Moderated by: Tatiana Loureiro
R2M Solution Spain

Summary

1.- LIGHTNESS, speaker: Paula Jiménez (Traza Territorio)

2.- HESTIA, speakers: Aggeliki Aggeli (Alborg U.) and Marta Arniani (Gridability)

3.- LocalRES, speaker: Julia Blanke (MTU)

4.- CREATORS, speaker: Blanca Barrios (R2M Solution)

LIGHTNESS

Engaging communities in the future of energy

SUSTAINABLE PLACES 2022

This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement n° 953020.

Engaging people and technologies

Traza Territorio

Paula Jiménez Argumosa

paula@trazaterritorio.com

08/09/2022

Index

1. Lightness project *- Engaging communities in the future of energy*

Empower citizens to generate, share and sell renewable energy and thereby contribute to making the European energy sector more sustainable and democratic

Coming together to produce, exchange, or sell renewable energy at a fair price and contribute to a just energy transition

2. Envisioning the future of energy

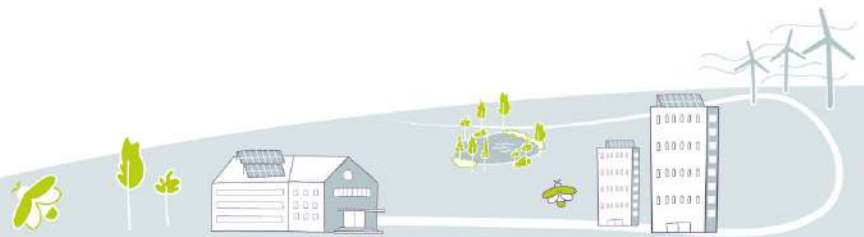
3. Working areas

Social engagement

Low-cost technological package

Innovative business models

Regulatory roadmap



3. Working areas *Social innovation*

- Citizens' **participation and empowerment**, working towards a more democratic energy system
- How to **shift the energy culture**?
- **3 pillars of engagement**:

Explore

Context analyses of needs, wants, desires

Recruit

Inform and involve different users

Co-design

Participatory methods and co-creation of the app

3. Working areas *Social innovation*

Tools to engage end-users:

- **Interview** guide
- Living engagement plans that integrate **feedback loops**
- Relatable and human centric **brochures**
- **Facilitation tools**

+ *For kids!*

3. Working areas *Social innovation*

Workshop in Woerden, *The Netherlands*

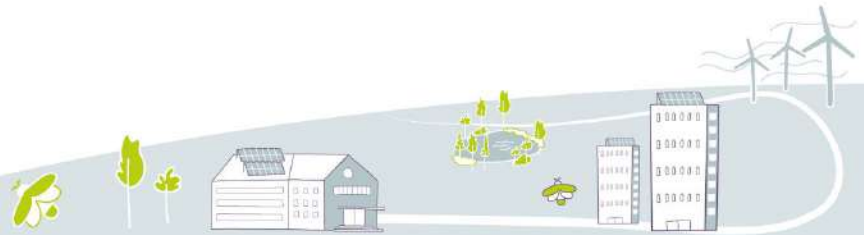
Workshop in Cagliari, *Italy*

Workshop in Wroclaw, *Poland*

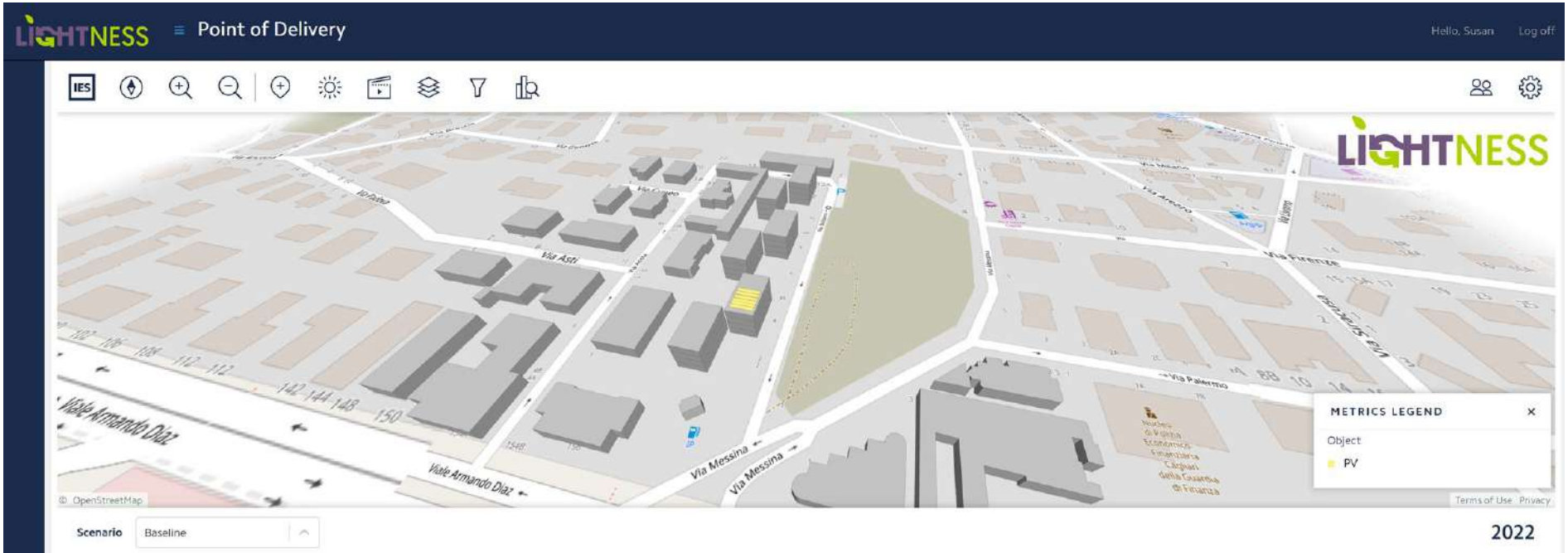
Workshops in Alginet, *Spain*

3. Working areas *Technological innovation*

- **Dashboard to envision scenarios** for the a holistic analyses of the pilots
  - Technical indicators to help pilot leaders make informed decisions
  - Indicators differ based on each community; energy poverty, size of batteries, etc. based on population, climate, etc.
- **Co-designed app to track and control energy usage**
  - Gamification and features to engage end-users and promote learnings and behavioural changes



