



# REFLECTION REPORT ON PILOT INNOVATIONS

Deliverable No. 4.4

## Abstract

The objective of this deliverable is to present a summary of the key reflections and learning points on the co-creation processes in the three RIPEET pilot regions. A summary of the pilot innovations and key detail on the co-creation process is given for each region. Learnings from the regional co-creation processes are then examined alongside key challenges and mitigation measures. The sustainability of the regional pilots and transition labs is also discussed. An analysis of the key learning points from the co-creation process in the three pilot regions is given alongside an analysis of the principle regional challenges and mitigation measures. The report concludes that co-creation has been a successful means to deliver the three regional pilots and a basis for co-creation best practice guidelines is proposed.

Sarah Marshall

sarah.marshall@hient.co.uk



RIPEET – Responsible Energy Transition

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 101006295 - H2020-SwafS-2018-2020 / H2020-SwafS-2020-1



## Executive Summary

This D4.4 Reflection Report on Pilot Innovations presents a summary of the key reflections and learning points from the energy innovation pilots and their co-creation in the three RIPEET pilot regions: Extremadura (ES), Outer Hebrides of Scotland (UK) and Ostrobothnia (FI).

Each region had a budget of €50,000 to implement a regional pilot project. Four pilots were developed through RIPEET using a co-creation process (one in Extremadura, one in the Outer Hebrides and two in Ostrobothnia, each with a budget of €25,000). Details of the pilots is given below:

**Extremadura:** Project to promote Energy Communities in Extremadura (*Proyecto para la Promoción de Comunidades Energéticas en Extremadura*)

**Outer Hebrides:** Outer Hebrides Local Energy Economy

**Ostrobothnia:** Rural Green Transition in Ostrobothnia – Case Älvbyarna

AND

**Ostrobothnia's** smart energy villages and energy communities – Energy village 3.0 (*Pohjanmaan älykkäät energiakylät ja energiayhteisöt – Energiakylä 3.0*)

All four pilots were successfully co-created in the three regions. Outputs from the co-creation process included:

| Region         | Co-creation outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extremadura    | <ol style="list-style-type: none"> <li>1. A network of 22 highly engaged and motivated promoters across 13 municipalities in Extremadura to kick-start regional energy community projects.</li> <li>2. A “one-stop-shop” website on energy communities which includes: a map to identify key local stakeholders and initiatives to boost collaboration; general information on energy consumption; a calendar of relevant upcoming events; a document library with template documents required for setting up a legally constituted group and three training modules with content relevant to the establishment of energy communities.</li> </ol> |
| Outer Hebrides | <ol style="list-style-type: none"> <li>1. One report summarising the key outputs from WPs 1 – 4 which includes identifying different energy models that the region can explore to reduce household energy costs.</li> <li>2. Two MSc dissertations, one related to WP5 and one related to WP6.</li> <li>3. One report summarising the key conclusions and action points from the energy innovation pilot.</li> <li>4. Four leaflets summarising the key conclusions and action points from the energy innovation pilot.</li> </ol>                                                                                                                |

|              |                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ostrobothnia | <b>Rural Green Transition in Ostrobothnia – Case Älvbyarna</b><br>An online energy calculation tool for buildings and a handbook on village-level energy business models                                                          |
|              | <b>Ostrobothnia's smart energy villages and energy communities – Energy village 3.0 (<i>Pohjanmaan älykkäät energiakylät ja energiayhteisöt – Energiakylä 3.0</i>)</b><br>Results of a SWOT analysis and a Smart Village roadmap. |

It is evident that all regions found the process of co-creation in the course of the development of the energy innovations pilots to be useful. Ostrobothnia did not experience any significant challenges during the co-creation of either of their pilots. Extremadura and the Outer Hebrides, however, both described issues. Extremadura described a need to alter the timing of co-creation sessions to maximise attendance whilst the Outer Hebrides highlighted delays due to staff absence and a need for additional staff resource. All regions were able to effectively mitigate identified risks which resulted in the successful delivery of the four pilots.

Whilst there were differences in the regional co-creation experiences of the regions, common reflections and learnings emerged. These are summarised below and would provide a useful starting point for developing best practice guidelines for co-creation:

- There may be a lack of familiarity with co-creation, adequate time needs to be taken early in the process to ensure that everyone understands the term and process as well as roles and responsibilities of all stakeholders being clearly defined from the outset.
- It is important that somebody takes on a co-creation leadership/coordinator role to take ownership of the process, drive the project forward and maintain momentum.
- Flexibility is needed in the co-creation design process – co-creation needs to be adapted to the specific situation of the project and the relevant stakeholders i.e. tailor the timing, location or mode of delivery (online or in person) of co-creation sessions to ensure maximum/appropriate attendance.
- It may be important to organise a collaborative online workspace to aid group discussion and collaboration during and in between co-creation sessions.
- It is important to clearly communicate the goal of each co-creation session – participants should understand how and when they can influence the process. Not doing so may result in frustration if stakeholders do not feel that their views are being adequately heard.
- Co-creation process dynamics – it is not automatically necessary for everyone to attend every co-creation session. It may be more appropriate to have several smaller co-creation sessions with particular stakeholder groups. This requires an engaged and dedicated co-creation leader who knows whom to involve when and can facilitate the discussions and communicate the main messages between different sessions and meetings. This avoids stakeholders being involved in sessions which are not relevant to them thus reducing the risk of meeting fatigue.

## Deliverable Information

| D4.4 – Reflection Report on Pilot Innovations |                                                                                                                                                                               |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Deliverable number                            | D4.4                                                                                                                                                                          |
| Responsible partner                           | Highlands and Islands Enterprise (HIE)                                                                                                                                        |
| Due date of deliverable                       | 31 <sup>st</sup> January 2024                                                                                                                                                 |
| Actual submission date                        | 28 <sup>th</sup> March 2024                                                                                                                                                   |
| Version                                       | Final                                                                                                                                                                         |
| Authors                                       | Sarah Marshall, Matthew Logan, Beatriz Maroto, Rachel Tully, Mario del Viejo, Carmen Sánchez, Lucila Castro, Mona Enell-Nilsson, Tauno Kekäle, Johanna Dahl, Gabriele Quinti, |
| Reviewers                                     | Wolfgang Haider, Constanze Fetting                                                                                                                                            |
| Work package number                           | 4                                                                                                                                                                             |
| Work package title                            | Transition pathway and policy experimentation                                                                                                                                 |
| Work package leader                           | Highlands and Islands Enterprise (HIE)                                                                                                                                        |

| Dissemination Level |                                                                                     |                                     |
|---------------------|-------------------------------------------------------------------------------------|-------------------------------------|
| CO                  | Confidential, only for members of the consortium including the Commission Services  | <input type="checkbox"/>            |
| PU                  | Public                                                                              | <input checked="" type="checkbox"/> |
| PP                  | Restricted to other programme participants, including the Commission Services       | <input type="checkbox"/>            |
| RE                  | Restricted to a group specified by the consortium including the Commission Services | <input type="checkbox"/>            |

| Nature of the Deliverable |        |                                     |
|---------------------------|--------|-------------------------------------|
| R                         | Report | <input checked="" type="checkbox"/> |

|   |                              |                          |
|---|------------------------------|--------------------------|
| D | Demonstrator                 | <input type="checkbox"/> |
| W | Website, patent filing, etc. | <input type="checkbox"/> |
| O | Other                        | <input type="checkbox"/> |

## Partners Involved in the Deliverable

| Participant No. | Name of the Organisation                                            | Short Name | Involved |
|-----------------|---------------------------------------------------------------------|------------|----------|
| 1               | Zentrum für Soziale Innovation Gmbh                                 | ZSI        | X        |
| 4               | Knowledge & Innovation                                              | K&I        | X        |
| 5               | Vaasan Yliopisto                                                    | UVA        | X        |
| 6               | Österbottens förbund – Pohjanmaan liitto                            | RCO        | X        |
| 7               | MERINOVA                                                            | MERINOVA   | X        |
| 8               | Fundación Fundecyt – Parque Científico y Tecnológico de Extremadura | FUNDECYT   | X        |
| 9               | Agencia Extremeña de la Energía                                     | AGENEX     | X        |
| 10              | Highlands and Islands Enterprise                                    | HIE        | X        |
| 11              | Community Energy Scotland                                           | CES        | X        |

## List of Abbreviations

| Abbreviation | Long Form                                   |
|--------------|---------------------------------------------|
| CnES         | Comhairle nan Eilean Siar                   |
| EC           | European Commission                         |
| FEMPEX       | Federation of Municipalities in Extremadura |
| G.A.L.       | Extremadura local action groups             |
| ICNZ         | Islands Centre for Net Zero                 |

|         |                                                                  |
|---------|------------------------------------------------------------------|
| OTC     | Office for Community Transformation                              |
| RRI     | Responsible Research and Innovation                              |
| TL      | Transition Lab                                                   |
| UHI NWH | University of the Highlands and Islands North, West and Hebrides |
| WP      | Work Package                                                     |

## Contents

|                                                                                              |    |
|----------------------------------------------------------------------------------------------|----|
| Executive Summary .....                                                                      | 2  |
| Deliverable Information .....                                                                | 4  |
| Partners Involved in the Deliverable .....                                                   | 5  |
| List of Abbreviations .....                                                                  | 5  |
| 1. Introduction.....                                                                         | 10 |
| 2. Co-creation of energy innovation pilot in Extremadura .....                               | 11 |
| 2.1 Summary of regional energy innovation need identified through RIPEET methodology.....    | 11 |
| 2.2 Key details of the co-creation process .....                                             | 12 |
| 2.2.1 Co-creation session 1 .....                                                            | 14 |
| 2.2.2 Co-creation session 2 .....                                                            | 14 |
| 2.2.3 Co-creation session 3 .....                                                            | 15 |
| 2.2.4 Co-creation session 4 .....                                                            | 15 |
| 2.3 Outputs from the co-creation process.....                                                | 16 |
| 2.4 Key learnings from the co-creation process .....                                         | 19 |
| 2.5 Key challenges and mitigation measures in the regional co-creation process.....          | 20 |
| 2.6 Pilot sustainability and next steps.....                                                 | 21 |
| 3. Co-creation of energy innovation pilot in the Outer Hebrides (Highlands and Islands) .... | 23 |
| 3.1 Summary of regional energy innovation need identified through RIPEET methodology.....    | 23 |
| 3.2 Key details of the co-creation process .....                                             | 24 |
| 3.2.1 Co-creation session 1 .....                                                            | 25 |
| 3.2.2 Co-creation session 2 .....                                                            | 26 |
| 3.3.3 Co-creation session 3 .....                                                            | 26 |
| 3.3.4 Co-creation session 4 .....                                                            | 27 |
| 3.3.5 Co-creation session 5 .....                                                            | 27 |
| 3.3 Outputs from the co-creation process.....                                                | 27 |
| Meeting of milestones .....                                                                  | 29 |
| 3.4 Key learnings from the co-creation process .....                                         | 30 |
| 3.5 Key challenges and mitigation measures in the regional co-creation process.....          | 31 |
| 3.6 Pilot sustainability and next steps.....                                                 | 32 |
| 3.6.1 Sustainability of the RIPEET Transition Lab in the Outer Hebrides .....                | 32 |
| 3.6.2 Sustainability of the RIPEET pilot in the Outer Hebrides .....                         | 32 |

|         |                                                                                       |    |
|---------|---------------------------------------------------------------------------------------|----|
| 4.      | Co-creation of energy innovation pilots in Ostrobothnia .....                         | 34 |
| 4.1     | Summary of regional energy innovation need identified through RIPEET methodology..... | 34 |
| 4.2     | Key details of the co-creation process .....                                          | 35 |
| 4.2.1   | Rural Green Transition in Ostrobothnia – Case Älvbyarna .....                         | 35 |
| 4.2.1.1 | Co-creation session 1 .....                                                           | 37 |
| 4.2.1.2 | Co-creation session 2 .....                                                           | 37 |
| 4.2.1.3 | Co-creation session 3 .....                                                           | 37 |
| 4.2.2   | Energy Village 3.0 – Ostrobothnia’s smart energy villages and communities .....       | 38 |
| 4.2.2.1 | Co-creation session 1 .....                                                           | 39 |
| 4.2.2.2 | Co-creation session 2 .....                                                           | 40 |
| 4.2.2.3 | Co-creation session 3 .....                                                           | 40 |
| 4.2.2.4 | Co-creation session 4 .....                                                           | 40 |
| 4.3     | Outputs from the co-creation processes .....                                          | 41 |
| 4.4     | Key learnings from the co-creation processes .....                                    | 42 |
| 4.5     | Key challenges and mitigation measures in the regional co-creation processes .....    | 44 |
| 4.6     | Pilot sustainability and next steps .....                                             | 44 |
| 4.6.1   | Sustainability of the RIPEET Transition Lab in Ostrobothnia .....                     | 44 |
| 4.6.2   | Sustainability of the RIPEET pilots in Ostrobothnia .....                             | 44 |
| 5.      | Analysis of key learning points from the co-creation process .....                    | 45 |
| 6.      | Analysis of key regional challenges and mitigation measures .....                     | 47 |
| 7.      | Conclusions .....                                                                     | 48 |
|         | Annex 1 – Stakeholder data for Extremadura .....                                      | 50 |
|         | Annex 2 - Stakeholder data for the Outer Hebrides .....                               | 52 |
|         | Annex 3 - Stakeholder data for Ostrobothnia .....                                     | 57 |
|         | Case Älvbyarna .....                                                                  | 57 |
|         | Energy Village 3.0 .....                                                              | 59 |
|         | Annex 4 Local Assessment Reports and Output collection .....                          | 62 |

## Table of Figures

**Figure 1:** Main needs identified in the Energy Transition Lab of Extremadura.

**Figure 2:** Co-creation process followed in Extremadura.

---

**Figure 3:** Screenshot of the web platform. Click on the image to be taken to the website.

**Figure 4:** Screenshot of the training platform.

**Figure 5:** An image showing the document library on the EnLuces website.

**Figure 6:** A diagram illustrating the co-creation process in the Outer Hebrides.

**Figure 7:** Co-creation process - Case Älvbyarna.

**Figure 8:** Co-creation process – Energy Village 3.0.

**Figure 9:** The contents page from the handbook (in Swedish).

**Figure 10:** A copy of the roadmap to becoming a smart village.

## 1. Introduction

This report provides an overview of the energy innovation pilot co-creation process in the three RIPEET regions of Extremadura (ES), the Outer Hebrides of Scotland (UK) and Ostrobothnia (FI)<sup>1</sup>.

Before the co-creation of the RIPEET innovation pilots, regional stakeholders in the Transition Labs (TLs) co-created a regional energy vision (see D3.3 Vision Folder), collaboratively identified change targets and territorial transition pathways to achieve these visions (See D4.1 Territorial Transition Pathways), worked together to identify the most urgent energy innovation need in their region (see D4.2 Selection report on niche innovation needs) and successfully run three parallel open call processes (one per RIPEET region) to identify pilot projects to address those needs (see D4.3 Report on Proposed Solutions and Evaluations).

