind it all (...) and that there will be an impact afterwards.”*

Some also liked sharing their experience with the research team through the diaries, surveys, interviews and focus groups. They hope their participation will play a part in supporting more sustainable energy consumption practices. One woman says:

- *“ Yes, we think about it more. Yes. Whereas normally, I don’t think about it at all, but it becomes a habit. Where as now, it’s more... well, I have to look at the temperature, that’s it. All these little things that I never used to do.”*

One participant plans to keep on writing a laundry diary, as she found it very useful to keep track of her habits. Another woman talked about “taking a step in the right direction”:

- *“Yes, well, also to be happy to take a step in the right direction, towards something more... better for the environment.”*

UNITED KINGDOM²

Overall, the project was regarded as useful, interesting and enjoyable by most ELL1 participants.

- *“We actually really enjoyed it. I think because [...] we thought we were really good with our heating and our washing but it shows we had a lot of room for improvement and we just kind of enjoyed it being a bit like a test but now it’s just what we do so for us it was great in that regard.”* (UK02)

Taking part in the study made people ‘feeling being useful’, and the fact that their way of living is of interest to researchers gave them ‘quite a nice feeling’. (UK13) Some admitted that they were pleased and ‘quite honoured’ to be part of the project. (UK27) It was also interesting and even enjoyable for people to put themselves through a ‘trial’ or a ‘test’ and managing/surviving it. Importantly, the project made people more aware of their energy use and habitual behavior, and will potentially have a long-term impact on their energy use in everyday life, including other domains e.g. using a car.

It was very useful for participants to have an actual target e.g. temperature (“actually gave us like a goal” (UK02)).

The participants appreciated the challenge kits (even if not using some of the items), and particularly the veg boxes delivered fortnightly as an incentive.

- *“It was really exciting having the parcels I’ll be honest, even though the things in them were beautiful and lovely but just not quite for me; I wasn’t disappointed about that, so that was nice. And the veg boxes were brilliant [...] that has introduced me to some different veg which is quite satisfying.”* (UK13)

- *“It was fun opening the boxes like the boys were really excited about opening the challenge boxes and we had a good laugh over them...”* (UK08)

A number of suggestions were made by the ELL1 participants regarding the design, timescale and the information support for the project. For example, it was noted that the temperatures were still mild in November and it would be better to do the challenges during colder months. Another suggestion was made regarding the duration – the challenges should run for longer e.g. for a year to account for different seasons. Although for most participants filling in the diaries was not taking much time and was easy to do (“It wasn’t as time consuming as I thought it would be” (UK14)), few people found this task quite tedious:

² See also Harries, T., Iskandarova, M., Genus, A. (2019) *Living Lab Country Report – United Kingdom*. Pp.51-53.

D4.4 Harvesting ELL Experiences

- *“It’s been good, it’s been interesting. I have got a bit frustrated and bored perhaps with filling in the thing. I was glad when it ended actually.”* (UK04)

Some households wish they had more information and practical advice about energy use in homes (from an energy expert perhaps). Few participants think that it would be useful to have more information about what the most energy efficient way of doing things is:

- *“It’s the whole thing isn’t it? It’s almost like you need to know when you’re talking about a water bottle but it takes energy to heat the water to have the hot and you wonder how efficient that is. [...] we need to know these things because at the moment we’re just guessing.”* (UK10)

Only one participant was rather sceptical about the aims and the design of the project, for whom the study has not made much difference, assuming that people’s washing and heating behaviour are driven by perfect rationality (UK09). Arguably, the project involved more of environmentally-minded people and didn’t reach others. However, the project has had an impact even on those who are mindful of their consumption, care for the environment and/or try to save energy:

- *“I suppose what the study’s really done is it has reinforced in me things that I knew I should be doing or that I would temperamentally I’m inclined to do, but sometimes you just forget.”* (UK07)

Some households found the living lab experience very challenging and tough, for others changing their practices was relatively easy. Interestingly that reducing laundry was often found more challenging and harder to achieve for most people than reducing indoor temperature; in some houses the ability to regulate indoor temperature (and to complete the challenge) was conditioned by the state and type of the heating system.

Survey feedback from ELL1 participants was also mainly positive:

- *“It was so worth our time. The time, money and energy we will now save will live with us for our future!”* (UK02)

- *“I enjoyed thinking about it all. It’s actually made me think more seriously about buying a Hybrid car to reduce petrol usage.”* (UK19)

- *“it was really useful thank you so much”* (UK07)

- *“live frugally...”* (UK06)

The feedback provided by few ELL2 participants in the survey at the end of the living lab was generally positive:

D4.4 Harvesting ELL Experiences

- *“It was really good experience.”* (UK31)

- *“It was good to see how we could reduce the number of washing machine loads per week and how we coped with the temperature of the house being lower. We enjoyed the challenge!”* (UK24)

The study did not make much difference to ELL2 participants in terms of energy saving (possibly) but they were happy to take part as it might help them to save money.