3. Working areas *Technological innovation*

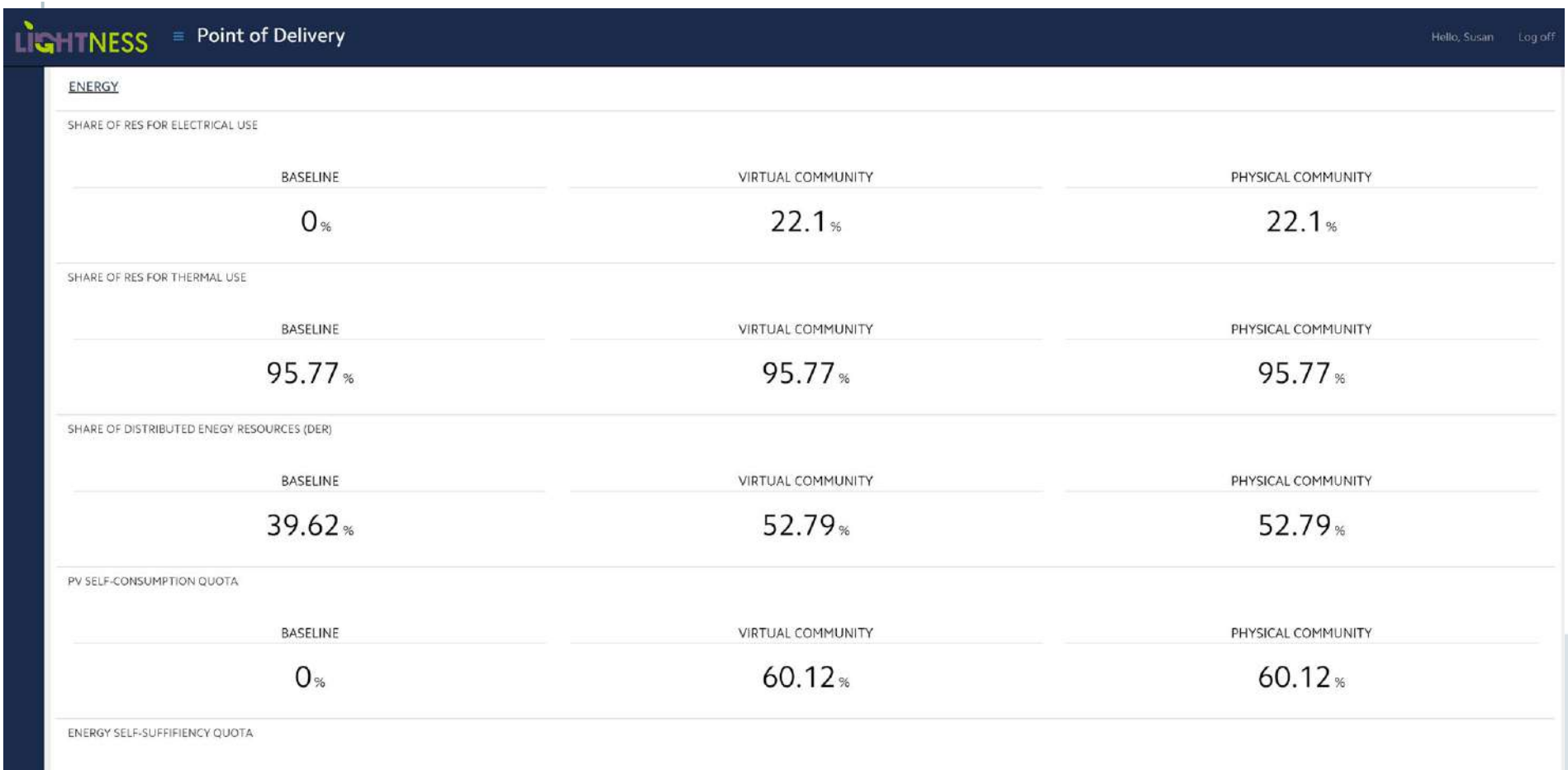


Scenario: Type of Energy Community

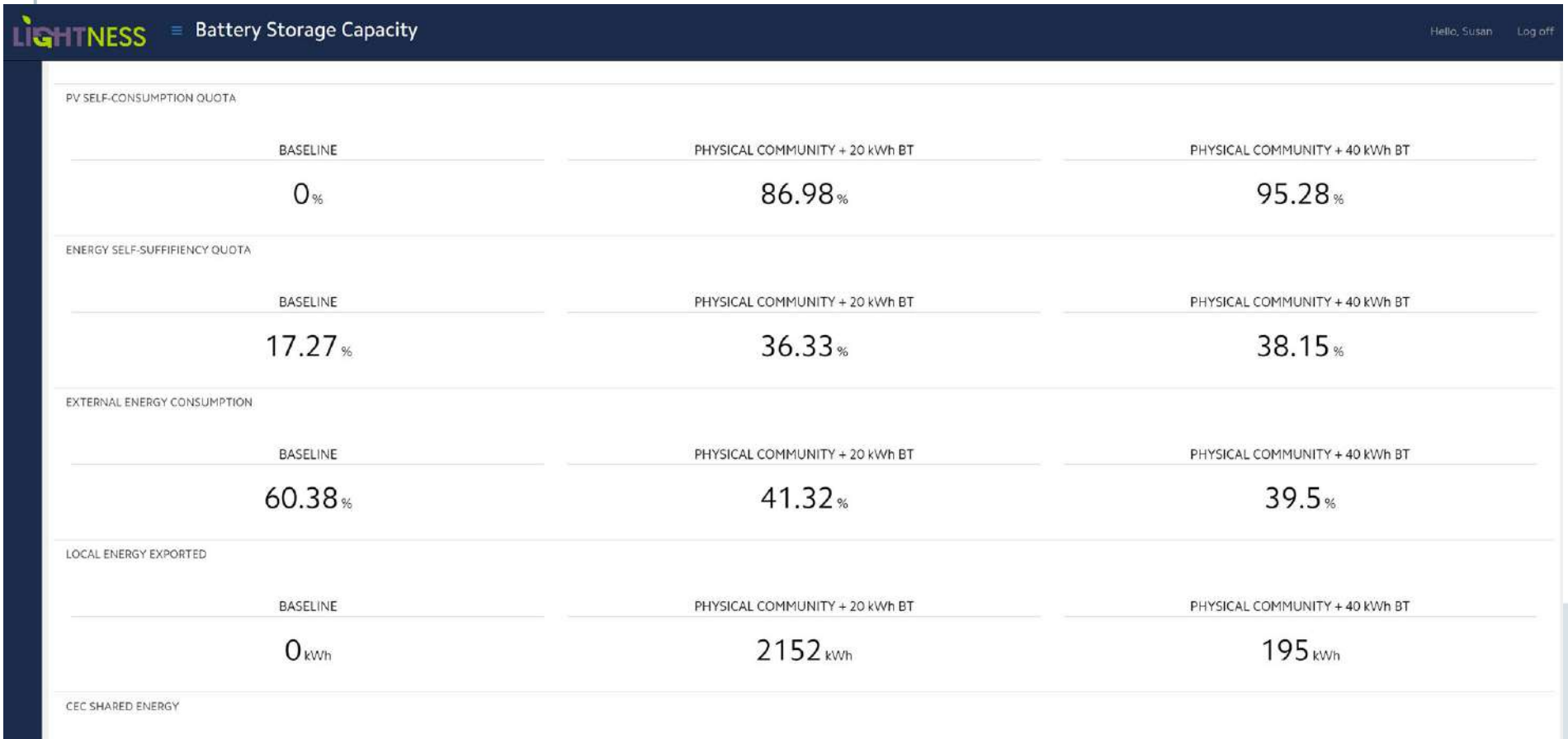
This is an analysis into the two types of citizen energy community (CEC) that could be implemented for the condominium in Cagliari. Two options are possible: a virtual community or a physical community. The virtual community scenario refers to the implementation of the CEC where each apartment retains its own connection, point of delivery (POD), to the grid, and local renewable electricity generation is physically connected to the common energy used for centralised heating, cooling, domestic hot water and lighting of the common spaces. In this scenario, each apartment will retain its own POD and there will be one centralised POD at condominium level. As the energy community is virtual, the energy is not physically shared, meaning that the condominium can consume local solar PV generation for common use only, injecting any excess into the grid. As this scenario involves the constitution of the CEC as a legal entity, the users receive a public incentive for the "shared energy", while still paying their bill to the energy prodiver. The physical community scenario involves the aggregation of the condominium into one POD, allowing residents to consume the local PV generation in their apartments, while also allowing consumption for common uses. As there is no formal CEC formation, all energy consumed by the building is considered "self-consumption", with no "shared energy".

Three economic cases have been considered for each scenario: the Superbonus 110% scheme, the Ecobonus 50% scheme, and the absence of any funding scheme.