The RIPEET teams in Extremadura, Ostrobothnia and the Outer Hebrides of Scotland each had a budget of €50,000 to fund a pilot project that addressed the energy innovation needs as described in D4.2 and identified by the TL stakeholders in the respective regions. The table below summarises the regional energy needs and pilot solutions identified for each of the RIPEET regions.

| Region         | Need(s) identified                                                                                                                                                              | Solution                                                                                                                                                          |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extremadura    | To increase the general knowledge on energy issues, fostering collaboration between key actors and promoting the development of new energy solutions for the benefit of society | Project to promote Energy Communities in Extremadura.                                                                                                             |
| Outer Hebrides | Explore solutions to reduce household energy costs by better utilising locally generated energy                                                                                 | Outer Hebrides Local Energy Economy                                                                                                                               |
| Ostrobothnia   | Energy solutions connecting local resources to local solutions                                                                                                                  | Rural Green Transition in Ostrobothnia – Case Älvbyarna                                                                                                           |
|                |                                                                                                                                                                                 | Ostrobothnia's smart energy villages and energy communities – Energy village 3.0 ( <i>Pohjanmaan älykkäät energiakylät ja energiayhteisöt – Energiakylä 3.0</i> ) |

<sup>1</sup> It should be noted that one pilot project was implemented in Extremadura and the Outer Hebrides, two pilots were implemented in Ostrobothnia. This gives a total of 4 pilot projects.

This document is structured into four main sections. The first three sections provide detail on the co-creation process in the three RIPEET regions. The final section provides an analysis of the learning points, regional challenges and mitigation measures associated with the co-creation process from the three RIPEET regions as well concluding remarks.

## 2. Co-creation of energy innovation pilot in Extremadura

### 2.1 Summary of regional energy innovation need identified through RIPEET methodology.

The Energy Transition Lab of Extremadura was built and executed considering the principles and approach proposed by the RIPEET project. The process which followed was based on the analysis of our energy system, social worries and the territorial capacities to develop our energy transition; the identification of the main stakeholders and policies; the organization of different sessions with key stakeholders to present the results of the diagnosis and start to think on what kind of energy future that participants desired in the region; to describe the actions needed to reach that future; to define the transition pathway of Extremadura and the needs to be covered in order to implement that pathway; and, finally, the launch of the call to develop an innovative solution that should cover those needs, as well as the co-creation and piloting of the selected solution. The most urgent energy needs in Extremadura can be seen in Figure 1.

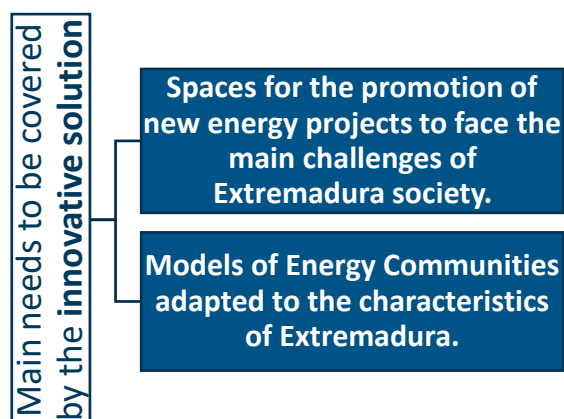


**Figure 1:** Main needs identified in the RIPEET Energy Transition Lab of Extremadura.

According to the innovation needs identified, to achieve the changes desired, **new spaces, tools and resources with which citizens can play a leading role in the definition of the Extremadura energy transition are needed. This will help to facilitate the identification of the main social challenges in the field of energy and favouring the development of new, fairer and more sustainable solutions, paying special attention to the Energy Communities Models.** These spaces should serve as a unique meeting point between the main stakeholders in the region, boosting collaboration between them and facilitating access to relevant information to enable the active participation of citizens in the energy transition process. The resources and information provided in the spaces must be adapted to the characteristics of the region and understandable by all target audiences. A citizenry involved and committed to the energy transition process is the guarantee that structural changes will be more effective and long lasting.

The Extremadura Evaluation Committee considered 7 proposals, the proposal which scored highest was “PROCEX: Project for the Promotion of Energy Communities in Extremadura”, the proposal was

presented by the energy cooperative “EnVerde” (During the co-creation process, the solution provider changed their name to “EnLuces”, because of marketing purposes). This solution had the following 2 main objectives:

1. **Creation of a network of energy community promoters** in each Mancomunidad (local public administrations), who will serve as disseminators and points of reference on energy communities in their immediate environment. The promoters were motivated individuals who were willing to support the development of new energy communities. These promoters completed the first of the three training courses offered by EnLuces (see point 2 below). The aim was to assist in “kick-starting” an energy community movement in Extremadura.
2. **Creation of a web application that allows the interaction of people, the participation of all social agents and communication between institutions, companies and communities.** This application will contain: a specific information space on regional energy transition in Extremadura; resources for virtual regional energy transition in Extremadura; resources for meetings and virtual training, focused on promoting the empowerment of citizens and shared knowledge, with examples of good practices on energy communities and energy efficiency; and a unified public resource repository for the promotion of regional and municipal policies.

## 2.2 Key details of the co-creation process

The co-creation team of Extremadura was established based on the need for the following roles:

- 1) Process monitors
- 2) Solution provider
- 3) Potential users of the solution

The process monitors were members of the core team of RIPEET in the Region, from the partners Fundecyt and Agenex.

The Solution Provider was represented by members of the energy cooperative EnVerde who were directly linked to the development of the solution, as well as members of other entities that supported the development of the solution.

The potential users of the solution were members of the Energy Transition Lab of Extremadura, members of local public administrations (as key agents for the promotion of the solution at local level), and other stakeholders interested in the aim of the solution, which has been the increasing of general knowledge on territorial energy transition and the promotion of Energy Communities in the Region.

The image in Figure 2 provides a visualisation of the co-creation process in Extremadura. It can be seen that there are four co-creation sessions, two project sessions and six other related meetings.

The 4 co-creation sessions were focused on reviewing the general structure and functionalities of the Energy Communities promotion website and training courses, as well as the content of both resources. The co-creation sessions were defined according to the needs of each development phase, so the first one was more informative and focused on general aspects, while the following ones focused on

specific aspects on which it was considered important to have the opinion of potential users regarding the structure and content of both the web platform and the training courses.

#### Co-creation process in Extremadura. Solution "EnLuces"

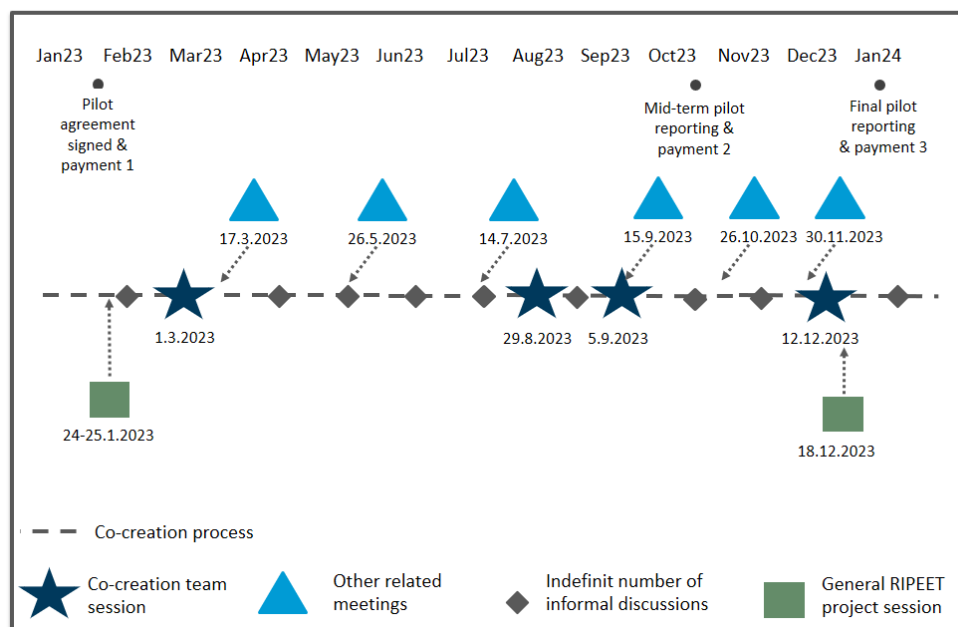


**Figure 2:** Co-creation process followed in Extremadura.

Regarding the 2 project sessions, the first one corresponds to the community session organised in the city of Badajoz (Extremadura) where there was a general debate on the importance of promoting solutions such as Energy Communities in Extremadura. The first opinions of potential users on how to approach the development of the solution was also presented. The second session was on sustainability which was also held in Badajoz (Extremadura). During this session, the solution was presented, as well as the main results obtained, the lessons learned in the process, and the actions needed to keep the solution running. The possibilities of complementing the solution with other resources to promote Energy Communities more effectively in the region were also discussed.

The other related meetings correspond to sessions between the provider and the regional RIPEET partners in which the state of solution development was analysed and validated, as well as a discussion of the next steps in the co-creation process.

During the whole co-creation process, and in parallel to the co-creation sessions, the solution provider organised numerous informal meetings with experts and related agents to achieve a high- quality level in the development of the solution, such as IT experts, legal advisors and civil society groups.

Details of the stakeholders involved with each co-creation session can be found in Annex 1.

### 2.2.1 Co-creation session 1

**Date of session:** 1/3/2023

**Participants:** 17 (Female/Male: 11/6)

**Summary of the purpose of the session:**

The aim of this session was to: present the co-creation methodology and the proposed solution to potential users; motivate potential users to participate in future co-creation sessions and to identify the first adjustments needed to ensure the best fit between the functionalities of the solution and the real needs of potential users. The programme for this session was:

- Brief presentation of the RIPEET project and the co-creation process.
- General presentation of the solution to be developed.
- Information and training platform hosted on the website. Content and new proposals.
- Network of Promoters (Participation form, request for dissemination, queries and questions)

**Key outputs from the session:**

- Realisation that the solution needed more development to have a clearer framework.
- More information and support materials (tools) needed to participate in a more active way in the co-creation process.
- The obligations of the members of the promoters' network need to be clarified and practical information and tools are needed to carry out the work in an effective way.
- Clear and easy to use information on relevant aspects is needed, such as financial support mechanisms for the development of Energy Communities, case studies, and so on.

### 2.2.2 Co-creation session 2

**Date of session:** 29/8/2023

**Participants:** 6 (Female/Male: 3/3)

**Summary of the purpose of the session:**

The aim of this session was to revise a first version of the web platform, presenting the main information modules that have already been defined as well as a discussion on the functionalities that the platform should include. The programme for this session was:

- General presentation of EnLucus web platform.
- Description of each web menu.
- Workshop for the definition of actions needed to improve the solution.

**Key outputs from the session:**

- An FAQ's section is needed to have immediate answers to general topics.
- The web content needs to be adapted to different devices (pc versus mobile).
- In the menu "Energy Maps", change the order of the maps.
- Give practical information in the map of "Energy Communities Initiatives", such as legal form, financial support, obstacles to creation and state of development.

- Ensuring the creditworthiness of companies for the development of Energy Communities the map of “Enterprises”.
- In the menu “Citizens”, include guidelines on how to become part of an Energy Community.
- In the area on financial support, differentiate between those for particulars and for private companies or other entities.
- In the menu “Councils”, expand and highlight information on the different ways in which a municipality can participate. Also, include legal and economic information on the participation of local councils, making it easier to read through diagrams and tables, as well as access to relevant documentation.
- In relation to issues such as navigability, accessibility, images, vocabulary, etc., the design of the website and its layout are rated very positively.

### 2.2.3 Co-creation session 3

**Date of session:** 5/9/2023

**Participants:** 8 (Female/Male: 5/2)

#### **Summary of the purpose of the session:**

The aim of this session was to revise the content on the 3 training courses that are hosted and integrated in the EnLuces website, the training platform that will deliver the training programme and identify new training needs. The programme for this session was:

- General presentation of the 3 training courses.
- Training platform.
- Content of the first course “Promoting Energy Communities”, addressed to the promoters of the network.
- Content of the second course “Municipal Participation in Energy Communities”, addressed to local administrations workers.
- Content of the third course “Efficient Use of Energy”, addressed to citizens.
- Workshop for the definition of actions needed to improve the solution.

#### **Key outputs from the session:**

- The content should be in pdf. format.
- Training for installation companies, electricians and other associated professionals is needed to improve the service to be provided to the Energy Communities.
- Extend deadlines to finish the training units.
- Include a glossary of terms and repository of documentation.
- Expand information on the implications of participating in an Energy Community for citizens.
- Transfer to the web the most relevant content in a summarised form.
- Expand the content of the units 1, 2 and 3 of the first course.

### 2.2.4 Co-creation session 4

**Date of session:** 12/12/2023

**Participants:** 6 (Female/Male: 4/2)

#### **Summary of the purpose of the session:**

The aim of this session was to evaluate the training sessions delivered in the framework of the solution “EnLuces” in order to know the satisfaction of participants and propose improvements for the second edition of the training programme, considered in the sustainability plan of the solution for 2024. The programme for this session was:

- First course “Promoting Energy Communities”: discussion of the programme, participation data and satisfaction surveys.
- Second course “Municipal Participation in Energy Communities”: discussion of the programme and participation data so far.
- Third course “Efficient Use of Energy”: discussion of the programme.
- Workshop for the definition of actions needed to improve the solution.

#### Key outputs from the session:

- More detailed information is needed on economic data related to the creation and operation of an Energy Community, including future projections.
- Information needed on ways to participate in Energy Communities for people that already have individual self-consumption installations.
- More information on the 2 main legal forms commonly used, association and cooperative.
- More information on the participation of municipalities in Energy Communities, to facilitate meetings with political and public staff.
- Case studies that can be used as references for the creation of new Energy Communities.
- Provide the training content in .pdf format after completion of the courses.
- Use of free licence for the platform.
- Incorporate a calendar in the training platform.
- Highlighting the role of promoters in the territory, proposing their creation as a figure in local administrations.
- Development of arguments to counteract the resistance of municipalities to participate in Energy Communities due to lack of knowledge or ideology.

### 2.3 Outputs from the co-creation process

The solution co-created in Extremadura was based on 2 action lines. The first was the creation of a network of promoters in the territory that will work as leaders for the development of energy projects led by citizens, putting the main focus on Energy Communities as the most interesting current social solution. The second action was the development of a platform where practical information that can help to increase general knowledge on energy issues has been integrated and managed, to ensure that this information is easy to access and use by territorial citizens.

After the execution of the co-creation process, the main outputs have been:

**The creation of a network of promoters comprised of 22 people from 13 different “Mancomunidades”,** which means a coverage of 50% of the regional territory. It must be taken into consideration that Extremadura is a very large and low populated region (it is as big as the Netherlands, but only 1 million people live in Extremadura), so it is a widely dispersed territory that is difficult to cover in its entirety in just 11 months. Each promoter took part in the first of the three training courses hosted on the EnLuces website. Thanks to the continuity of the solution, new potential network

members are showing interest, so it is foreseen that the whole region of Extremadura will be covered by a network of energy community promoters during the next months.