APPENDIX 1: TEMPLATE FOR LOCAL ELL IMPLEMENTATION PLAN

FILL IN COUNTRY

INSTRUCTIONS FOR FILLING IN THE FINAL IMPLEMENTATION PLAN TEMPLATE

Please provide concise yet comprehensive answers (app. one paragraph or 150 words per question). For some questions, tables are included that can be used to report your answers. In case you cannot answer a question with certainty or at all, please indicate how definite your answer is and elaborate ideas you are currently considering.

Filling in this template mainly requires updating your implementation plan submitted for D4.1 in May/June 2018. Most of the questions are the same, some have changed due to consortium agreements, and others have been adapted as we are now enquiring about a period in the past: the ELL preparation period. New or adapted questions are highlighted in grey. **Please hand in your final, filled-in implementation plan by Friday, 7 September.** ELL implementation will be monitored based on our bi-weekly consortium calls with local team leads.

1. THE LOCAL ELL IMPLEMENTATION TEAM

Name	Role and tasks	Period of involvement
(local ELL coordinator, main contact for monitoring)		
(member of your organisation)		
(member of your organisation)		
(external partner)		
(external partner)		

- *Who of your organization is involved in ELL implementation? How are the roles and tasks divided? Who is the coordinator of the local implementation team and will be UM's main contact for monitoring (short, one-on-one phone calls)?*
- *Do all members of the implementation team that will work with households have enough expertise on the methods used for data collection or is training needed? How will training be provided?*
- *What other implementation partner/s is/are involved who will have direct contact with (potential) ELL participants and what is/are their role/s in the preparation process?*
- *How do you plan to coordinate your local implementation team throughout ELL preparation and implementation) (e.g. regular meetings, phone calls, reports)?*
- *Is the team complete or is anyone missing? How are you planning to involve (additional) local partners who can support ELL implementation?*

D4.4 Harvesting ELL Experiences

- *Do you have plans for final conference or workshop with ELL participants and other stakeholders?*

2. OTHER STAKEHOLDERS

- *Who are key local gatekeepers/stakeholders and what is their role in the preparation process?*

Stakeholder (organisation, group, person)	Role in the preparation process

- *What local stakeholders are likely to be interested in or benefit from the ELL and our experiences and findings? (see D3.4, step 3 for inspiration and guidance) When and how do you plan to inform or contact them during ELL implementation?*

Organisation <u>and/or</u> type of stakeholder (e.g. local government, local public)	When and how to be contacted

- *How do you plan to communicate with other stakeholders throughout ELL preparation and implementation (e.g. press release, meetings)?*
- *How do you plan to work with media before, during and after the ELL?*

3. SELECTION OF SITE(S)

- *In how far to the site(s) selected for your ELLs reflect the relevant criteria for site selection (see D3.4, step 4, p. 15)? If possible, please provide some indication of the likely socio-economic background of your ELL participants based on the sites you selected.*
- *How have you ensured and will you continue to ensure that ELL1 and ELL2 remain separate?*
- *Do the sites pose some specific challenges or requirements for ELL implementation & monitoring (e.g. far away from your organisation's location, recent local events that affected people)?*

4. RECRUITMENT OF HOUSEHOLDS

- *How have potential participants been contacted (roughly)?*
- *How many potential participants showed interest in participation and how many filled in the recruitment survey?*
- *How have potential participants been selected and what were your reasons for (non-)selection?*
- *If possible, please provide some indication of the socio-economic background of your ELL participants.*
- *How did you ensure “a balanced variety in terms households’ size, income and gender” (see D3.4)?*
- *Which hard-to-reach groups will be involved in your ELLs?*
 - *Hard-to-reach households refer to households who are lacking the means, tools and/or reasons to save energy and who have not been actively involved in participatory processes such as living labs (see D3.2 and D3.4).*
- *What is the scale of the community of place involved in ELL2 (e.g. municipality, neighbourhood, street or building, see D3.4, p. 23)?*

5. TESTING OF SURVEYS AND SUSTAINABILITY ASSESSMENT TOOLS

- *Have you tested the data collection tools (recruitment, baseline and weekly surveys, laundry and heating journal)? Did you make any changes to the tools? If so, please specify/elaborate.*
- *Have you tested the deliberation guides (interview & focus group)? Are you using the example images suggested or different ones that are thematically similar? (If you use different pictures, please upload to EMDESK > WP4 > ELL comm. Material > your country folder.)*
- *Do you have any questions at this stage regarding quantitative and qualitative data analysis?*