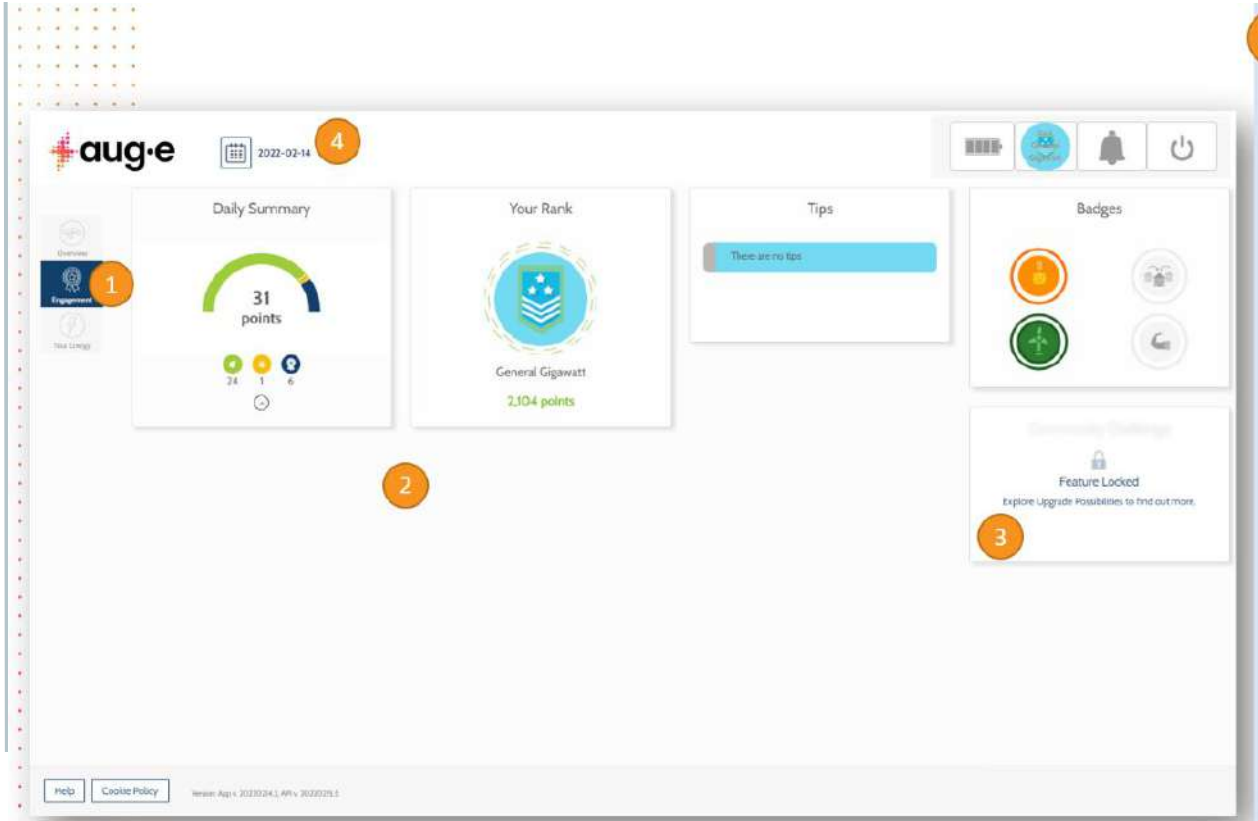
3. Working areas *Technological innovation*



3. Working areas *Technological innovation*



3. Working areas *Technological innovation*



1 Engagement screen

Gamification features and tips

2 Gamification widgets

You can see various widgets that help you stay engaged with the platform. Collect points and badges by following our tips and recommendations. The more sustainable you are, the more points you will have, and thus the higher your rank will be.

3 Other widgets available

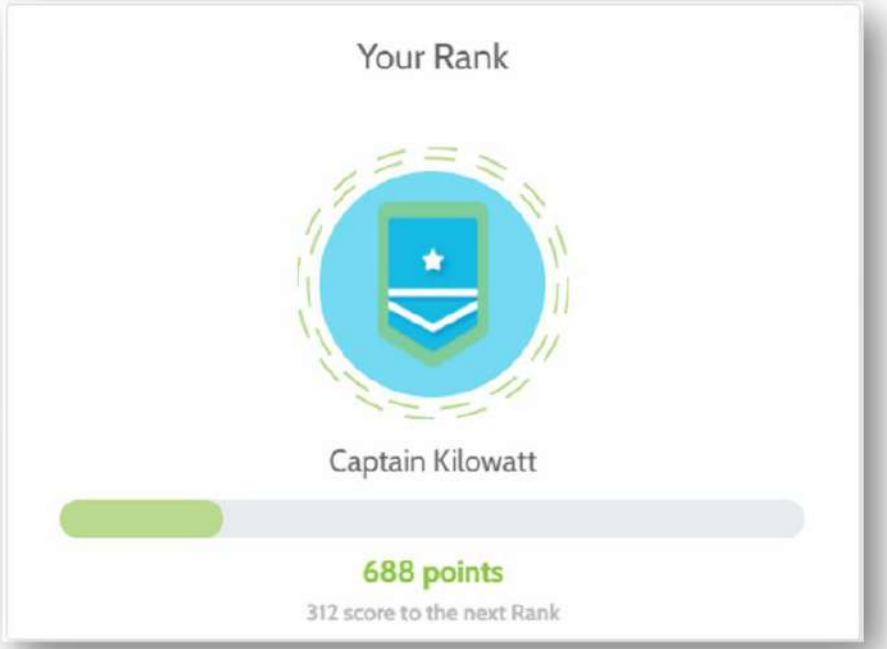
You might see other widgets on your dashboard, or widgets whose functionality is "locked". Contact us via the Help menu to learn when they can become available for you.

4 Period selector

Scores and badges are awarded per day. Therefore, you can only select a single day on this screen. Other time periods are disabled.

3. Working areas *Technological innovation*

Engagement widgets



Your Rank

Objective

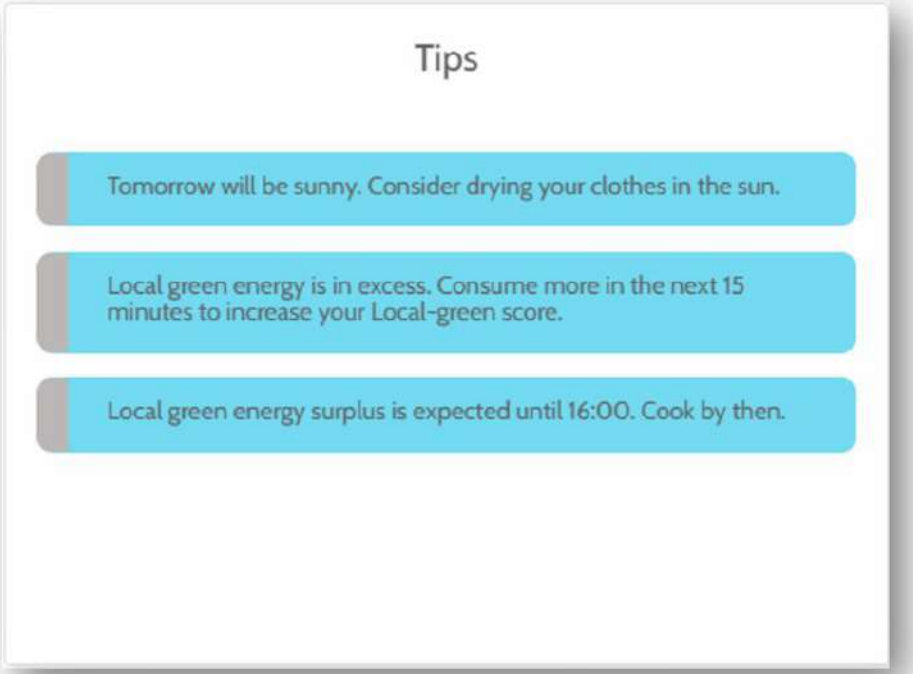
Display your current rank, based on your total score

Data displayed

- *Your rank*
- *Total amount of points*
- *Total amount of points needed for the next rank*

3. Working areas *Technological innovation*

Engagement widgets



Tips

Objective

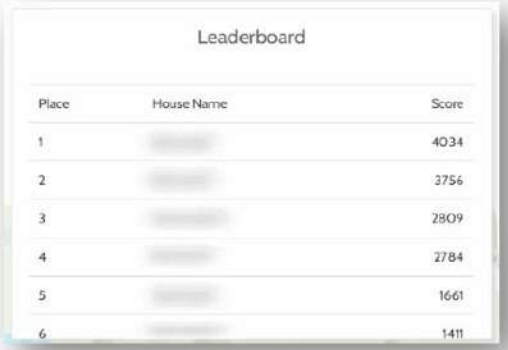
Display tips on how you can contribute to your community sustainability and lower your bill

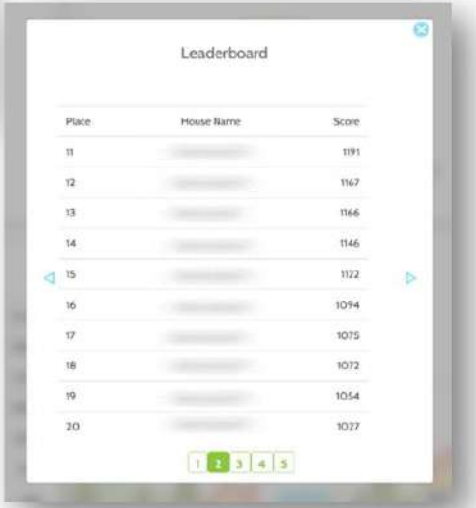
Data displayed

- *Various tips based on the measured data, forecasts and machine learning calculations*