**The creation of a web platform which includes an area with general information about energy communities and how they can be built in Extremadura;** a menu with several “Energy Maps” identifying key stakeholders and initiatives to boost collaboration and to ease the creation of new Energy Communities; an area with general information on energy issues for citizens; a similar area of information for municipalities, highlighting the importance of the councils as key actors for change at the local level; a calendar of events and an area with the main news about the project; a contact area to receive support from the experts behind the platform; and the training platform for the promoters of the network and people interested on being trained in the field of energy management and the development of energy solutions led by citizens. The web platform can be accessed by clicking on Figure 3.



**Figure 3:** Screenshot of the web platform. Click on the image to be taken to the website.

The main innovation aspect related to the solution has been the creation of a new organisational model at territorial level. This is based on distributed management when providing services to citizens for the development of new energy projects. These projects are focussed on increasing the social benefits and reducing the environmental impact of the territorial energy transition. Thanks to the Energy Transition Lab, the information and training platform, the “EnLuces” solution and the network of promoters, the provision of services to citizens for the development of Energy Communities is being developed in a more orderly and efficient way and there has been an increase in knowledge on energy issues.

It should also be noted that the three training courses (see screenshot in Figure 4) developed as part of the pilot have been very well received, and after several presentations in other Regions, it can be considered innovative at a national level.

- 1. Curso: **PROMOVIENDO LAS COMUNIDADES ENERGÉTICAS**
- 2. Curso: **PARTICIPACIÓN MUNICIPAL EN LAS COMUNIDADES ENERGÉTICAS.**
- 3. Curso: **USO EFICIENTE DE LA ENERGÍA.**



**Figure 4:** Screenshot of the training platform

Finally, another very useful and unique resource has been the document library, which is hosted on the EnLuces website, where anyone has free access to numerous templates necessary for the creation of Energy Communities. One of the main barriers identified for those citizens leading the development of this type of projects is a lack of clear guidance on the legal aspects around the establishment of an Energy Community. In this sense, “EnLuces” hosts the main documents related to the creation of the necessary legal entity, the participation of municipalities and the management of the energy installations.



**Figure 5:** An image showing the document library on the EnLuces website.

It should be noted that although the co-creation process was useful in adjusting the solution to better fit the needs of potential users, the main objective of the solution remained unchanged throughout the process. This indicates that the selection of the solution was a good fit to address the regional energy needs.

As outlined above, the 2 innovation needs identified in the framework of the Energy Transition Lab of Extremadura were very well addressed by the solution provider through the co-creation process that has been piloted between January - December 2023. This was confirmed at the Extremadura Selection Panel Review meeting which was held 10<sup>TH</sup> January 2024. <sup>2</sup>

The solution provider produced a report summarising the activity on the RIPEET pilot. This report is in Spanish and can be provided if required<sup>3</sup>.

## 2.4 Key learnings from the co-creation process

A Local Assessment meeting was held in Extremadura as part of the sustainability workshop, held in Badajoz on the 18<sup>th</sup> of December and the purpose was to discuss the RIPEET pilot with the wider co-creation team and to gather feedback on the co-creation process. The key points from this meeting are discussed below.

Time was needed at the beginning of the co-creation process to support the development of a “co-creation culture” in the territory and to consider how to manage the co-creation process most effectively. Time was also needed at the beginning of the process to train stakeholders on how to implement co-creation.

Another main learning is that to achieve a true co-creation process in which all actors are represented, an extra effort is needed (even duplicating meetings) to be able to adapt to different work schedules. There is also a need to adapt to different levels of involvement and knowledge on certain topics. Looking at the participation of the type of stakeholders involved in the co-creation process, we can see that the process was strongly shaped by actors from the policy field, including the process monitoring team (see table 1). Further, civil society organisations were very active in the co-creation process, reflecting the community-based nature of the intervention.

*Table 1: Participants in co-creation process according to stakeholder groups.*

| Stakeholder group | Number |
|-------------------|--------|
| Civil society     | 9      |
| Environment       | /      |
| Public            | 24     |
| Business          | 4      |
| Research          | /      |
| Total             | 37     |

<sup>2</sup> The full report from this meeting can be viewed as “Report 1” in the Annex 4.

<sup>3</sup> Please contact Mario del Viejo for this report: [mario.delviejo@fundecyt-pctex.es](mailto:mario.delviejo@fundecyt-pctex.es).

The numbers show that the topic of building up a community energy project is an endeavour with strong implications regarding the legal and policy context. Further, the policy driven ness of the regional energy transition pathway also has to be mentioned in this context.<sup>4</sup>

A key factor to ensure a successful, effective and well-organised co-creation process is that there must be a coordinator. Coordinator continuity was discussed during the sustainability workshop and it was agreed that if it could no longer be the solution provider, other options should be explored, such as a higher involvement of the regional government and local administrations. Discussions are ongoing regarding the future coordinator role.

Co-creation meetings should be held periodically because they provide a lot of information and time is needed to pull together the relevant material for the sessions. The Extremadura co-creation team were impressed and surprised at how quickly general knowledge on energy communities increased. This suggested that the training of stakeholders interested in energy communities should progress at a similar pace<sup>5</sup>.

## 2.5 Key challenges and mitigation measures in the regional co-creation process

Considering the wide range of stakeholders involved in the co-creation process, it was difficult to design a co-creation session format that would suit all types of stakeholders. The first meetings took place in the morning as this worked for many actors (particularly those from the public sector), but it was noted that an important group of actors were participating in the process in their own time and could only join meetings held in the afternoon. So, the fourth co-creation meeting was held in the afternoon of the 12th of December to address this issue and to ensure that these stakeholders could contribute in a meaningful way.

A key challenge was to gather as much information as possible about the structure and content that should be included in the web platform and the training courses, as well as the tools needed by the network of promoters. To enable this, several meetings were held periodically: with stakeholders that were already familiar with the RIPEET methodology taking part in online meetings. This allowed a larger number of stakeholders to take part in the sessions. The solution provider also organized face-to-face meetings around the territory to engage actors who were willing to be promoters and to gather their input and feedback on how to better reach the desired results.

Throughout the co-creation process, many suggestions for improvement and feedback were received when developing the platform and training materials. All suggestions were jointly assessed and their feasibility for incorporation into the solutions was analysed by the solution provider, the external expert (who carried out web development and had expertise in delivering training) hired by the solution provider and the regional core team to implement them in the best way. The deadline for addressing or implementing the suggestions was usually the next meeting so that any amendments could be shared and to allow participating actors to validate the improvements made.

<sup>4</sup> See “Deliverable 2.3. Analysis of drivers and barriers of energy transition” for more insights.

<sup>5</sup> For a copy of the Local Assessment Meeting report for Extremadura see “Report 2” in Annex 4.

---

## 2.6 Pilot sustainability and next steps

On 18 December 2023, a sustainability workshop was organised in the facilities of Fundecyt (Badajoz), with the aim of analysing the benefits of the RIPEET approach and the solution “EnLuces”. Another key purpose of the session was to define key future actions to be implemented to ensure the continued running of frameworks as proposed by the Energy Transition Lab, the maintenance of the Solution “EnLuces”, and promoting the creation of Energy Communities in a more efficient way. The main conclusions of this session were:

### SOCIAL ASPECTS

- Importance of involving multiple actors distributed throughout the territory to involve them in the development of the Energy Communities (G.A.L. (local action groups), business organisations, FEMPEX (Federation of Municipalities in Extremadura), etc.).
- The importance of focusing on what is done with the energy that is generated, in terms of wealth creation and the impact it can have on the territory.
- Importance of having forums to exchange ideas.
- To fight energy poverty, families, associations and public and private educational centres can work together to develop Energy Communities.
- Importance of measuring the impact of Energy Communities to be able to compare them with other initiatives.

### MANAGEMENT

- Maintain the Extremadura Energy Transition Laboratory as a vehicle for identifying the needs of the different actors and a space for defining the necessary actions to be implemented.
- Need to effectively coordinate all the actions present in the territory (OTCs (Office for Community Transformation<sup>6</sup>), TL, Network of EnLuces promoters, etc.).
- Possibility of developing a public figure ("energy manager") that can comprehensively attend to citizens/projects in the territory.
- The need of specialists in the control and technical management of Energy Communities.
- The need for more training, both general and specific, for the development Energy Communities.
- The importance of training citizens/users from an early age.

### RESOURCES

- Develop new financing models that do not rely solely on public aid (e.g. a guarantee fund).
- Reduce the time taken to resolve existing grants. In this respect, one could consider granting aid directly for the creation of Energy Communities, where it is granted to a group of people, rather than on an individual basis.
- Given the lack of management or consultancy firms that can cover the needs of Energy Communities in the territory, it is necessary to train existing support agents so that they can provide this service.

---

<sup>6</sup> A “one stop shop” for energy communities that are financed by the national government.

---

## POLICY ASPECTS

- Need for more political leadership for the promotion of Energy Communities, including clearer and more flexible legislation.
- The need for regional government to exercise its arbitration role with distributors to facilitate the development of Energy Communities and avoid unnecessary obstacles.
- The fact that European legislation allows communities to distribute energy if they reach a certain level of production is highlighted, as well as the range of opportunities that this entails.

## TECHNOLOGICAL DEVELOPMENT ASPECTS

- The importance of digitalisation and Artificial Intelligence.
- Development of Peer-to-Peer models.
- Energy management systems tailored to the needs of Energy Communities.
- Analysis of the data generated for better decision-making in the management of Energy Communities.
- Exploitation of other technologies, in addition to photovoltaic.

After the session a report on the conclusions has been shared with all participants, the regional government and other key energy agents. Future meetings will be held to work on how to implement those actions and promote the Energy Communities at territorial level in a more effective way. Details for these future meetings are still being finalised.

### 3. Co-creation of energy innovation pilot in the Outer Hebrides (Highlands and Islands)

#### 3.1 Summary of regional energy innovation need identified through RIPEET methodology.

The Transition Lab in the Outer Hebrides collaboratively identified the following as the most urgent energy need in the region:

***“Explore solutions to reduce household energy costs by better utilising locally generated energy”.***

This was based on:

**URGENCY** – Over 40% of the Outer Hebrides is in fuel poverty, set to worsen given the current energy crisis.

**EXPECTED IMPACT** – Solution to this issue would benefit households and businesses across the region, learning could be shared with other regions.

**LINKS WITH EXISTING POLICY** – closely ties in with targets to reduce Fuel Poverty (The Fuel Poverty Act, 2019) and the National Plan for Scotland’s Islands (Scottish Government, 2019).

**LINKS WITH OTHER REGIONAL INITIATIVES** – Hope that the [Islands Centre for Net Zero \(ICNZ\)](#) and [Carbon Neutral Islands \(CNI\)](#) could learn from this pilot.

The Outer Hebrides Evaluation Committee considered the 5 proposals that were received from the regional open call for solutions. The proposal that scored highest was a consortium bid between the University of the Highlands and Islands North, West and Hebrides (UHI NWH) and the local authority in the Outer Hebrides, Comhairle nan Eilean Siar (CnES). This pilot proposal aimed to develop an **Outer Hebrides Local Energy Economy** which would:

1. Identify and overcome barriers to developing a local energy economy; specifically selling locally generated energy directly to local consumers through existing grid infrastructure via a locally owned energy supply company (ESCo) or alternative solutions. This will result in a reduction in the price of the energy sold.
2. Explore optimum mix of domestic renewable energy generation technologies.
3. Explore innovative interventions for energy efficiency improvements particularly in hard-to retrofit, island properties.

In the interest of gaining solutions to three main challenges identified by regional stakeholders:

1. Fuel poverty
2. Increasing energy prices
3. The mechanism whereby island generated renewable energy is sold directly to the UK electricity market, without the ability to sell directly locally. This mechanism is perceived as having little benefit to the wider community.

The pilot was divided into six work packages (WPs) as set out below:

1. **Project structure and regulation (led by CnES)** – to identify and address regulatory constraints around the Local Energy Economy.

2. **Energy storage (led by CnES)** – Investigate regionally appropriate long term energy storage options.
3. **Electricity networks (led by CnES)** - Understand impact of removing demand from the electricity network, specifically considering impact of industrial transition to Hydrogen-for-heat.
4. **Energy supply company (led by CnES)** - Investigation of the practicalities of delivering a local licensed supply company.
5. **Domestic energy efficiency (Led by UHI NWH)** - Explore the optimum mix of renewable generation at the household level including solar PV/Thermal, micro-wind solutions, heat-pump technologies, biomass, household battery storage. This research was undertaken by a MSc student at UHI NWH.
6. **Domestic renewable energy (Led by UHI NWH)** - Explore innovative interventions for energy efficiency improvements, particularly in hard-to-treat island/remote rural properties, seeking to target the households hardest hit by Fuel Poverty. This research was undertaken by a MSc student at UHI NWH.

Each WP had several milestones which needed to be met for funding to be released. There is more detail on the milestones for each WP in the final RIPEET reports. More detail on this and links to the reports can be found in Section 3.3. All project milestones were met which resulted in significant progress being made in addressing the energy need identified by the Outer Hebrides Transition Lab stakeholders through the activity of the RIPEET pilot in the region.

### 3.2 Key details of the co-creation process

The co-creation team in the Outer Hebrides was established based on the need for the following roles:

1. **Solution providers** UHI NWH and CnES were responsible for the development and oversight of the delivery of the RIPEET pilot solution.
2. **RIPEET TL Stakeholders** representing the quintuple helix who were involved in the identification of the regional energy need. The stakeholders comprised a broad range of skillsets and experience in the energy sector who all had valuable contributions and insights for shaping the development of the RIPEET pilot.
3. **RIPEET core team** members from HIE and CES to provide general oversight and guidance on the co-creation process and to ensure that appropriate reporting took place.

The image in Figure 6 provides a graphic representation of the co-creation process in the Outer Hebrides.