6. SPECIFYING THE INTERVENTIONS AND THEIR TIMING

- *Did you make any changes to the contents of the ‘challenge kit’? If yes, which ones and why?*
- *Did you make any changes to the information leaflet that is part of the challenge kit? If yes, which ones and why? (Please upload your leaflets to EMDESK.)*
- *In what ways – if any – does your local ELL planning and timeline deviate from the general ELL planning and timeline (see ELL overview Excel)?*
- *Will (energy expert(s) visit the households? If so, when will they visit and what kind of information will they share with households and in what form?*

7. COMMUNICATION WITH PARTICIPATING HOUSEHOLDS

- *Have you already visited any households to install meters? How did that go? What questions did people ask? How did you communicate the benefits of participation?*
- *How and with which frequency did you touch base with signed-up participants in the period between recruitment and implementation?*
- *How and with what frequency will you contact households during the implementation phase? (How) Will you follow up with households who decide to discontinue their participation (bearing in mind that people do not have to provide reasons)?*
- *How can ELL2 households communicate with each other? How and in how far are you planning to stimulate and encourage discussion?*
- *When will you hold the final debrief and reflection meetings with ELL1 and ELL2 households?*
- *When and how will you share results with ELL1 and ELL2 households?*
- *Will you reward the households for participation? If so, how?*
- *Which ethical issues have you encountered or do you still expect to encounter (in relation to communication with households)?*

Information and engagement materials for participants	When and how to be provided to participating Households

8. DETERMINATION OF RESOURCES

- *Please provide a budget calculation.*

9. REFLECTION ON THE OVERALL PREPARATION PROCESS

- *Which obstacles or problems did you encounter when recruiting households and preparing your ELLs? How did you overcome or solve them?*
- *Do you anticipate further obstacles or risks? Do you have plans for how to deal with them?*
- *Have you encountered positive surprises?*
- *What are your lessons learnt regarding ELL preparation/implementation?*

APPENDIX 2: TEMPLATE FOR 3RD MONITORING SURVEY “EVALUATING THE LOCAL ELL IMPLEMENTATION”

Deadline for return filled in surveys: **15 February 2019**

REFLECTING ON THE PROCESS (ca 500 words)

1. Briefly reflect on your overall experience in relation to the following aspects of the ELL implementation process:
 - a) Collaboration in local ELL implementation team
 - b) Collaboration with other stakeholders
 - c) Collaboration with ENERGISE partners (e.g. bi-weekly monitoring calls)
 - d) ELL design (please mention here deviations from central design, e.g. additional meetings, and provide reasons for those deviations)
 - e) Data collection (surveys, interviews and focus group meetings)
 - f) Role as researcher

2. The role of your implementation partners (if applicable).

How important was your implementation partner(s) in relation to each of the following:

	very important	important	neutral	less important	not important	not applicable
1. Selection of ELL sites						
2. Participant recruitment						
3. Stakeholder identification (other than participants)						
4. Liaising with stakeholders (other than participants)						
5. Creating new networks						
6. Organizing stakeholder events (other than participants)						

D4.4 Harvesting ELL Experiences

7. Organizing ELL participant events						
8. General communication/raising awareness of the project						
9. Providing expert (energy) advice to participants						
10. Providing (you with) advice on local contextual conditions						
11. Developing information and engagement materials for participants						
12. Providing feedback on ELL design/tools/equipment						
13. Data collection						
14. Providing policy recommendations						
15. Diffusion/dissemination of ELL results						
16. Other (specify)						
17. Other (specify)						
18. Do you feel your implementation partner(s) provided overall value for money	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Did not have to cover costs
19. Other comments:						

3. Budget

- Overview of ELL-related expenses (until 31 Jan 2019)

D4.4 Harvesting ELL Experiences

ACCOUNTING FOR CHANGES (ca. 500 words)

4. Please have once more a look at your final local Implementation Plan and fill in the below table where necessary. What went differently than planned, and why? Please include - positive and negative - surprises *and* conscious decision-making deviating from original plans.

ELL1	<i>Description of the change in relation to local Implementation Plan</i>	<i>Reason(s) for change</i>
First home visits		
Baseline		
Deliberation interviews		
Laundry challenge		
Heating challenge		
Diaries		
Weekly surveys		
Exit interviews		
Closing survey		

ELL2	<i>Description of the change in relation to local Implementation Plan</i>	<i>Reason for change</i>
First home visits		
Baseline		
Focus group 1		
Laundry challenge		
Heating challenge		
Diaries		
Weekly surveys		
Focus group 2		
Closing survey		

TAKING LESSONS (ca 500 words)

5. How could we improve the ELL design (and future implementation) in terms of:
 - a) Stakeholder collaboration
 - b) Site selection
 - c) Recruitment
 - d) Data collection tools
 - e) ELL design (e.g. type, length, timing and sequence of challenges, focus of challenges, types of impacts/problem framing, communication/interaction with Households, role as researcher)

6. Budget
 - List your plans for further dissemination or other activities (see email by Edina/WP7 “ELL budget, local dissemination, WP7 publications” on 21 November 2018) incl. indication of planned budget allocation (if possible)