3. Working areas *Technological innovation*

Engagement widgets





Leaderboard

Objective

Display how your total score compares to the total scores of your community members

Data displayed

Leaderboard with following columns:

- *Place – the ones with the highest score are at the top*
- *House name – the name of the building in your community*
- *Score – the total score earned by each building.*

Other Features

- *You can access the full leaderboard by clicking on the leaderboard widget*
- *You can access multiple pages of the leaderboard by clicking on the arrows*

4.Pilot Sites

1. Poland
2. The Netherlands
3. Spain
4. Italy

4.Pilot Sites POLAND

Apartment blocks in Wroclaw

- 19 Building blocks
- 285 Apartments

Key highlights:

- Recruitment is a critical phase, combined with exploratory ways to reveal needs and wants
- Social innovation means needed for technological innovation to work

4.Pilot Sites THE NETHERLANDS

Two residential communities in Woerden and Quatre Bras

Key highlights:

- Challenges of engaging the elderly and technologically illiterate residents
- Time and social ties needed to appropriate and feel empowered with the app

4.Pilot Sites SPAIN

Energy Cooperative in Alginet

- 15-30 buildings

Key highlights:

- Economic factors are key drivers in the Spanish context
- Getting people involved and active takes time to change the culture from passive to active users
- Participatory workshops are great tools!

4.Pilot Sites ITALY

Cagliari Smart Condo

- 1 Residential building
- 8 apartments

Key highlights:

- Social ties between residents are an asset → adopt a technology, understand the need of PV, integrate new behaviors and interests
- Crowdfunding campaign success!

5. Key findings

Driving challenges

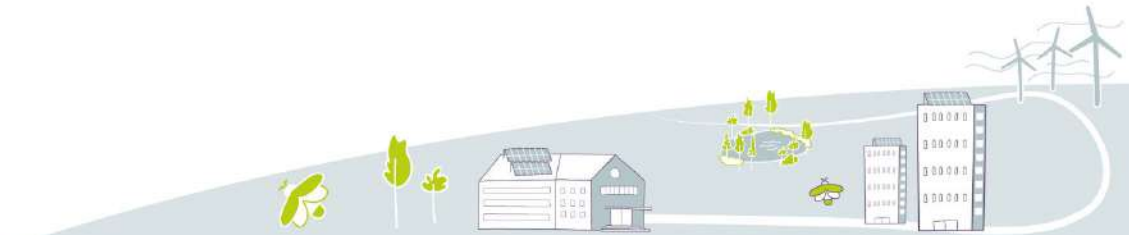
- Sociocultural dimension of the transition
- Bridge the gap between social aspects and technological developments
- Engage the younger, elderly, poor, and technologically or energy illiterate

Ways of mitigating those risks

- Train technological pilot leaders in social methods
- Use SSH methods to reveal practices and behaviors and pave the way towards a new culture

LIGHTNESS

Engaging communities in the future of energy



Contact

www.lightness-project.eu

@lightness_eu

@lightness_eu

Lightness Project

Lightness Project

Lightness Project

Subscribe to our Newsletter!

Thank You

This project has received funding
From European Union's Horizon 2020
Research and innovation programme
Under grant agreement n° 953020

An inclusive & participatory engagement process for developing a DR platform-

insights from Hestia, a H2020 project

Aggeliki Aggeli, Aalborg University

Marta Arniani, Gridability/Futuribile

Hestia A quick introduction

Hestia is a Horizon 2020 project, which is currently developing a technological, social and business solution **to demonstrate the potential of DR services leveraging on social engagement** and user experience effectiveness .

By integrating state-of-the-art and emerging ICT tools to enable **the next generation of Demand Response services for residential communities**

By piloting the HESTIA solution on **three residential demo setups** with different infrastructural, climatic and market contexts (IT, FR and NL)

By developing **efficient business models**, understanding current adoption barriers and defining viable plans for the large-scale replication of the HESTIA solution

Pilot sites

Voorhout, The Netherlands

33 homes involved; large majority of participants are pensioners. Most of them moved into the senior homes because of the characteristics of the homes and surroundings (not because of the SG).

Solar PVs; home batteries; heat pumps; (EV & charging poles; collective battery)

Berchidda, Sardinia, Italy

30 homes involved ; many intergenerational homes, with one or more members staying at home all day. Newly created energy community, with residents not familiar with living with smart technologies.

20 homes with solar PVs & home batteries; smart meters & sensors

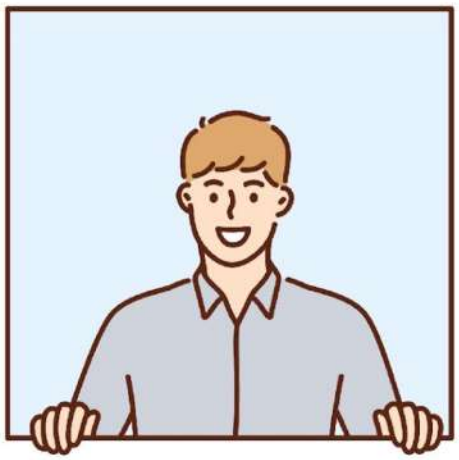
Camille Claudel, France

14* homes involved; an eco-responsible development. Social and student housing are also part of the district. Hestia participants are young families with children and senior citizens. Half of our participants are retirees.

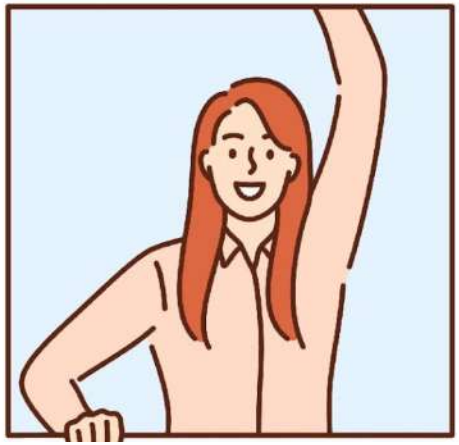
homes without pre-existing smart energy installations

*Recruitment is not yet finalised in this pilot

Some starting points....



Understanding energy demand at home *implies an appreciation of the* ***underlying rhythms and dynamics of everyday life at home***



The ***technical understanding of energy****, developed from building professionals through means such as measuring electricity consumption in buildings,* ***is considerably different from that of consumers, such as householders*** *(Shove 2000).*

The sharing of expertise *and the* ***understanding of the expectations of both users and technical experts*** *is therefore* ***an important consideration*** *in regard to engagement, pointing to a* ***need to consider equally both sides: users and experts.***

Methods & approaches to engagement

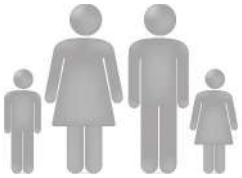
Participatory & inclusive guidelines and methods for engagement

Activities performed:

- **Participatory workshops** in all three pilots
- **Virtual** household **interactions** (interviews & home tours)
- **Face-to-face** household **interactions** (interviews & home tours)
- **Guidelines** (booklet) of the different kinds of user interactions
- **Visual and interactive methods for user-engagement**
- **Design, coordination and analysis of** content and **findings** of workshops and household interactions
- **Design & facilitation of co-creation workshops** for the Hestia **consortium**