### Co-creation of the Outer Hebrides Local Energy Economy

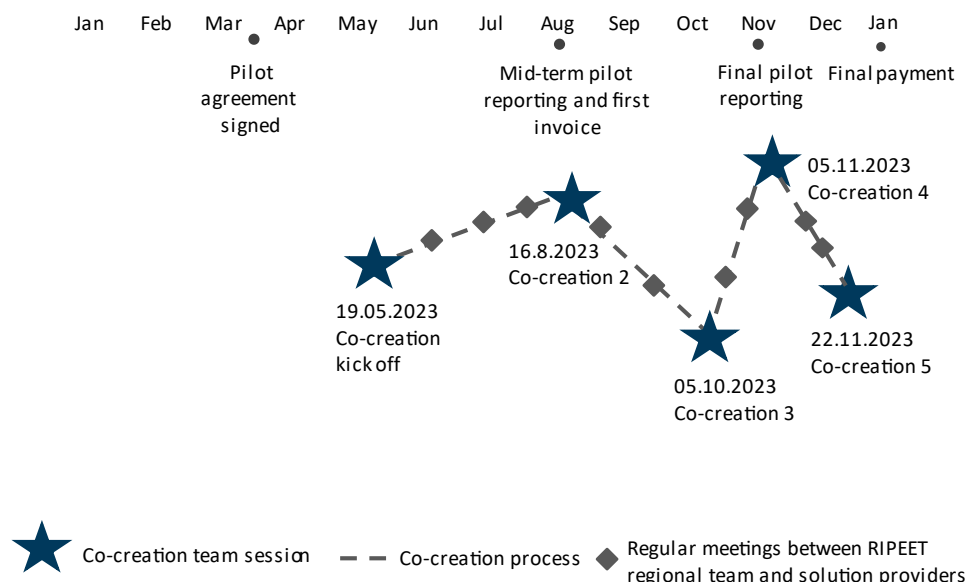


**Figure 6:** A diagram illustrating the co-creation process in the Outer Hebrides.

Five co-creation sessions were hosted in the region. Additional regular meetings occurred between the RIPEET core team and the solution provider. These were monthly or fortnightly, depending on the intensity of project activity at the time. This helped to ensure that project momentum was maintained and that there was adequate oversight and guidance provided to the solution providers throughout the co-creation process which was a new concept for them. Details of the stakeholders involved with each co-creation session can be found in Annex 2.

#### 3.2.1 Co-creation session 1

**Date of session:** 19<sup>th</sup> May 2023

**Participants:** 17 (Female/Male: 6/11)

**Summary of the purpose of the session:** The main purpose of the session was to provide a summary of the RIPEET process to date and re-familiarize the stakeholders with the regional energy need identified. It also provided an opportunity to introduce the solution providers to the wider co-creation team as well as introducing the RIPEET pilot and facilitating an initial discussion over how the regional co-creation process would work in practice.

**Key outputs from the session:**

- Collective understanding of the next steps for the RIPEET co-creation process in the region
- New linkages between different stakeholders made on energy storage projects in the region.
- Useful feedback from numerous stakeholders on important aspects/useful projects that should be considered when developing the RIPEET pilot.
- Dates for future co-creation sessions set.

### 3.2.2 Co-creation session 2

**Date of session:** 16<sup>th</sup> August 2023

**Participants:** 13 (Female/Male: 6/7)

**Summary of the purpose of the session:** The main purpose of the session was to update stakeholders on the progress made so far by the Solution Providers on their work on WPs 1 – 6. This included a discussion on the need to amend some of the project milestones for WPs 1 – 4 given the outcome of early discussions and project activity on these WPs. Stakeholders were given the opportunity to review the information gathered so far and suggest additional avenues which would be worthy of investigation for the RIPEET pilot.

**Key outputs from the session:**

Several amendments to the detail in WPs 1-4 were discussed and confirmed amongst the co-creation team:

1. Initial discussions into battery storage options revealed that there is not currently battery storage technology of a sufficient size to allow for complete disengagement of the region from the national electricity grid. Revised approach to seek a tariff derogation from OFGEM (national regulator) which is commensurate with the amount of community-owned energy generation that is generated and put into the UK electricity network.
2. Agreement that a statement of intent between RIPEET and other local stakeholders developing a battery project is no longer necessary as there will not be overlap between the RIPEET energy storage research and other battery projects in the region. Focus on investigation of appropriate long term energy storage options for the region and ensuring that data gathered is shared with relevant parties.
3. Milestones unchanged
4. Investigation of the practicalities of delivering a local licensed supply company now the focus of this WP.

UHI NWH gave an update on the timeline for the research to be carried out under WPs 5 and 6. Co-creation team submitted numerous useful contacts for the students carrying out the research to ensure that their research involved gathering data from the most knowledgeable regional sources.

### 3.3.3 Co-creation session 3

**Date of session:** 5<sup>th</sup> October 2023

**Participants:** 14 (Female/Male: 6/8)

**Summary of the purpose of the session:** The main purpose of the session was to introduce Carolyn MacPhee from CnES to the wider co-creation team. Carolyn's role was to provide additional resource to support John Cunningham in the delivery of WPs 1 – 4. This session also gave UHI the opportunity to discuss the findings from the two research pieces undertaken through WPs 5 and 6 with the wider co-creation team. UHI made a presentation of the draft leaflets they had produced summarising the key findings from WPs 5 and 6.

**Key outputs from the session:**

- Gathering of feedback from the co-creation team on the content of the research that was carried out for WPs 5 and 6 which examine domestic energy efficiency and domestic

renewable energy respectively. Co-creation team could see where their suggestions had been incorporated into the research.

- Feedback from the co-creation team on the draft leaflets produced to summarise the key findings from WPs 5 and 6
- HIE and CES to collate the feedback on the research and the leaflets from the co-creation team so that this can be incorporated and reviewed at the next co-creation session.

### 3.3.4 Co-creation session 4

**Date of session:** 7<sup>th</sup> November 2023

**Participants:** 11 (Female/Male: 5/6)

**Summary of the purpose of the session:** The main purpose of the session was to have a detailed discussion of the information collected and research carried out as part of WPs 1 – 4. Information gathered for each WP was discussed in detail in turn, allowing the co-creation team the opportunity to submit their expertise and experience to enhance progress towards developing a local energy economy.

**Key outputs from the session:**

- Information provided by the co-creation team to the solution provider which needs to be included in the report relating to WPs 1 – 4.
- Discussion of next steps including final co-creation session and the RIPEET sustainability workshop (held 5<sup>th</sup> December 2023 in Stornoway).

### 3.3.5 Co-creation session 5

**Date of session:** 22<sup>nd</sup> November 2023

**Participants:** 13 (Female/Male: 5/8)

**Summary of the purpose of the session:** The main purpose of the session was to give the solution provider the opportunity to summarise their key findings in relation to WPs 1 – 6 of the RIPEET pilot to the wider co-creation team. This session also allowed the co-creation team a final opportunity to input and influence the content of the report that would summarise the key barriers and opportunities for developing a local energy economy.

**Key outputs from the session:**

- Robust discussion on the information collated through work on WPs 1 – 6 of the pilot.
- An understanding of the next steps for the RIPEET pilot (summary reports to be developed and final results to be presented at the RIPEET Wrap Up session in Stornoway held on the 5<sup>th</sup> of December 2023).

## 3.3 Outputs from the co-creation process

The co-creation process in the Outer Hebrides resulted in the following key outputs:

1. A report summarising the key activity and action points from WPs 1 – 4
2. Two MSc theses examining the research topics for WPs 5 and 6
3. A report summarising the key activity and action points from WPs 5 and 6
4. Leaflets summarising the key findings from the research undertaken for WPs 5 and 6.

A description of the information contained in these outputs can be found in the following table<sup>7</sup>.

| Work Package                                          | Output produced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WP 1 - Project structure and regulation (led by CnES) | <p>Report which summarized the following relating to the development of an Outer Hebrides Local Energy Economy<sup>8</sup>:</p> <ul style="list-style-type: none"> <li>- Potential options for negotiating a “Highlands and Islands” energy tariff.</li> <li>- An assessment of the most appropriate energy storage options for the region</li> <li>- Build on strengthened relationship with the electricity grid operator, SSEN, developed through RIPEET, to understand network implication of planned decarbonisation and to understand the implications of “virtual” provision of locally generated electricity to local consumers.</li> <li>- Continue to investigate the potential for “Hebrides Energy” becoming a model for a larger, Scottish Islands Electricity Supply Company.</li> </ul> |
| WP 2 - Energy storage (led by CnES) –                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| WP 3 - Electricity networks (led by CnES) -           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| WP 4 - Energy supply company (led by CnES) -          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| WP 5 - Domestic energy efficiency (Led by UHI NWH)    | <p>A report summarising the key findings from both WPs was produced in addition to both MSc theses and leaflets summarising the key results of each research piece<sup>9</sup>.</p> <p>An MSc thesis detailing energy efficiency options for households<sup>10</sup>. This research includes an examination of the barriers to households who want to improve the energy efficiency of their homes as well as potential means to address these barriers.</p> <p>Leaflets summarising the key points from the research and recommendations for next steps was created. This was not a key deliverable which was outlined at the beginning of the process but the co-</p>                                                                                                                                |

<sup>7</sup> For an executive summary of the key conclusions and action points from the reports see the Executive Summary which is labelled as “Report 3” in Annex 4.

<sup>8</sup> See report labelled “Report 4” in Annex 4.

<sup>9</sup> See report labelled “Report 5” in Annex 4.

<sup>10</sup> The full MSc theses can be viewed on request (please contact [sarah.marshall@hient.co.uk](mailto:sarah.marshall@hient.co.uk)).

|                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   |  | creation team felt that this was a key aspect of the research to ensure that the research results could be disseminated <sup>11</sup> .                                                                                                                                                                                                                                                                                                                                                                                                                             |
| WP 6 - Domestic renewable energy (Led by UHI NWH) |  | <p>An MSc thesis detailing the domestic renewable energy options for households<sup>12</sup>. This research includes barriers to uptake the potential positive impact of community collaboration on this topic.</p> <p>Leaflets summarising the key points from the research and recommendations for next steps was created. This was not a key deliverable which was outlined at the beginning of the process but the co-creation team felt that this was a key aspect of the research to ensure that the research results could be disseminated<sup>13</sup>.</p> |

## Meeting of milestones

It was not possible to develop an Outer Hebrides Local Energy Economy during the lifetime of RIPEET but significant progress has been made in identifying other energy models that the region can explore to reduce household energy costs.

From the pilot results it is clear that disconnecting from the national grid or having a tariff derogation is unlikely to happen in the short-medium term. Currently, some examples of locally supplied and consumed electricity exist in the market, full detail of these can be seen in the final report for WPs 1 – 4. Under the pilot, the solution providers studied these energy models and considered 3 of them to be suitable. After a deeper analysis, the most appropriate model is the Energy Local Club model where generators and consumers enter an agreement with a sole supplier and closely match supply & demand. The Energy Local Club (and other energy models) will be investigated further under the ICNZ and another regional program with significant overlap to RIPEET, Fast Followers (see section 3.6 for more detail).

Detail of WP milestones and how these were met can be seen in the final reports for WPs 1 – 4 and WPs 5 and 6 in the table above. It should be noted that all milestones for the RIPEET pilot were met by the Solution Provider, this was confirmed during the Selection Panel Review meeting which was held on the 10<sup>th</sup> of January 2024<sup>14</sup>.

The focus of the co-creation process did not change but the milestones for WPs 1 – 4 were amended after the first co-creation meeting as outlined above in Section 3.2. This was because initial research into developing a local energy economy for the region highlighted that certain routes were not possible

<sup>11</sup> Leaflets are labelled as “Leaflets 1 and 2” in Annex 4.

<sup>12</sup> The full MSc theses can be viewed on request (please contact [sarah.marshall@hient.co.uk](mailto:sarah.marshall@hient.co.uk)).

<sup>13</sup> Leaflets are labelled as “Leaflets 3 and 4” in Annex 4.

<sup>14</sup> The full Outer Hebrides Selection Panel Review meeting report is labelled as “Report 6” in Annex 4.

due to the current legislative environment and so a different approach to developing a local energy economy was needed and explored through the RIPEET pilot.

### 3.4 Key learnings from the co-creation process

A Local Assessment Meeting was held on the 5th of December 2023 as part of the RIPEET sustainability workshop<sup>15</sup>. The purpose of this meeting was to discuss the final detail of the RIPEET pilot with the wider co-creation team to check that stakeholders were content that the RIPEET pilot had been adequately delivered by the solution providers. The purpose of this meeting was also to gather feedback on the regional co-creation process overall.

There was agreement amongst stakeholders that the co-creation process had been a positive one with multiple stakeholders mentioning that the RIPEET pilot process had further strengthened existing relationships as well as supporting the development of new, productive connections.

Feedback from solution providers mentioned that a collaborative online workspace would have been useful to better facilitate group discussion and collaboration. This space could have hosted working documents to easily allow for multiple stakeholders to simultaneously provide feedback on the outputs from the pilot. It was felt by stakeholders that it had been easy to input into the RIPEET pilot but having a collaborative online space would have made this process easier.

Feedback from UHI NWH indicated that the co-creation process was similar to other processes that they are familiar with and utilise regularly. The RIPEET pilot further reinforces how important this approach is for ensuring that stakeholders are centrally involved in the design of projects which affect them.

There was discussion over how the OH RIPEET Transition Lab (TL) evolved into the pilot co-creation team. There was support for the continuation of the co-creation team/TL and discussion on the important role that this groups of stakeholders could have in other regional energy transition projects such as the [Islands Centre for Net Zero \(ICNZ\)](#), [Fast Followers](#) and [Carbon Neutral Islands \(CNI\)](#).

No specific improvements to the pilot project were suggested by RIPEET stakeholders during this session. There was a lively discussion around many key points raised by the research carried out by the RIPEET pilot including:

- The pros and cons of the different energy models discussed in WP1.
- The need for continued horizon scanning of the energy storage market as it is such a dynamic sector.
- The practicalities of establishing a local energy supply company including the minimum of energy customers required to ensure that energy models are viable. There is potentially the need for the Outer Hebrides to aggregate with other island and rural regions to amass sufficient customers to make certain local energy supply models viable.
- The number of barriers for householders in installing appropriate energy efficiency measures and renewable energy technologies in their homes. Additional guidance is required to assist

<sup>15</sup> A copy of the Local Assessment Meeting report for the Outer Hebrides can be seen in Annex 4 labelled “Report 7”.

householders in understanding which measures and technologies are the best fit for their home as well as support in obtaining the necessary grants/loans to pay for them.

As regards stakeholder involved in the co-creation process, the patterns of participation show that the trio of CSO – Public Authorities – Research was the driving constellation behind the innovation action (see table 2). This is notable as the energy innovation solution had a strong research component and the co-creation process successfully managed to counter-balance a research dominated output creation process. This also confirms the effectiveness of the RIPEET co-creation methodology to centrally include stakeholders in the process of designing and implementing energy innovation solutions.

*Table 2: Stakeholder participation in the energy innovation pilot in the Outer Hebrides.*

| Stakeholder group | Number    |
|-------------------|-----------|
| Civil society     | 25        |
| Environment       | 3         |
| Public            | 25        |
| Business          | 3         |
| Research          | 12        |
| <b>Total</b>      | <b>68</b> |

### 3.5 Key challenges and mitigation measures in the regional co-creation process

During the delivery of the RIPEET pilot the following key issues emerged and appropriate mitigation measures were taken:

#### **Resourcing and staff illness**

Early in 2023 a key staff member from the solution provider's team was absent from work due to illness. This was at the point where project milestones were being confirmed for the regional co-creation process. Since this staff member held specific expertise relating to WPs 1 – 4, it was not possible to progress in earnest until they had returned. The milestones were integrated into the Grant Agreement between HIE and the solution provider so there was a delay in this being signed until the staff member had returned to work and could confirm milestones.