We put together some recommendations

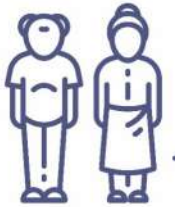
Recommendations on household typologies



Families with children

Adults living together/ no kids

Intergenerational households



Retirees

Recommendations for the design and technical development of the Hestia platform

Design of devices & interfaces

Frequency & content of interaction

Digital literacy & accessibility

Recommendations for community engagement

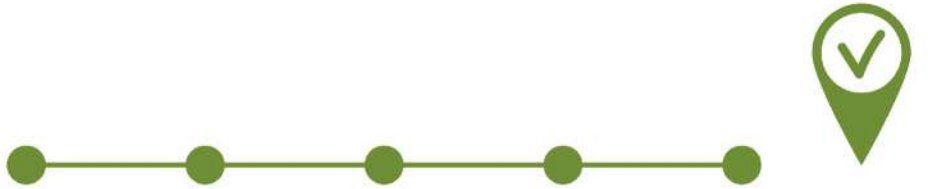
Collective vs individual incentives

Generation & strengthening of energy communities

ns

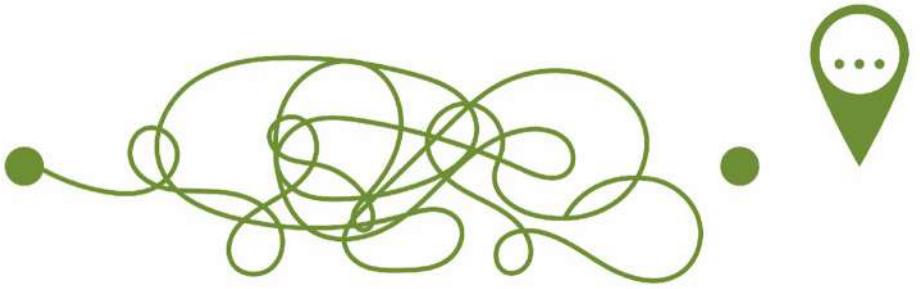
We also observed that…

Smart technology scenario



Lived experience of users

Well, this is more like it…



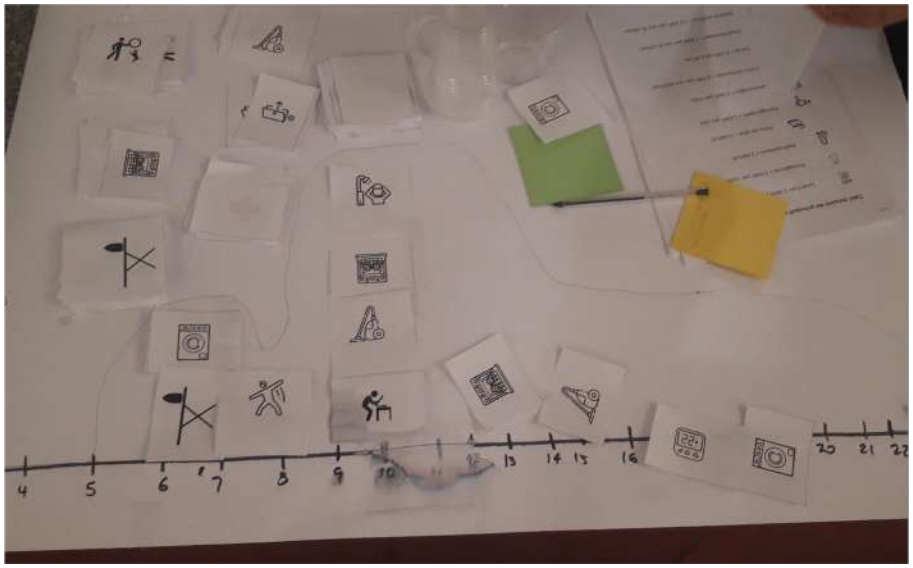
What we have done so far…

Participatory & inclusive guidelines for recruitment & engagement

Through research activities & participatory interactions we:

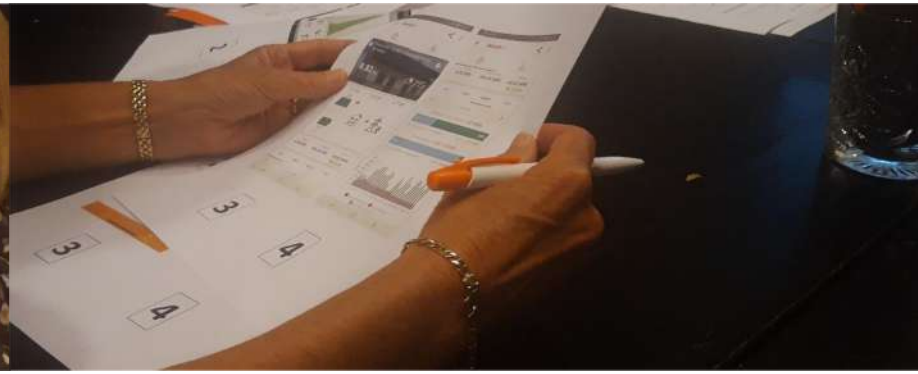
- Have developed an **inclusive and appropriate strategy to engage the diverse range of participants** (paying attention to issues of ***age, gender, digital literacy, socio-cultural background and social norms*** in each pilot community)
- Determine the **level of engagement for pilot users** in the development of the platform
- Contribute to the **acceptance of the** (technological & social) **DR solutions of pilot users**

For example...in Berchidda

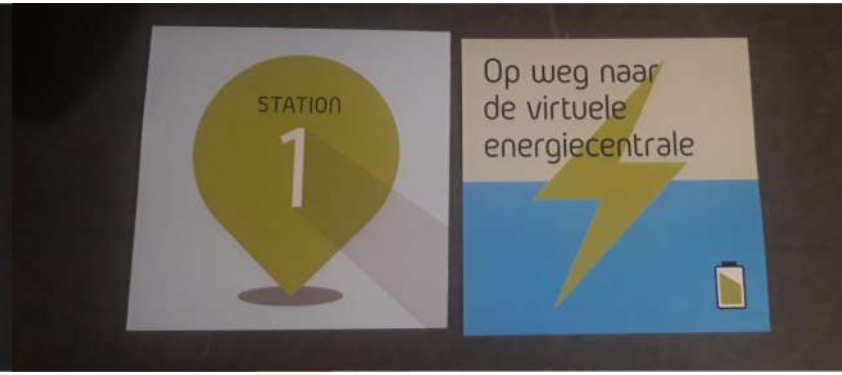


Participants were given a practical group activity which involved the mapping their everyday energy consumption, allocating actions in a 24hr clock and then drawing their energy curve

For example…in Voorhout



Participants were Split in two groups. The first reviewed the technological interfaces (current App used and proposed one by Aug-e).



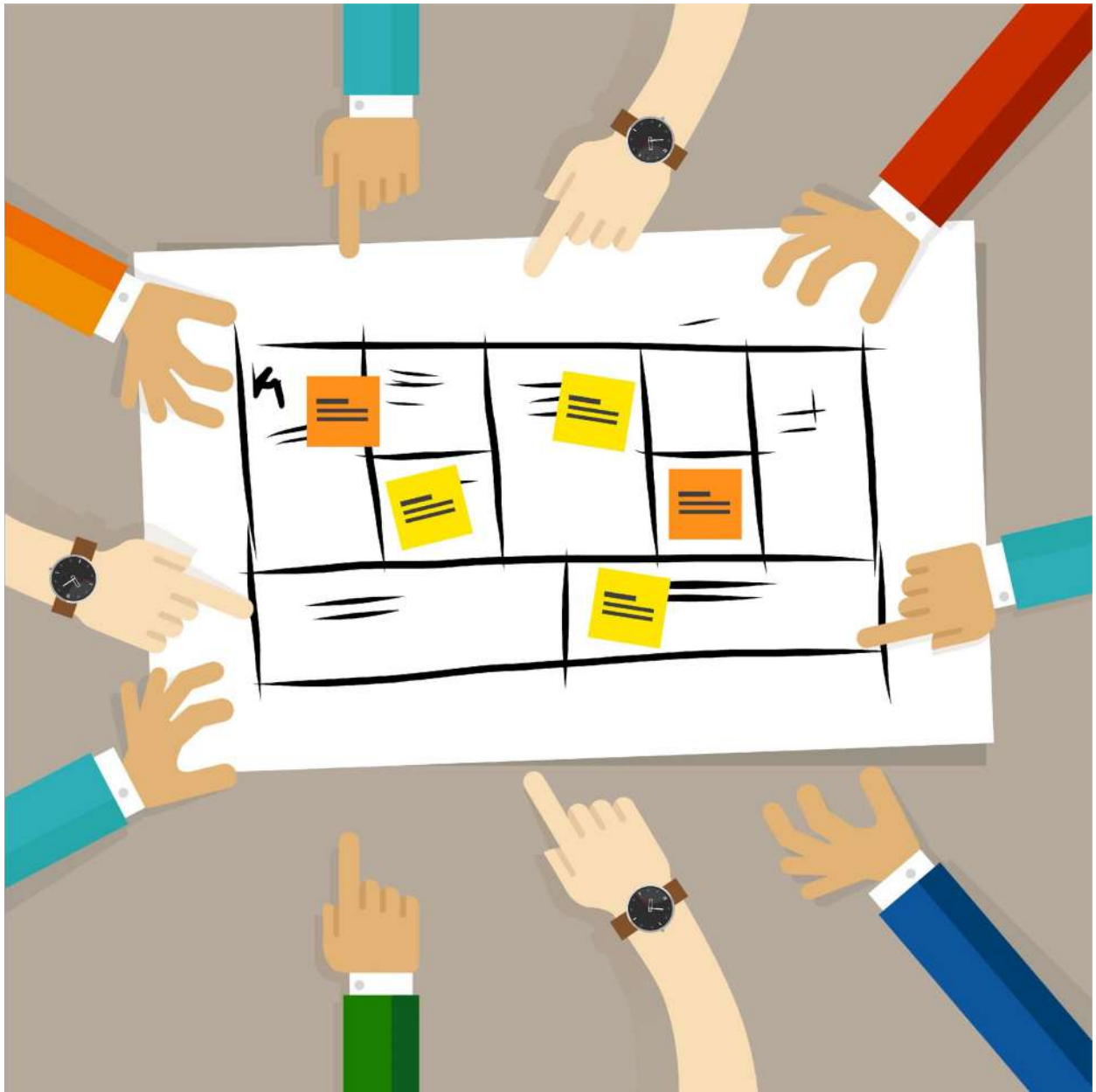
Participants the second group played a game about generating their preferred energy community

For example…in Camille Claudel

Participants played some ‘serious’ games to engage with the concepts of smart energy contracts

And they were also given some challenges for changing everyday practices, such as lowering their thermostats or changing their cooking patterns

Current results from pilots



Gender & DR

Gender as a shaping factor in the flexibility of households

As we investigated everyday practices at home, we came across several issues such as:

The **role that gender plays** in the **process of adopting new 'energy flexible' practices, for example:**

- Pilot specific **gendered household divisions and negotiations** of household labour
- **Gendered expertise** (men tend to control smart systems, women tend to coordinate the household labour overall)
- **Gendered experiences of control & trust**

Gender & DR

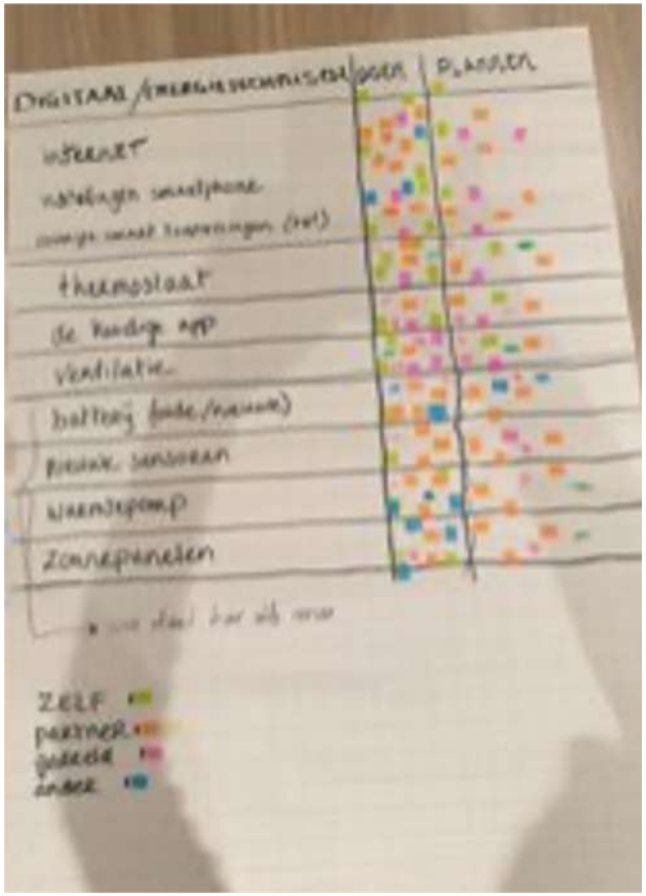
Women focus groups- Berchidda, Sardinia

- Wish to have **more than one person in the household who can control the technologies** and **share the learning**/ insights with the rest of the members
- **Women feel responsible for the success of the smart energy technologies** ('If it not successful then it is our fault')
- **Need for awareness** communications (in the community) **to keep them alert about issues**/action to be taken
- Need for regular **face-to-face communication with project intermediaries**

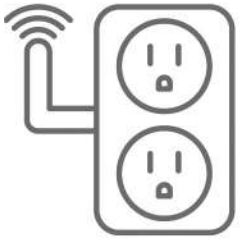
Gender & DR

Women focus groups- Voorhout, The Netherlands

- **Strong interest in learning**, but certain conditions tied to it (repetition; and adapted to their existing knowledge levels – not hijacked by the few techies)
- Wish to get **both digital and paper handbooks**
- A list with all relevant names & numbers (showing that these **women are very aware of the lack of clarity about who is going to be responsible for the well-functioning of the different parts and the EMS of the smart grid on the longer term** – and that this responsibility is not institutionalised)



Key themes & insights from each pilot



	Berchidda	Camille Claudel	Voorhout
Household coordination & gender implications	**Co-ordination required between the digital housekeepers (mostly men) and the everyday housekeepers (mostly women)** to ensure they share/discuss notifications & actions	Need to **consider everyday life rhythms and committments** of users- Some households might need to 'catch up' with notifications	Women in the pilot expressed **concerns about the long-term maintenance** of the smart systems (knowing who/how to call when things don't work**.) Men mostly focused on the short-term** technical issues
Digital skills / literacy	**Digital literacy issues present-** need to understand the starting point of each household and consider appropriate needs & support. **Gendered expertise on digital housekeeping**-need for **support from intermediaries**	Need to **consider how some users are not 'locked out'** if they are not responsive for some time	Need to **get users familiar and confident with the platform** so they can utilise its full potential- needs to be **space for shared learning**
Frequency of interactions	Need to **be careful not to stress users with too many requests** (notifications). Important who get the message (digital or everyday housekeeper)	Important to **allow for freedom in the interactions** with the dashboard	Is there a risk of 'enthusiastic' users to get an avalance of notifications- **what brakes are built into the system?**
Motivation	Need to **consider how to maintain engagement in the long term**	**Maintain motivation during the experiments and in the long term**/ what is interesting to people?	We need to **understand better what is more appropriate for the community**

Technology interfaces' considerations

- **Personalisation**
  - 'One -size'-initiatives do not fit all
  - Personalisation of the interfaces is important & can lead to long-term engagement
  - The interaction with the dashboard should be customisable for households
  - The Hestia platform should be responsive to the material context of households

- **Feedback loop between users & platform**
  - Users need to gain trust that their feedback is incorporated into the system
  - Householders should be able to choose between different forms of feedback and how they would like to receive it.

- **Notifications**
  - Danger of overloading users with notifications-need to find out their preferences
  - Complex, technical jargon should be avoided
  - Using visual information (e.g icons and visualisations) can ease communication
  - Are/can notifications (be) self-deleting?

- **Digital literacy & overall support**
  - Support an inclusive design paying attention to different user profiles
  - Accessibility (and interoperability) of platform really important
  - Design user/age/gender/cultural background appropriate DR solutions
  - Opportunities for shared learning in the community

Emerging themes for consideration

- **Understanding DR** at home implies an **appreciation of the underlying rhythms and dynamics of everyday life (including issues of gender)**
- Important to **keep participants engaged and in continuous communication** with the project
- The **technical understanding** and definition **of energy** consumption **is usually different to that of users**, especially residential ones.
- Important to find **appropriate ways to interpret** the users' (gendered) know-how gained through these interactions into the technological applications for DR
- Important to **set participants' expectations**
- **Appropriate customisation of DR solutions** is required for each pilot site, in order **to consider local social norms (including gender roles & dynamics)** and **everyday life conventions**