To mitigate the impact of this delay, the RIPEET core team ensured that project milestones for WPs 5 and 6 were agreed at the earliest possible time. The Grant Agreement was also prepared so that once all milestones had been confirmed, this could be signed at the earliest possible convenience and the co-creation kick off could commence.

It was apparent through the first half of the co-creation process that the solution providers would benefit from additional resource to help ensure that the maximum benefit possible could be derived from the regional co-creation process. The RIPEET core team highlighted this to the solution providers and numerous routes for acquiring additional resource were explored. Additional resource was sourced by the solution provider who very quickly got up to speed with the remaining actions on the RIPEET pilot. As a result of this additional staff resource, significant progress was made towards achieving the pilot milestones in the second half of the co-creation process with all project milestones having been met by the deadline of November 2023.

### **Lack of familiarity with co-creation**

Another key challenge was a lack of familiarity with the co-creation process from the solution providers and the wider co-creation team/TL. To mitigate this, the RIPEET core team ensured that time was spent discussing and confirming what co-creation is for the first two co-creation sessions. We also ensured that there was adequate time during the co-creation sessions for questions for those that were still unsure or unfamiliar with the process.

Another key means for helping to address this was that the RIPEET core team had regular sessions with the solution provider (monthly or fortnightly depending on the volume of work) and a regular topic of discussion was how and where the wider co-creation team could input. This allowed the solution provider to reflect on this before every co-creation session and helped to ensure that in every co-creation session it was clear where the opportunities for input were for the co-creation team.

## **3.6 Pilot sustainability and next steps**

The sustainability of the RIPEET TL and the RIPEET pilot were discussed during a sustainability session at the RIPEET Wrap Up meeting in Stornoway on the 5<sup>th</sup> of December 2023<sup>16</sup>.

### **3.6.1 Sustainability of the RIPEET Transition Lab in the Outer Hebrides**

There was collective agreement from attendees that the RIPEET TL should continue as a valuable forum for discussing new research ideas, seeking appropriate funding and ensuring that there is no duplication of effort in terms of work on energy transition in the region. It was agreed that the [Islands Centre for Net Zero](#) should be the lead body that takes forward the TL in the Outer Hebrides. Further meetings to be organised by the ICNZ in mid-2024 will confirm the most immediate priorities for the TL. A key member of the RIPEET core team, Matthew Logan, will be leading on ICNZ activity in the region which will further help to ensure a smooth handover of the RIPEET TL to the ICNZ programme. More detail on the sustainability of the TL in the Outer Hebrides can be seen in D6.3 – Overall Impact Assessment.

### **3.6.2 Sustainability of the RIPEET pilot in the Outer Hebrides**

It was agreed that CnES were best placed to lead on actions arising from WPs 1 – 4, as they had led this work during the pilot and, during the course of the pilot, secured funding through the [Fast Followers](#) programme to employ a Net Zero Innovation and Delivery Officer who's remit has significant overlap to the main actions/next steps highlighted in WPs 1 – 4.

<sup>16</sup> Full notes from the sustainability session are available on request, contact [sarah.marshall@hient.co.uk](mailto:sarah.marshall@hient.co.uk).

---

The principal next steps highlighted for WPs 5 and 6 related to the need for additional research. It was felt that this should be led by a local, independent board comprised of many of the key stakeholders involved in the regional TL/co-creation team. UHI NWH would play a key role in this given their leadership of WPs 5 and 6 as well as their key role in the local academic sector.

The specifics of the ICNZ work programme are still being determined at the time that this report is being written but there is the potential that some of the future research needs identified through the RIPEET pilot could also be explored through the ICNZ.

The RIPEET core team and regional co-creation team agree that the majority of the main action points and next steps highlighted by the RIPEET pilot will be carried forward by other active regional initiatives.

## 4. Co-creation of energy innovation pilots in Ostrobothnia

### 4.1 Summary of regional energy innovation need identified through RIPEET methodology.

Based on the Ostrobothnian Transition Lab process including the Needs Definition workshop the following energy innovation need was identified as being the most urgent by stakeholders in Ostrobothnia:

***“More citizen-led energy initiatives and local energy communities in the region of Ostrobothnia”***

This was amended as follows to make it an appropriate title for the call for solutions:

***“Energy solutions connecting local resources to local solutions”.***

The chosen energy innovation need was based on:

**URGENCY** – First, there is now a need for a rapid transition towards renewable energy implying that there is a need for different types of solutions. Second, the energy transition will require fundamental social changes to patterns of both consumption and production, and a broader view on the concept of innovation is therefore needed, as well as, more inclusive processes where values, needs and expectations of society are better aligned with research and innovation activities. Third, there is a need to connect pilots and new evidence on local and decentralized solutions to the existing knowledge and expertise that the region’s ecosystem via the existing energy cluster holds on renewable energy solutions.

**EXPECTED IMPACT** – Solutions answering to this need would mostly benefit civil society including individual energy consumers, associations, and other citizen organizations.

**LINKS WITH EXISTING POLICY** – is linked to targets of the [Finnish climate and energy strategy “Carbon neutral Finland 2035”](#) and the [Regional Strategy](#) outlining that Ostrobothnia will by 2050 be carbon negative and have an emission-free energy production. “Building a sustainable energy system” and “Developing climate-smart innovations and business models” are outlined as two key regional development challenges for the period 2022-2025.

**LINKS WITH OTHER REGIONAL INITIATIVES** – is connected to other regional initiatives as well and to Ostrobothnia’s involvement in the EU commission’s initiative PRI, Partnerships for Regional Innovation during 2022-2023.

In Ostrobothnia, four applications were received by the Call for solutions deadline and considered by the Ostrobothnian Evaluation Committee according to the evaluation principles. Among the applications, two got very high scores and were both funded. One application was rejected as it did not meet the eligibility criteria of the call. The application ranked third and the one rejected lacked plans for co-creation of the suggested solutions with a broad stakeholder group, which was clearly described in the two funded project plans. The two funded pilot projects were the following:

1. **“Rural Green Transition in Ostrobothnia – Case Älvbyarna”**, carried out under the lead of Novia University of Applied Sciences in close collaboration with the Älvbyarna Village Association, to be implemented in Älvbyarna (in Swedish) Jokikylät (in Finnish), consisting of six small villages in the municipality of Korsholm. The solution was twofold: to expand the village cooperation into energy and resiliency questions, and to develop and test a calculation

tool to help the villages make well-informed fact-based decisions about their energy solutions. A handbook on village-level energy business models was developed from the test results.

2. **“Energy Village 3.0 – Ostrobothnia’s smart energy villages and communities”**, carried out by the Local Action Group (LAG) Aktion Österbotten, to be implemented in Esse (In Swedish) – Ähtävä (In Finnish), a village in the municipality of Pedersöre. This solution consisted in developing and piloting a new organisational model for developing strategies for smart energy villages that taps into the knowledge potential and local resources available. The model activates and enhances the capacity of villages and rural areas to deal with energy self-sufficiency and resilience.

## 4.2 Key details of the co-creation process

For both Ostrobothnian RIPEET pilot projects, a co-creation team was established. In the following two sub-chapters, the co-creation processes of the two pilot projects in Ostrobothnia will be presented and elaborated on. Case Älvbyarna is described in sub-section 4.2.1 and Energy Village 3.0 in sub-section 4.2.2.

### 4.2.1 Rural Green Transition in Ostrobothnia – Case Älvbyarna

The co-creation approach including co-creation team members was already described in detail in the pilot project plan and the solution provider had from the start a clear view on how to implement the co-creation process, as Älvbyarna Village Association was appointed the lead role for the co-creation process. The co-creation process of Case Älvbyarna is visualised in Figure 7.

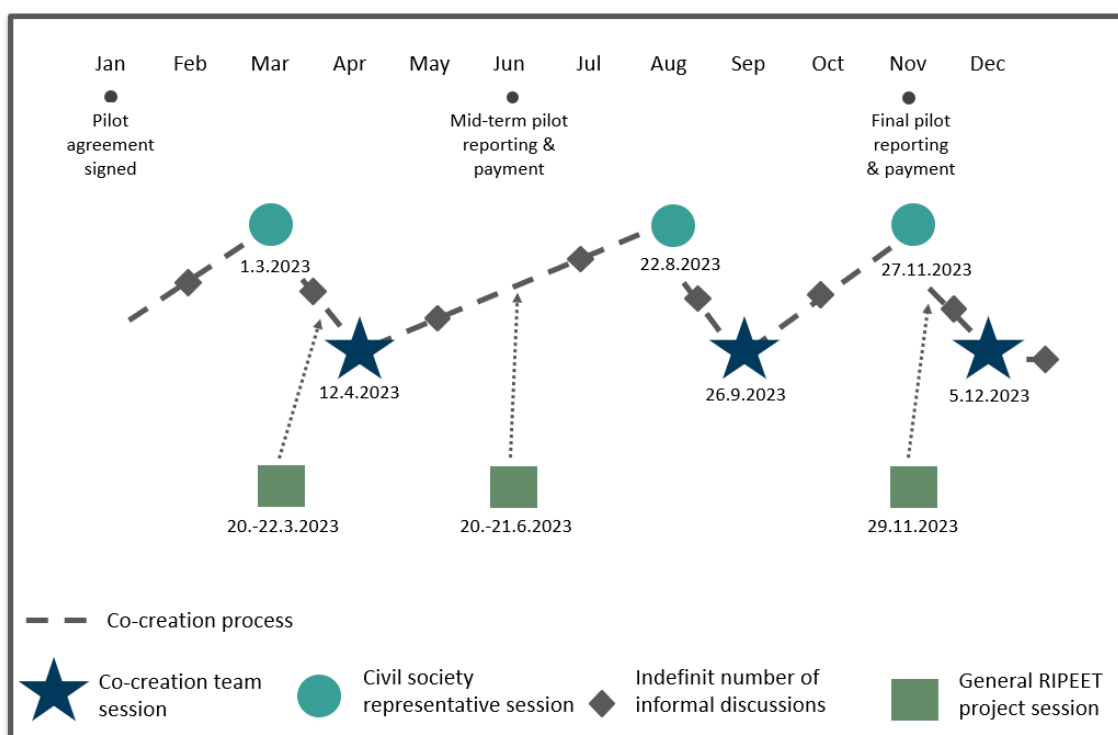


**Figure 7: Co-creation process – Case Älvbyarna**

As Figure 7 shows, the co-creation process was mainly structured based on two series of sessions: First, the mandatory co-creation team sessions, as described in the GA, and, second, the civil society representative sessions, which were set up as a separate series of meetings in order to give input to the co-creation team meetings to ensure that the outcomes of the pilot project were relevant for civil society. In addition, three sessions arranged by the main RIPEET project were held in the region of Ostrobothnia during the year 2023, which gave input to the co-creation process of the Ostrobothnian pilot projects: The Ostrobothnian mirror regions' visit in Vaasa in March 2023, the RIPEET GA and community session in June 2023 and the RIPEET sustainability workshop in November 2023. Finally, many informal discussions took place throughout the co-creation process based on needs emerging, all of them with the involvement of the co-creation process leader from the Älvbyarna Village Association, who kept track of the discussion outcomes and the developments during the whole process.

Both the co-creation team and the civil society representative group included members, which were joining the sessions and following the process throughout the pilot projects. The following organizations were represented:

- Civil society representatives
  - o Aktion Österbotten, i.e., the NGO network promoting the other Ostrobothnian RIPEET pilot project.
  - o Svenska Österbottens Ungdomsförbund, that is a regional umbrella organisation for youth associations.
  - o Finlands svenska hembygdsförbund, i.e., the Finno-swedish heritage association and, of course
  - o Älvbyarna i Östra Korsholm carrying out this pilot project,
- Novia University of Applied Sciences, as this pilot project owner
- University of Vaasa
- Regional Council of Ostrobothnia
- Merinova
- The Municipality of Korsholm
- Stormossen, a local waste treatment and circular economy company that is jointly owned by six communities.
- VASEK, the regional business and development company for the Vaasa region
- The energy utility Vaasan Sähkö

Details of the stakeholders involved with each co-creation session can be found in Annex 3. In the following sections, the details of the three arranged co-creation sessions will be presented. In connection to each co-creation session, the detailed input from the related civil society representative meeting will be described<sup>17</sup>.

<sup>17</sup> Detailed notes from the co-creation sessions and the civil society representative group meetings are available on request from Mona Enell-Nilsson: [moen@uwasa.fi](mailto:moen@uwasa.fi)

#### 4.2.1.1 Co-creation session 1

**Date of session: 12.4.2023**

**Participants: 10 (Female/Male: 6/4) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to kick-off the work of the co-creation team and to discuss essential aspects of the planned pilot, providing answers and feedback to the questions and comments raised by the civil society representatives in their related first meeting arranged 1.3.2023. As a part of the kick-off, general aspects of the RIPEET project, the details of the pilot project plan and the co-creation principles were presented and explained.

**Key outputs from the session:**

- Collective understanding of the status and the next steps for the pilot project and the related co-creation process
- Collective understanding of civil society's needs related to the planned pilot project contents, i.e. the calculation tool for buildings and the handbook on village-level energy business models, connected to a joint understanding of possibilities and limits of the planned actions within the RIPEET pilot framework.
- Dates for future RIPEET meetings and pilot co-creation sessions discussed and set.

#### 4.2.1.2 Co-creation session 2

**Date of session: 26.9.2023**

**Participants: 9 (Female/Male: 5/4) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to discuss the activities within the pilot project until this point in time and to provide answers and feedback to the questions and comments raised by the civil society representatives in their related second meeting arranged 22.8.2023. The co-creation session also aimed at collecting feedback and discussing remaining activities in the pilot project.

**Key outputs from the session:**

- Collective understanding of the status of the pilot project, remaining pilot project activities and connected planned meetings/sessions.
- Answers and feedback to the questions raised by the civil society representative group related to the following main topics:
  - o Small-scale energy production and grid
  - o Business models and organizational models
  - o Financial support and other available forms of support
- Plan for how to test the online calculation tool with civil society representatives and other relevant stakeholders.

#### 4.2.1.3 Co-creation session 3

**Date of session: 5.12.2023**

**Participants: 11 (Female/Male: 5/6) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to summarize the pilot project actions and to provide a final opportunity for influencing the tangible results of the pilot in terms of online calculation tool and handbook on village-level energy business models. In addition, the

aim was to discuss questions and comments raised by the civil society representatives in their related third meeting arranged 27.11.2023 focusing mainly on the testing of the current version of the online calculation tool for buildings.

**Key outputs from the session:**

- Collective understanding of the status of the pilot project, remaining pilot project activities
- Answers and feedback to the questions raised by the civil society representative group related to the online calculation tool.
- Collective understanding of the contents of the handbook on village-level energy business models
- Plan for dissemination of the tangible outcomes including a joint webinar with the other RIPEET Ostrobothnian pilot project.
- Collective understanding of ways forward after the pilot project

#### 4.2.2 Energy Village 3.0 – Ostrobothnia’s smart energy villages and communities

In the project plan for the second Ostrobothnian pilot, there was a general description of the co-creation approach and the co-creation process. In connection with the signing of the grant agreement, the detailed setup of the co-creation process and co-creation team was discussed and agreed upon with the RIPEET Ostrobothnian regional team. The co-creation process of this pilot project is visualized in Figure 8.