Hestia

SUSTAINABLE PLACES 2022
Sep. 6 - Sep. 9, 2022 | Nice, France

Aggeliki & Marta

on behalf of **Hestia**

SUSTAINABLE PLACES 2022

LocalRES

A case study of European small-town Renewable Energy Communities

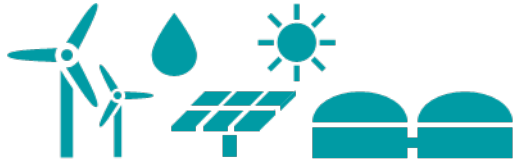
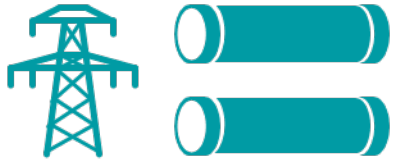
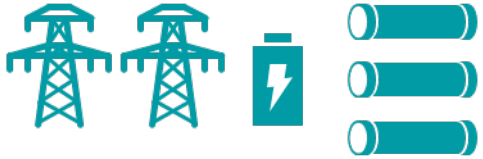
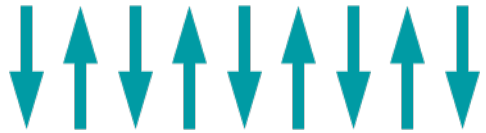
Participatory design of supporting tools as a vehicle to engage and understand local communities and their energy related concerns

Dr Julia Blanke
<julia.blanke@mtu.ie>

Munster Technological University
Ireland

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

A shift of paradigm in the energy sector

Yesterday		Tomorrow
 FEW LARGE POWER PLANTS	**PRODUCTION**	MANY SMALL POWER PRODUCERS 
 CENTRALISED, MOSTLY NATIONAL	**MARKET**	DECENTRALISED, IGNORING BOUNDARIES 
 BASED ON LARGE POWER LINES AND PIPELINES	**TRANSPORTATION**	SMALL-SCALE TRANSMISSION & REGIONAL SUPPLY COMPENSATION 
 TOP TO BOTTOM	**DISTRIBUTION**	BI-DIRECTIONAL 
 PASSIVE, "CONSUMING AND PAYING" ONLY	**CONSUMER**	ACTIVE, PARTICIPATING IN THE SYSTEM (PROSUMER) 

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

A shift of paradigm in the energy sector

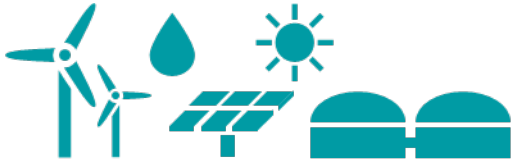
The technologies for this transition is already available at high TRL

So why are we still not there yet?

ACCEPTANCE AND COMMITMENT

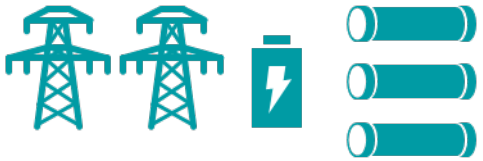
Tomorrow

MANY SMALL POWER PRODUCERS



DECENTRALISED, IGNORING BOUNDARIES

SMALL-SCALE TRANSMISSION & REGIONAL SUPPLY COMPENSATION



BI-DIRECTIONAL

ACTIVE, PARTICIPATING IN THE SYSTEM (PROSUMER)

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Recent policy shift from focus on purely technical solutions towards social innovations

Technical solutions

The Clean Energy Package recently released by the EU aims at a more efficient decarbonisation and a better integration of renewable sources into the energy system. The current energy system is undergoing a change from conventional fossil fuel use towards approaches based on renewable energies and is shifting from a centralised model towards more decentralised concepts.

Social innovations

Within this transition Renewable Energy Communities (REC) are a new focal point aiming to actively involve consumers and citizens from the start of the design phase all the way to the end of the process, where a community is influencing the development of relevant energy products and services, such as for example the management of small power producers of renewable energy.

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Definition of Renewable Energy Community

According to the **EU Renewables Directive** Article 2(16) a Renewable Energy Community has been defined as a legal entity:

1. which, in accordance with the applicable national law, is based on open and **voluntary** participation, is **autonomous**, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity
2. the shareholders or members of which are natural persons, SMEs, or local authorities, including municipalities
3. the primary purpose of which is to provide **environmental, economic**, or **social community benefits** for its shareholders or members or for the local areas where it operates, rather than financial profits

The REC is a vehicle to address some of the social challenges of the energy transition

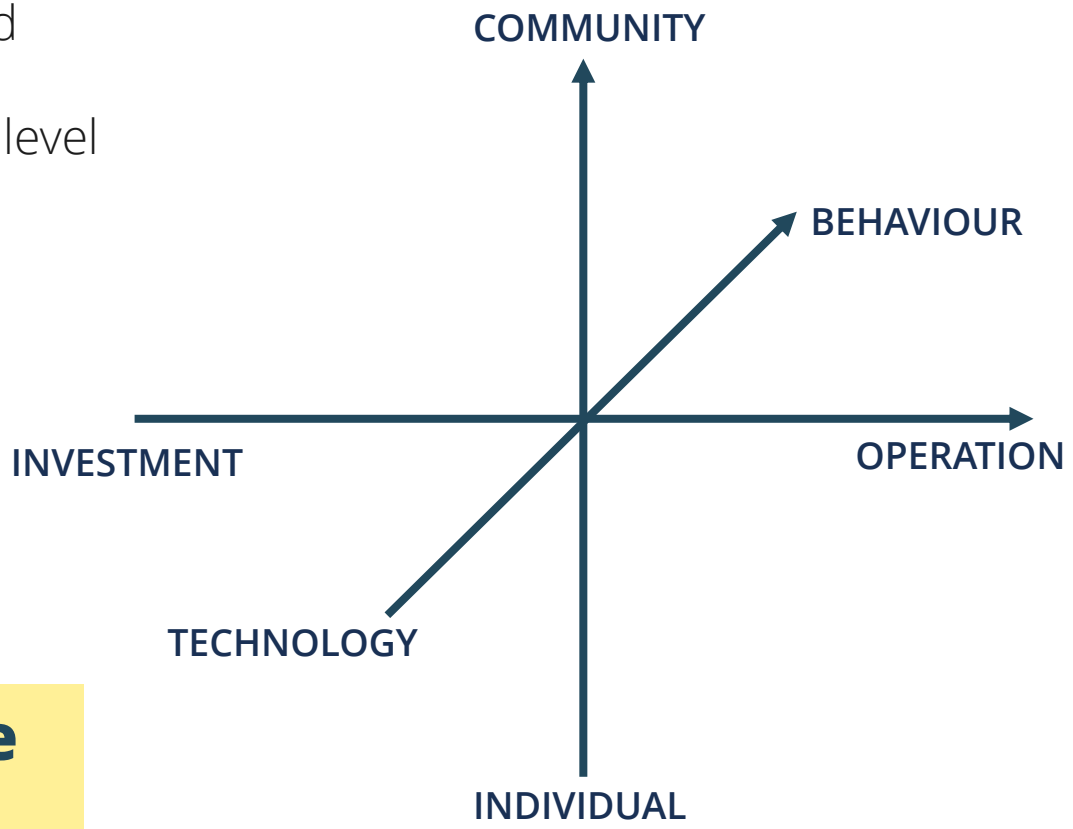
This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Three social dimensions of the energy transition

The energy transition requires people

- to **accept** new technologies in their daily lives and **adapt** their behaviour accordingly
- to **engage** both individually and on a community level
- to **decide** on initial investments and actively **participate** in the operation afterwards