It was decided that the mandatory co-creation team sessions, as described in the GA, will be arranged as open sessions onsite in the village hall in Esse/Ähtävä. There were in total four such sessions arranged, from April to November 2023. The first session arranged in April 2023 was more an information session than a clear co-creation session, the other three sessions focused on gathering participants’ contributions in a workshop format. In addition, four other related meetings are shown in Figure 8. Three of them – the meetings arranged in April, September and December 2023 – are the co-creation sessions of the other Ostrobothnian pilot project, described in detail in section 4.2.1. As Aktion Österbotten, implementing the Energy Village 3.0 pilot project, was represented in the co-creation team of the Case Älvbyarna pilot, there was an efficient and well-functioning connection and communication between the two Ostrobothnian pilot projects, besides the general RIPEET project sessions. The fourth related meeting was an inspirational visit to Spikas Kvarn (in English: Spikas Mill) arranged by Aktion Österbotten. Spikas Kvarn is a site where different forms of renewable energy sources and actions for sustainable development are showcased at Spikas Rapid in Kronoby river. Similar to the other Ostrobothnian pilot, the three sessions arranged by the main RIPEET project in March, June and November 2023 gave additional input to the co-creation process, and many informal discussions took place throughout the co-creation process under the lead of Aktion Österbotten, who kept track of the discussion outcomes and the developments during the whole process.

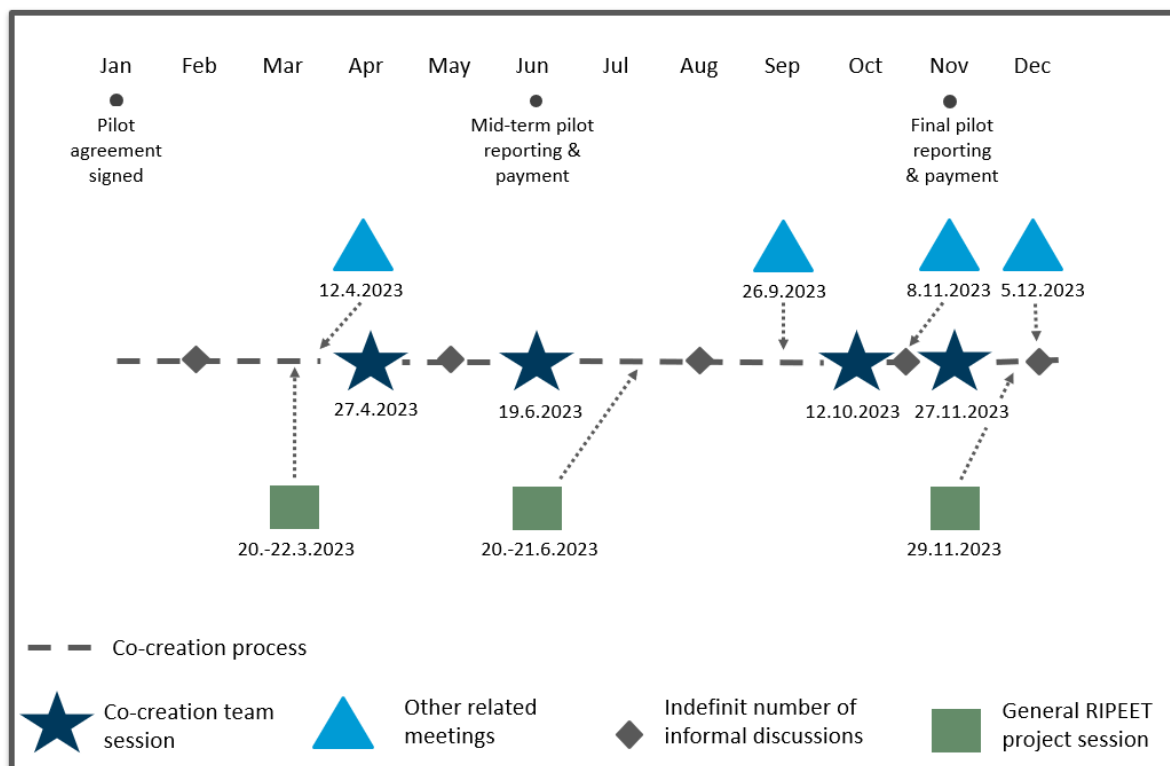


**Figure 8:** Co-creation process – Energy Village 3.0

Details of the stakeholders involved with each co-creation session can be found in Annex 3. In the following sections, the details of the four arranged co-creation sessions will be presented<sup>18</sup>.

#### 4.2.2.1 Co-creation session 1

**Date of session: 27.4.2023**

**Participants: 20 (Female/Male: 7/13) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to kick-off the work in the Esse/Ähtävä village by arranging an information session focusing on 1) the targets and activities of the RIPEET project in general, 2) the plan for the pilot project including an overview of the energy village concept and experiences gathered from earlier implementations, 3) other ongoing energy related projects and initiatives in Esse/Ähtävä and the surroundings.

**Key outputs from the session:**

- Collective understanding of the status of the general RIPEET project
- Collective understanding of the plan for the pilot project, the energy village concept and experiences gathered from earlier implementations.
- Collective understanding of the status of the development of the local biogas plant

<sup>18</sup> Detailed notes from the co-creation sessions are available on request from Mona Enell-Nilsson: [moen@uwasa.fi](mailto:moen@uwasa.fi)

- Collective understanding of the status of the local energy company Esse Elektrokraft's ongoing projects and initiatives related to solar power and second-life batteries/charging.

#### 4.2.2.2 Co-creation session 2

**Date of session: 19.6.2023**

**Participants: 23 (Female/Male: 10/13) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to carry out a SWOT analysis related to the current situation of the area. The current energy consumption level and the potential of the local energy production formed the starting point for the SWOT analysis.

**Key outputs from the session:**

- Collective understanding of the current energy consumption and the potential energy production of the area
- Collective understanding of strengths, weaknesses, opportunities and threats of the Esse/Ähtävä area

#### 4.2.2.3 Co-creation session 3

**Date of session: 12.10.2023**

**Participants: 16 (Female/Male: 5/11) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to prioritize the outcomes of the SWOT analysis and to identify the most important combinations of the SWOT analysis contents.

**Key outputs from the session:**

- Ranked combinations of the SWOT analysis outcomes forming a SWOT score board highlighting factors of a) no or very little relevance, b) little relevance, c) some relevance, d) large relevance
- Common understanding of factors of relevance for developing Esse/Ähtävä to an energy village/smart village

#### 4.2.2.4 Co-creation session 4

**Date of session: 27.11.2023**

**Participants: 11(Female/Male: 4/7) representing the quintuple helix**

**Summary of the purpose of the session:** The main purpose of the session was to collect ideas about concrete actions, which can be taken by individuals, a group of people or a community and to prioritize the suggested actions based on the potential of the ideas.

**Key outputs from the session:**

- Common understanding about possible concrete actions to be taken by individuals, a group of people or a community and their prioritization based on potential.
- A basis for developing an energy village/smart village strategy, which opens funding opportunities from the Leader Programme

The table below shows the total number of stakeholders who attended co-creation sessions for the Energy Village 3.0 pilot. Detail on the sector that stakeholders represented cannot be given as the sessions were open invitation workshops targeting anyone with a connection to Esse village. Attendees were members of the public who did not represent a stakeholder group.

|                            | Session 1 | Session 2 | Session 3 | Session 4 | Total |
|----------------------------|-----------|-----------|-----------|-----------|-------|
| <b>Number of attendees</b> | 20        | 23        | 16        | 11        | 70    |

### 4.3 Outputs from the co-creation processes

In Case Älvbyarna, the co-creation process supported the development of two main tangible results of the pilot project: the [online calculation tool](#) for buildings available in three languages (Swedish, Finnish and English), and the handbook on village-level energy business models available in Swedish (the English translation would be “A guide for business models for small scale energy production run by associations”). The content list for the guide (in Swedish) can be seen in Figure 9:

|                                                                          |    |
|--------------------------------------------------------------------------|----|
| 1. Introduktion.....                                                     | 3  |
| 2. Vad är en affärsmodell?.....                                          | 3  |
| 3. Bolags- och organisationsformer .....                                 | 3  |
| 4. Elproduktion eller inbesparingar.....                                 | 5  |
| 4.1. Metoder för att spara el- och värmekostnader .....                  | 5  |
| 4.2. Elproduktion med solpaneler.....                                    | 6  |
| 4.3. Batterilagring av el .....                                          | 7  |
| 4.4. Elproduktion med vindkraftverk .....                                | 8  |
| 4.5. Elproduktion med vattenkraftverk.....                               | 8  |
| 5. Understöd för att spara el eller skapa förnybar energi .....          | 9  |
| 6. Innovativa företag och organisationer inom förnybar elproduktion..... | 10 |
| 7. Råd från lokala föregångare inom förnybar energiproduktion .....      | 10 |
| 8. Sammanfattning - affärsmodeller.....                                  | 11 |
| Källförteckning.....                                                     | 13 |

**Figure 9:** The contents page from the handbook (in Swedish)

The guide covers an introduction, a definition of business models and an explanation of organisational and business forms, a main section on energy efficiency and a section on energy production related to different renewable energy sources. In addition, different forms of available (financial) support and recommendations from local frontrunners are summarized next to a short presentation of some international cases.

The inputs and discussions from the stakeholders connected to the co-creation process did not change the focus of the pilot, but they strongly influenced form, contents and functionalities of the tangible outcomes.

In Energy Village 3.0, the development of the tangible outcomes – the SWOT analysis result and the Smart Village roadmap (see Figure 10) heavily relied upon the co-creation process, as they were developed step-by-step based on the outcomes and discussions in the co-creation sessions. The aim is that all tangible results from both Ostrobothnian pilots will be available via the LAG web page, [Aktion Österbotten](#).

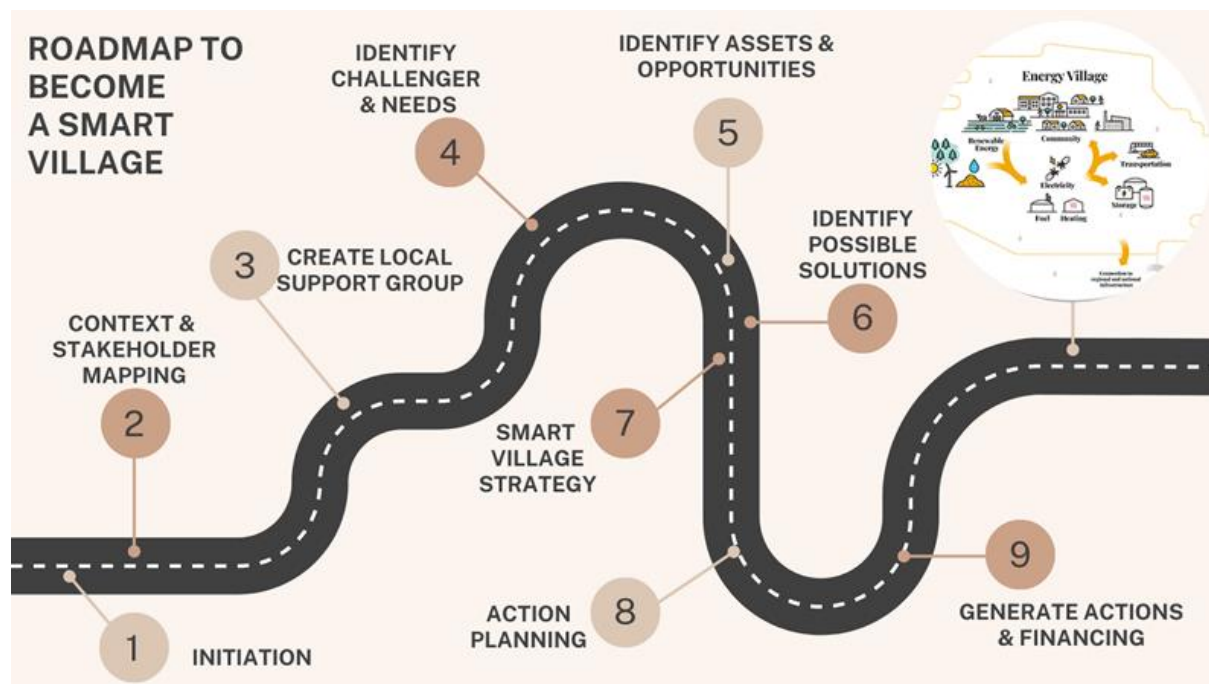


**Figure 10:** A copy of the roadmap to becoming a smart village.

It should be noted that ALL milestones for both regional pilots were met by the Solution Providers, this was confirmed during the Selection Panel Review meeting which was held on the 15<sup>th</sup> of January 2024<sup>19</sup>.

#### 4.4 Key learnings from the co-creation processes

The key learnings from the co-creation processes have been collected in discussions with the Ostrobothnian solution providers as well as with stakeholders involved in the co-creation processes connected to both pilot projects. The main learnings can be summarized as follows:

##### Flexibility in co-creation process design

The two co-creation processes connected to the RIPEET Ostrobothnian pilot projects were designed differently, even though the general principles, as described in the GA, were followed. The design turned out to be successful in both cases. This shows the importance of flexibility in the co-creation

<sup>19</sup> The full Selection Panel Review report for Ostrobothnia is labelled as “Report 8” and can be seen in Annex 4

process design based on what is needed for the development of a solution in a specific case. Thus, the principle of “one size fits all” cannot be applied.

### Co-creation process leadership

It is extremely important that one person (or one organisation) takes on the role of the co-creation process leader to keep track of outcomes of discussions, meetings and co-creation sessions throughout the process. In both Ostrobothnian pilot projects, there were clear co-creation process leaders via the organisations providing the pilot solutions. Moreover, it can also be underlined that the RIPEET regional team and the solution providers had a joint understanding of what co-creation implies and the expected impact of the pilot solutions. Thus, the regional team did not need to lead the co-creation processes and major challenges during the co-creation processes could be avoided.

### Clearly communicated target of each co-creation session

All sessions and meetings must be relevant for the participants attending. The target of each session needs to be communicated clearly, and the participants should understand how and to what extent they can influence and how the input given in one session is utilized for the following session or step.

### Co-creation process dynamics

The co-creation process should be designed in a way that it maintains the interest of the targeted stakeholders. The experiences from the implementation of RIPEET in Ostrobothnia has shown that the best solution is not always to have all stakeholders “around the same table” all the time. It might be a better solution to let certain stakeholders meet among themselves, as the civil society representative group did in Case Älvbyarna. This requires an engaged and dedicated co-creation process leader, who knows whom to involve when and who can facilitate the discussions and communicate the main messages between different sessions and meetings.<sup>20</sup>

Further, in terms of participation the picture shows a relatively smooth balance between the different quintuple stakeholder groups identified as relevant to the project, at least in the Case Älvbyarna. The abovementioned co-creation dynamics were crucial to secure continuous participation throughout the co-creation process. It has to be noted that stakeholder group data is not available for the Energy Village 3.0 project, as the co-creation sessions were open dialogue formats with the local citizens and residents, where a classification alongside the stakeholder categories would not have made sense.

*Table 3: Participation in Case Älvbyarna according to stakeholder groups.*

| Stakeholder group         | Number |
|---------------------------|--------|
| Civil society             | 4      |
| Civil society/environment | 6      |
| Public Authority          | 4      |
| Business                  | 7      |

<sup>20</sup> The Local Assessment Report for Ostrobothnia can be found in Annex 4 as “Report 9”.

|              |           |
|--------------|-----------|
| Research     | 9         |
| <b>Total</b> | <b>30</b> |

## 4.5 Key challenges and mitigation measures in the regional co-creation processes

In both Ostrobothnian pilot projects, the organizations implementing the projects had a clear view on how to carry out the co-creation process and they took a clear leading role in the process. Therefore, there were no major challenges linked to the co-creation part. The main challenge was, in the Energy Village 3.0 pilot, to maintain the interest of the target group, as there were no fixed members of the co-creation team, but the co-creation sessions were arranged as open invitation sessions arranged in the village hall. In particular the last co-creation session arranged on the 27.11.2023 only had a small number of participants, which was most likely also due to the extremely cold weather (minus 20 degrees outdoors) the evening when the session was arranged onsite in the village Esse/Ähtävä.

## 4.6 Pilot sustainability and next steps

In Ostrobothnia, a sustainability workshop was arranged 29.11.2023 to discuss among other things the sustainability of the RIPEET TL and the RIPEET pilots (workshop notes are available on request<sup>21</sup>).

### 4.6.1 Sustainability of the RIPEET Transition Lab in Ostrobothnia

Among involved regional stakeholders the Transition Lab was seen as a successful method for accelerating the regional energy transition. One of the long-term aims outlined in the Regional Strategy is that the energy system is based on renewable energy as well as decentralized and smart energy solutions. RIPEET has informed this regional strategy, since the two pilots are, in fact, two “anticipatory experiences” of this axis of the regional strategy. More generally, the Regional Council of Ostrobothnia is now working more on participatory processes in the energy sector based (also) on the RIPEET results. The discussions in the sustainability workshop clearly showed that different aspects and ways of working in the RIPEET TL and pilot implementation can and will be continued in various regional processes, actions and projects. One example is the new innovation network for democracy coordinated via the Regional Council of Ostrobothnia in cooperation with other actors, which aims to strengthen collaboration between regional actors to support innovation and democracy. Another example is the approach of connecting cascade funding to a needs definition process used in RIPEET, which has already now been applied in two new Horizon Europe applications with Ostrobothnian regional actors as partners. More detail on the sustainability of the TL in Ostrobothnia can be seen in D6.3 – Overall Impact Assessment.

### 4.6.2 Sustainability of the RIPEET pilots in Ostrobothnia

In the pilot Case Älvbyarna, the developed calculation tool for buildings will be further disseminated, both via the webpage of Novia University of Applied Sciences and Aktion Österbotten’s webpage. The aim is to disseminate it as widely as possible within the region of Ostrobothnia, but also to other regions in Finland and via the RIPEET international partners and mirror regions and to actors outside

<sup>21</sup> Notes are available on request from Mona Enell-Nilsson: [moen@uwasa.fi](mailto:moen@uwasa.fi)

Finland. The tool is available in Swedish, Finnish and English and can therefore be easily spread. The handbook will also be disseminated via the same webpages, but the target group is in this case smaller, as the handbook is written in Swedish and deals with the national Finnish context. The new collaborative relationships developed within Case Älvbyarna will continue and there are plans to apply for funding for follow-up projects, which were discussed also in the RIPEET sustainability workshop.

In the pilot Energy Village 3.0, there is a need to take the initial ideas developed and discussed in the co-creation sessions further. The village association is planning to apply for funding for taking local actions and a local energy day/event has been discussed, amongst other things. University of Vaasa/VEBIC and Aktion Österbotten have been granted a new project via the Just Transition Fund, which will further explore technical and business opportunities connected to renewable energy taken perspectives and opinions from different societal actors into account within Esse Elektrokraft's operational area. In parallel, Aktion Österbotten will spread the outcomes of the Energy Village 3.0 pilot to other villages and municipalities.

More generally, both villages involved in the RIPEET pilots in Ostrobothnia have, via the RIPEET pilots, entered the group of regional actors submitting proposals to the European Commission and to national/international funders, which opens new possibilities for future development.

## 5. Analysis of key learning points from the co-creation process

Summarising the key-learnings from the co-creation process implemented to design and implement the selected energy innovation pilots, we can discern some key trends that are detectable across the regions. The themes that emerged stress the necessity of clear communication, early engagement, flexibility, effective leadership, and the use of collaborative tools to enhance the co-creation process. Setting up co-creation processes in a regional context following these considerations can lead to more productive, regionally relevant, and well-managed co-creation initiatives, thereby facilitating successful outcomes and learning for future projects. Table 4 shares a more detailed list of learnings that were reported by the regional co-creation teams and it is visible that some of these trends concern all regions, why others were only mentioned in one of the regions.

*Table 4: A table summarising the key learning points for each of the RIPEET regions.*

| Learning Point                                                                                                                                   | Extremadura | Outer Hebrides | Ostrobothnia |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|--------------|
| Co-creation has been a useful and beneficial process                                                                                             | X           | X              | X            |
| Lack of familiarity with co-creation in the region – time needed to ensure that everyone was clear on roles and responsibilities                 | X           | X              |              |
| Flexibility needed in co-creation design process – it needs to be adapted to the specific situation of the project and the relevant stakeholders | X           |                | X            |
| Importance of a collaborative online workspace to aid group discussion and collaboration                                                         |             | X              |              |
| Importance of co-creation leadership/coordinator role to drive the process forward and maintain momentum                                         | X           |                | X            |

|                                                                                                                                      |  |  |   |
|--------------------------------------------------------------------------------------------------------------------------------------|--|--|---|
| Clearly communicated target of each co-creation session – participants should understand how and when they can influence the process |  |  | X |
| Co-creation process dynamics – it is not necessary for everyone attend every meeting                                                 |  |  | X |

From this table it is evident that although there was unfamiliarity with the process of co-creation in Extremadura and the Outer Hebrides, through investing significant time early in the process to ensure that everyone understood co-creation, ultimately the co-creation approach was felt to have been useful by all three RIPEET regions. There is also evidence from the regional local assessment meetings that this viewpoint was shared by the stakeholders and solution providers as well as the RIPEET regional teams.

Extremadura and Ostrobothnia shared the opinion that there is a need to be flexible with the implementation of the co-creation process and to tailor the nature, timing and attendance of the sessions based on the needs of the specific session and the stakeholders involved. This was felt to be a key point and should be central in the planning of future co-creation processes.

These two regions also agreed on the importance of having a dedicated coordinator who leads and manages the co-creation process. This helps to ensure that process momentum is maintained. In the Outer Hebrides this role was taken on by the RIPEET regional team who have fed back that it would have been very helpful to have somebody in this role during the delivery of their regional pilot. Extremadura and Ostrobothnia have both discussed how they felt that having a dedicated lead for the co-creation process was instrumental in the success of the co-creation of their regional pilot. Ensuring that there is a dedicated co-creation leader/coordinator is therefore highlighted as another key factor in ensuring that a co-creation process is successful and productive.

In the Outer Hebrides the solution providers fed back that it would have been useful to have had an online collaborative workspace to better facilitate groups discussion and collaboration in between co-creation sessions. Whilst this was not raised specifically by the other regions as a learning point, this could be a valuable tool in a co-creation process (but this may depend on the specifics of the co-creation process).

Finally, Ostrobothnia highlighted that participants need to understand from the outset when and how they can influence the co-creation process. This helps to manage expectations and reduces the risk of participants becoming frustrated later in the process if they do not feel their views are being adequately considered. Similarly, Ostrobothnia also felt that it was not necessary (or useful) to have every stakeholder attending every session. Some sessions could only be relevant for certain stakeholders (depending on the process), and it is important that this is set out early in the co-creation process to ensure that stakeholders do not attend meetings which are not relevant to them and to make sure that meeting attendees do not feel excluded.

All points discussed in this section provide a useful set of guidelines which future initiatives wanting to implement a co-creation approach should consider so that the process is as productive, regionally relevant and well managed as possible. Whilst many of these points could be considered as relatively

obvious, it is nonetheless important to highlight the key learning points from the regional RIPEET co-creation processes. Co-creation is still a relatively new term for many, and these points, whilst perhaps obvious, still need to be noted and shared to ensure that the learning from RIPEET is passed on to support future successful co-creation processes.

## 6. Analysis of key regional challenges and mitigation measures

It is apparent that Ostrobothnia had very few challenges relating to co-creation. The solution providers for both of their two pilots had developed comprehensive co-creation strategies during the application phase to the open call for energy innovation solutions and the processes for both pilots were led by a dedicated coordinator who maintained momentum and interest in the process. This meant that both co-creation processes were run with very few issues. The main regional challenge reported was that it was sometimes difficult to maintain the interest of the target group for the Energy Village 3.0 pilot, membership of this co-creation was very flexible and session attendance was occasionally impacted by adverse weather but this did not significantly affect pilot delivery.

The Outer Hebrides was faced with practical challenges around staff resourcing and absence due to illness which delayed the start of the co-creation process. This issue had the potential to significantly affect the regional pilot but the solution provider brought additional resource to the delivery team to ensure that all milestones were met within the prescribed timeframe and as seen in the previous section, the co-creation approach was regarded as successful in the region.

Both Extremadura and the Outer Hebrides outlined a lack of familiarity with the term and process of co-creation as being a challenge. Both regions mitigated this risk by making sure that time and effort was given to ensuring that the solution provider and regional stakeholders were provided with an adequate introduction to co-creation to enable them to meaningfully participate in the co-creation process. This strategy was successful as high levels of support for co-creation were reported in both regions at the local assessment meetings.

The regional team in Extremadura found that they needed to adapt the timing of their co-creation sessions as an important group of stakeholders could not attend sessions during the morning. The co-creation team mitigated this issue by organising the fourth co-creation session for the afternoon to ensure that these stakeholders could make a meaningful contribution to the process.

Another unique challenge to the Extremadura team was the need to gather a significant amount of information to help inform what the structure of the pilot website should be as well as what information should be hosted on the website. To ensure maximum participation, co-creation sessions were held online as this was a more convenient method for stakeholders to attend co-creation meetings. The solution provider also held dedicated in person meetings with key stakeholders to gather further, more detailed data. Feedback on the website produced by the pilot has been very positive so this challenge has also been adequately addressed.

In summary, it is evident that some small challenges were experienced by all three of the RIPEET pilot regions but these were minor in Ostrobothnia. Extremadura experienced some logistical challenges in terms of needing to amend the timing of co-creation sessions and the need to host sessions online to ensure maximum participation, but these challenges were easily mitigated to ensure successful delivery of the regional pilot. The staffing challenges in the Outer Hebrides had the potential to have

a significant impact on co-creation and pilot delivery but due to successfully bringing in additional staff resource, this issue was also successfully mitigated.

## 7. Conclusions

All pilots in the RIPEET regions have been successfully implemented by the RIPEET regional teams. There is agreement between local stakeholders and the RIPEET regional teams that these pilot projects have made significant progress in helping to address the most urgent regional energy innovation needs as identified by regional stakeholders in the three RIPEET regions.

It is evident that all three RIPEET regions see significant value in continuing the work of the regional Transition Labs and pilots developed through RIPEET. All regions discussed how the work of the TL will continue in some form although the specific format of the ongoing TLs will continue to vary according to regional needs. Indeed, it is likely that the role, attendance and format of the regional TLs is likely to evolve as the energy needs of the region develops in the future.

Each of the regions has described how the work of the RIPEET pilots will be taken forward. In Extremadura, there are ongoing discussions on how the website and network of promoters will be supported in the future but it has been identified as a key regional priority by stakeholders from all sectors. In the Outer Hebrides, the ICNZ will take over the running of the TL and the action points/next steps highlighted in the reports for developing a local energy economy will be taken forward in combination between the ICNZ and another regional initiative, Fast Followers. In Ostrobothnia the TL approach is being used in other regional initiatives, the outputs from Case Älvbyarna are being actively disseminated and in the case of Energy Village 3.0, the outputs have been shared with other municipalities and the data gathered through the pilot has been used to apply for project funding. It can therefore be seen that there is strong evidence of sustainability for the regional TLs and pilots in all the RIPEET regions.

Although all regions felt that co-creation was a useful process for delivering the pilots, it is apparent that challenges were experienced during pilot delivery such as an unfamiliarity with the term co-creation and delays due to staff absence and resourcing. However, this report demonstrates that these issues were properly identified and appropriate mitigation measures implemented so that successful pilot delivery was not significantly affected in any of the regions.

Several key learning points have been highlighted in section 5 of this report which would serve as a useful basis for guidelines for successful co-creation. These are summarised below and would provide a useful starting point for developing best practice guidelines for co-creation:

### Early engagement and understanding

- There may be a lack of familiarity with co-creation, adequate time needs to be taken early in the process to ensure that everyone understands the term and process as well as roles and responsibilities of all stakeholders being clearly defined from the outset. This initial step is crucial for setting the stage for effective collaboration.

### Leadership and coordination

- It is important that somebody takes on a co-creation leadership/coordinator role to take ownership of the process, drive the project forward and maintain momentum. This is pivotal to manage the co-creation project effectively and to ensure all participants are aligned with the co-creation objectives.

---

### **Flexibility and adaptation**

- Flexibility is needed in the co-creation design process – co-creation needs to be adapted to the specific situation of the project and the relevant stakeholders i.e. tailor the timing, location or mode of delivery (online or in person) of co-creation sessions to ensure maximum/appropriate attendance participation.

### **Clear communication and collaborative tools**

- It is important to clearly communicate the goal of each co-creation session – participants should understand how and when they can influence the process. Not doing so may result in frustration during the process if stakeholders do not feel that their views are being adequately heard.
- It may be important to organise a collaborative online workspace to aid group discussion and collaboration during and in between co-creation sessions.

### **Management of process dynamics and expectations**

- Co-creation process dynamics – it is not automatically necessary for everyone to attend every co-creation session. It may be more appropriate to have several smaller co-creation sessions with particular stakeholder groups. This requires an engaged and dedicated co-creation process leader, who knows whom to involve when and who can facilitate the discussions and communicate the main messages between different sessions and meetings. This avoids stakeholders being involved in sessions which are not relevant to them thus reducing the risk of meeting fatigue.

## Annex 1 – Stakeholder data for Extremadura

### Stakeholder details for co-creation session 1<sup>22</sup>

| Gender of attendee | Organisation represented                  | Stakeholder group                           |
|--------------------|-------------------------------------------|---------------------------------------------|
| Male               | FUNDECYT-PCTEX                            | Process Monitor. Innovation Policies        |
| Female             | FUNDECYT-PCTEX                            | Process Monitor. Innovation Policies        |
| Female             | FUNDECYT-PCTEX                            | Process Monitor. Innovation Policies        |
| Female             | AGENEX                                    | Process Monitor. Energy Policies            |
| Female             | ENVERDE                                   | Solution Provider. Citizens                 |
| Female             | ENVERDE                                   | Solution Provider. Citizens                 |
| Female             | ENVERDE                                   | Solution Provider. Citizens                 |
| Male               | Mancomunidad Siberia                      | Potential User. Local Public Administration |
| Female             | ADISGATA                                  | Potential User. Local Public Administration |
| Female             | Mancomunidad Integral de Municipio Centro | Potential User. Local Public Administration |
| Female             | Mancomunidad Integral de Municipio Centro | Potential User. Local Public Administration |
| Male               | Mancomunidad Integral de Municipio Centro | Potential User. Local Public Administration |
| Male               | CEDER La Serena                           | Potential User. Local Public Administration |
| Male               | CEDER Zafra Río Bodi6n                    | Potential User. Local Public Administration |

<sup>22</sup> Names of co-creation attendees have been removed for confidentiality reasons but this data is available on request and is safely stored according to GDPR legislation.

|        |                  |                                             |
|--------|------------------|---------------------------------------------|
| Female | CEDER Cáparra    | Potential User. Local Public Administration |
| Male   | CEDER La Siberia | Potential User. Local Public Administration |
| Female | MC2              | Potential User. Industry                    |

#### Stakeholder details for co-creation session 2

| Gender of attendee | Organisation represented                | Stakeholder group                            |
|--------------------|-----------------------------------------|----------------------------------------------|
| Male               | FUNDECYT-PCTEX                          | Process Monitor. Innovation Policies         |
| Female             | FUNDECYT-PCTEX                          | Process Monitor. Innovation Policies         |
| Female             | ENVERDE                                 | Solution Provider. Citizens                  |
| Female             | Mancomunidad Integral Municipios Centro | Potential User. Local Public Administrations |
| Male               | Mancomunidad Integral Municipios Centro | Potential User. Local Public Administrations |
| Male               | Ceder ZAFRA RIO BODIÓN                  | Potential User. Local Public Administrations |

#### Stakeholder details for co-creation session 3

| Gender of attendee | Organisation represented                | Stakeholder group                            |
|--------------------|-----------------------------------------|----------------------------------------------|
| Female             | FUNDECYT-PCTEX                          | Process Monitor. Innovation Policies         |
| Female             | FUNDECYT-PCTEX                          | Process Monitor. Innovation Policies         |
| Female             | AGENEX                                  | Process Monitor. Energy Policies             |
| Female             | ENVERDE                                 | Solution Provider. Citizens                  |
| Female             | Mancomunidad Integral Municipios Centro | Potential User. Local Public Administrations |

|           |                                         |                                                                        |
|-----------|-----------------------------------------|------------------------------------------------------------------------|
| Male      | Mancomunidad Integral Municipios Centro | Potential User. Local Public Administrations                           |
| Male      | Ceder ZAFRA RIO BODIÓN                  | Potential User. Local Public Administrations. Environmental specialist |
| Anonymous | INSERVAL                                | Potential User. Industry                                               |

#### Stakeholder details for co-creation session 4

| Gender of attendee | Organisation represented | Stakeholder group                    |
|--------------------|--------------------------|--------------------------------------|
| Male               | FUNDECYT-PCTEX           | Process Monitor. Innovation Policies |
| Female             | FUNDECYT-PCTEX           | Process Monitor. Innovation Policies |
| Female             | ENVERDE                  | Solution Provider. Citizens          |
| Female             | ENVERDE                  | Solution Provider. Citizens          |
| Male               | Individual person        | Potential User. Citizens             |
| Female             | Individual person        | Potential User. Citizens             |

## Annex 2 - Stakeholder data for the Outer Hebrides

#### Stakeholder details for co-creation session 1<sup>23</sup>:

| Gender of attendee | Organisation represented         | Stakeholder group |
|--------------------|----------------------------------|-------------------|
| Male               | Climate Hebrides                 | Civil society     |
| Male               | Community Land Outer Hebrides    | Civil society     |
| Male               | Barra and Vatersay Community Ltd | Civil society     |
| Male               | Point and Sandwick Trust         | Civil Society     |

<sup>23</sup> Names of co-creation attendees have been removed for confidentiality reasons but this data is available on request and is safely stored according to GDPR legislation.

|                          |                                                                            |                                |
|--------------------------|----------------------------------------------------------------------------|--------------------------------|
| Female                   | NatureScot                                                                 | Environment                    |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                         |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                         |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                         |
| Male                     | GreenspaceLive!                                                            | Private                        |
| Male                     | Comhairle nan Eilean Siar                                                  | Public                         |
| Female                   | Comhairle nan Eilean Siar                                                  | Public                         |
| <b>Solution provider</b> |                                                                            |                                |
| Male                     | Comhairle nan Eilean Siar                                                  | Public/Solution Provider       |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| <b>RIPEET core team</b>  |                                                                            |                                |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public/RIPEET core team        |
| Male                     | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |

#### Stakeholder details for co-creation session 2:

| Gender of attendee | Organisation represented         | Stakeholder group |
|--------------------|----------------------------------|-------------------|
| Male               | Climate Hebrides                 | Civil society     |
| Male               | Community Land Outer Hebrides    | Civil society     |
| Male               | Barra and Vatersay Community Ltd | Civil society     |
| Male               | Point and Sandwick Trust         | Civil Society     |
| Female             | Community Energy Scotland        | Civil Society     |
| Female             | Storas Uibhist                   | Civil Society     |

|                          |                                                                            |                                |
|--------------------------|----------------------------------------------------------------------------|--------------------------------|
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                         |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                         |
| Female                   | Comhairle nan Eilean Siar                                                  | Public                         |
| <b>Solution provider</b> |                                                                            |                                |
| Male                     | Comhairle nan Eilean Siar                                                  | Public/Solution Provider       |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| <b>RIPEET core team</b>  |                                                                            |                                |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public/RIPEET core team        |
| Male                     | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |

**Stakeholder details for co-creation session 3:**

| Gender of attendee       | Organisation represented                                                   | Stakeholder group                         |
|--------------------------|----------------------------------------------------------------------------|-------------------------------------------|
| Male                     | Climate Hebrides                                                           | Civil society                             |
| Male                     | Barra and Vatersay Community Ltd                                           | Civil society                             |
| Male                     | Point and Sandwick Trust                                                   | Civil Society                             |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                                    |
| Male                     | GreenspaceLive!                                                            | Private                                   |
| Female                   | Comhairle nan Eilean Siar                                                  | Public                                    |
| Male                     | Islay Energy Trust                                                         | MSc student carrying out research for WP6 |
| Female                   | Storas Uibhist                                                             | Civil Society                             |
| <b>Solution provider</b> |                                                                            |                                           |
| Female                   | Comhairle nan Eilean Siar                                                  | Public/Solution Provider                  |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider                |

|                         |                                                                            |                                |
|-------------------------|----------------------------------------------------------------------------|--------------------------------|
| Male                    | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| <b>RIPEET core team</b> |                                                                            |                                |
| Female                  | Highlands and Islands Enterprise (HIE)                                     | Public/RIPEET core team        |
| Male                    | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |
| Female                  | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |

#### Stakeholder details for co-creation session 4:

| Gender of attendee       | Organisation represented                                                   | Stakeholder group              |
|--------------------------|----------------------------------------------------------------------------|--------------------------------|
| Female                   | NatureScot                                                                 | Environment                    |
| Male                     | Comhairle nan Eilean Siar                                                  | Public                         |
| Female                   | Storas Uibhist                                                             | Civil Society                  |
| <b>Solution provider</b> |                                                                            |                                |
| Male                     | Comhairle nan Eilean Siar                                                  | Public/Solution Provider       |
| Female                   | Comhairle nan Eilean Siar                                                  | Public/Solution Provider       |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider     |
| <b>RIPEET core team</b>  |                                                                            |                                |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public/RIPEET core team        |
| Male                     | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |
| Female                   | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team |

#### Stakeholder details for co-creation session 5:

| Gender of attendee | Organisation represented | Stakeholder group |
|--------------------|--------------------------|-------------------|
|--------------------|--------------------------|-------------------|

|                          |                                                                            |                                           |
|--------------------------|----------------------------------------------------------------------------|-------------------------------------------|
| Male                     | Barra and Vatersay Community Ltd                                           | Civil society                             |
| Male                     | Community Land Outer Hebrides                                              | Civil society                             |
| Female                   | NatureScot                                                                 | Environment                               |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public                                    |
| Male                     | GreenspaceLive!                                                            | Private                                   |
| Male                     | Comhairle nan Eilean Siar                                                  | Public                                    |
| Male                     | Islay Energy Trust                                                         | MSc student carrying out research for WP6 |
| <b>Solution provider</b> |                                                                            |                                           |
| Female                   | Comhairle nan Eilean Siar                                                  | Public/Solution Provider                  |
| Male                     | Comhairle nan Eilean Siar                                                  | Public/Solution Provider                  |
| Male                     | University of the Highlands and Islands North, West and Hebrides (UHI NWH) | Academia/Solution Provider                |
| <b>RIPEET core team</b>  |                                                                            |                                           |
| Female                   | Highlands and Islands Enterprise (HIE)                                     | Public/RIPEET core team                   |
| Male                     | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team            |
| Female                   | Community Energy Scotland (CES)                                            | Civil society/RIPEET core team            |

## Annex 3 - Stakeholder data for Ostrobothnia<sup>24</sup>

### Case Älvbyarna

#### Stakeholder details for co-creation session 1:

| Name of attendee         | Organisation represented                                                  | Stakeholder group                           |
|--------------------------|---------------------------------------------------------------------------|---------------------------------------------|
| Female                   | Aktion Österbotten                                                        | Civil Society                               |
| Female                   | VASEK, the regional business and development company for the Vaasa region | Business                                    |
| Male                     | Stormossen                                                                | Business                                    |
| Male                     | Municipality of Korsholm                                                  | Public                                      |
| <b>Solution provider</b> |                                                                           |                                             |
| Female                   | Älvbyarna i Östra Korsholm                                                | Civil Society/Environment/Solution Provider |
| Female                   | Älvbyarna i Östra Korsholm                                                | Civil Society/Environment/Solution Provider |
| Male                     | Novia University of Applied Sciences                                      | Academia/Solution Provider                  |
| <b>RIPEET core team</b>  |                                                                           |                                             |
| Female                   | Regional Council of Ostrobothnia (RCO)                                    | Public/RIPEET core team                     |
| Female                   | University of Vaasa (UVA)                                                 | Academia/RIPEET core team                   |
| Male                     | Merinova                                                                  | Business/RIPEET core team                   |

#### Stakeholder details for co-creation session 2:

| Name of attendee | Organisation represented | Stakeholder group |
|------------------|--------------------------|-------------------|
|------------------|--------------------------|-------------------|

<sup>24</sup> Names of co-creation attendees have been removed for confidentiality reasons but this data is available on request and is safely stored according to GDPR legislation.

|                          |                                        |                                             |
|--------------------------|----------------------------------------|---------------------------------------------|
| Female                   | Aktion Österbotten                     | Civil Society                               |
| Male                     | Vaasan Sähkö                           | Business                                    |
| <b>Solution provider</b> |                                        |                                             |
| Female                   | Älvbyarna i Östra Korsholm             | Civil Society/Environment/Solution Provider |
| Female                   | Älvbyarna i Östra Korsholm             | Civil Society/Environment/Solution Provider |
| Male                     | Novia University of Applied Sciences   | Academia/Solution Provider                  |
| Male                     | Novia University of Applied Sciences   | Academia/Solution Provider                  |
| <b>RIPEET core team</b>  |                                        |                                             |
| Female                   | Regional Council of Ostrobothnia (RCO) | Public/RIPEET core team                     |
| Female                   | University of Vaasa (UVA)              | Academia/RIPEET core team                   |
| Male                     | Merinova                               | Business/RIPEET core team                   |

### Stakeholder details for co-creation session 3:

| Name of attendee         | Organisation represented   | Stakeholder group                           |
|--------------------------|----------------------------|---------------------------------------------|
| Female                   | Aktion Österbotten         | Civil Society                               |
| Male                     | Aktion Österbotten         | Civil Society                               |
| Male                     | Stormossen                 | Business                                    |
| <b>Solution provider</b> |                            |                                             |
| Female                   | Älvbyarna i Östra Korsholm | Civil Society/Environment/Solution Provider |

|                         |                                        |                                             |
|-------------------------|----------------------------------------|---------------------------------------------|
| Female                  | Älvbyarna i Östra Korsholm             | Civil Society/Environment/Solution Provider |
| Male                    | Novia University of Applied Sciences   | Academia/Solution Provider                  |
| Male                    | Novia University of Applied Sciences   | Academia/Solution Provider                  |
| Male                    | Novia University of Applied Sciences   | Academia/Solution Provider                  |
| <b>RIPEET core team</b> |                                        |                                             |
| Female                  | Regional Council of Ostrobothnia (RCO) | Public/RIPEET core team                     |
| Female                  | University of Vaasa (UVA)              | Academia/RIPEET core team                   |
| Male                    | Merinova                               | Business/RIPEET core team                   |

### Energy Village 3.0<sup>25</sup>

#### Stakeholder details for co-creation session 1:

| Name of attendee | Organisation represented | Stakeholder group |
|------------------|--------------------------|-------------------|
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| male             | not available            | not available     |
| male             | not available            | not available     |

<sup>25</sup> Data on organisations represented and stakeholder group represented are not available for the Energy Village 3.0 co-creation sessions. This is because the workshops were open invitation workshops targeting anyone with a connection to Esse village. Attendees were members of the public who did not represent a stakeholder group.

|      |               |               |
|------|---------------|---------------|
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |

#### Stakeholder details for co-creation session 2:

| Name of attendee | Organisation represented | Stakeholder group |
|------------------|--------------------------|-------------------|
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |
| female           | not available            | not available     |

|      |               |               |
|------|---------------|---------------|
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |

### Stakeholder details for co-creation session 3:

|        |               |               |
|--------|---------------|---------------|
| female | not available | not available |
| female | not available | not available |
| female | not available | not available |
| female | not available | not available |
| female | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |

|      |               |               |
|------|---------------|---------------|
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |
| male | not available | not available |

#### Stakeholder details for co-creation session 4:

|        |               |               |
|--------|---------------|---------------|
| female | not available | not available |
| female | not available | not available |
| female | not available | not available |
| female | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |
| male   | not available | not available |

## Annex 4 Local Assessment Reports and Output collection

See the attached zip-folder for the reports.