ACCEPTANCE AND COMMITMENT



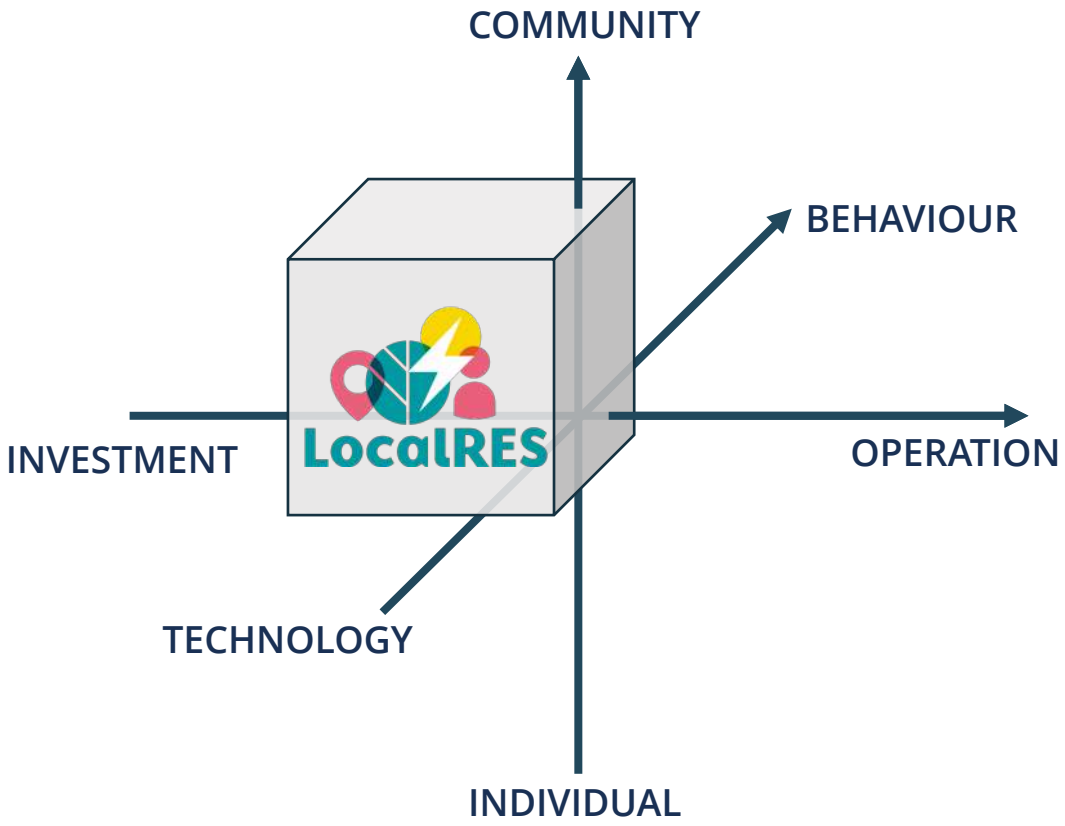
Social innovation along all these axes is necessary!

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Focus of the LocalRES project

The **social innovation** envisaged for the **LocalRES** project is targeted at the following areas:

- Building **local energy communities**
- Acceptance of mainly **technological scenarios**
- Investment in assets to support **community goals**

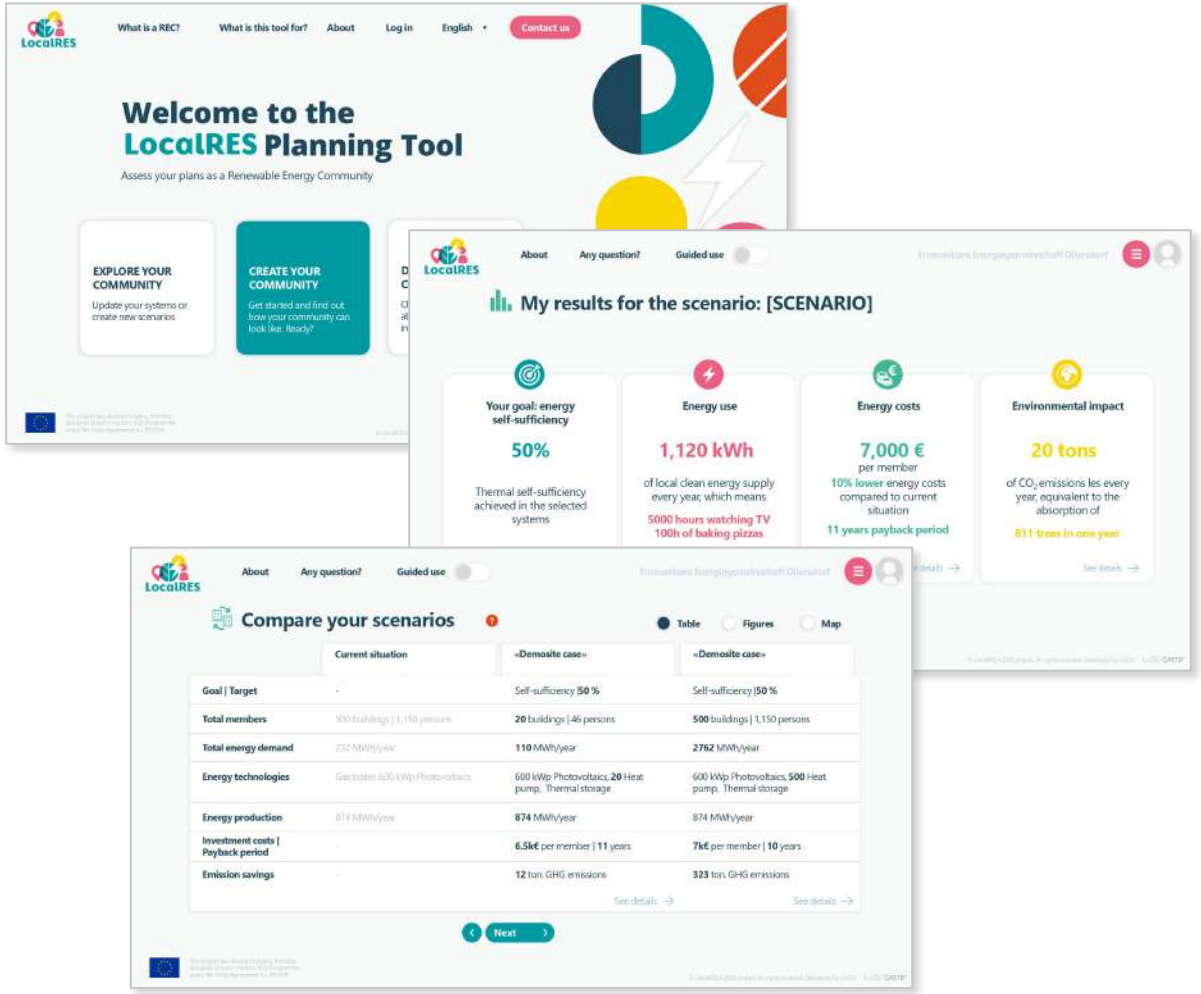


This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Decision-support tools for RECs

LocalRES aims to develop a **supporting tool** to **help renewable energy communities** with:

- **Building and selecting** community goals and scenarios
- **Understanding** technical, economic, environmental, and social implications
- Providing **a platform for communication** and community building



This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Co-design together with the RECs

To foster acceptance and commitment **everything should be co-designed** together with the local communities:

- involving all relevant **stakeholders**
- giving participants a **voice**
- obtaining **insights** for the designers about the local context, social norms and cultural aspects

This activity can also support:

- Identifying and establishing **role models**, "heroes" or "energy champions"
- creating a **sense of ownership** to increase motivation to participate

ACCEPTANCE AND COMMITMENT

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Co-design workshops

Phase I: Representative workshops

- **Participants**
  Energy experts and local community representatives
- **Purpose**
  Identify specific community goals and scenarios

Phase II: Citizen workshops

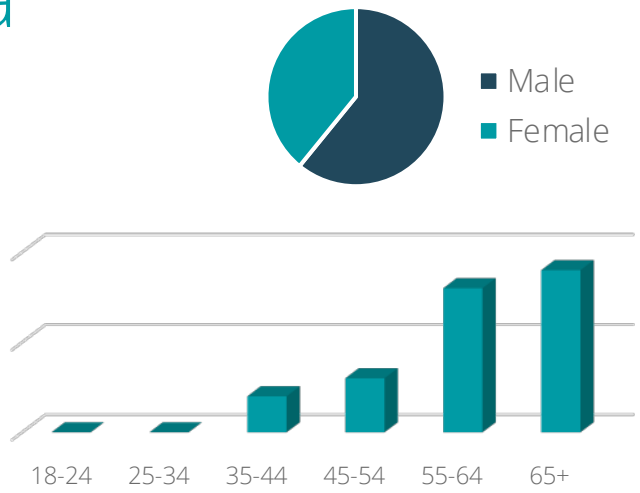
- **Participants**
  Citizens and community representatives
- **Purpose**
  Gather qualitative and quantitative feedback on scenarios, goals, tools, needs and concerns

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Four small-town communities across Europe

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Ollersdorf / Austria



Characterisation of the community:

- Well-established and advanced community
- Already a good understanding of REC

Expectations and next steps:

- Community support tools to facilitate further developments
- Broadening the scope towards topics such as water usage or food waste

Main community goals:

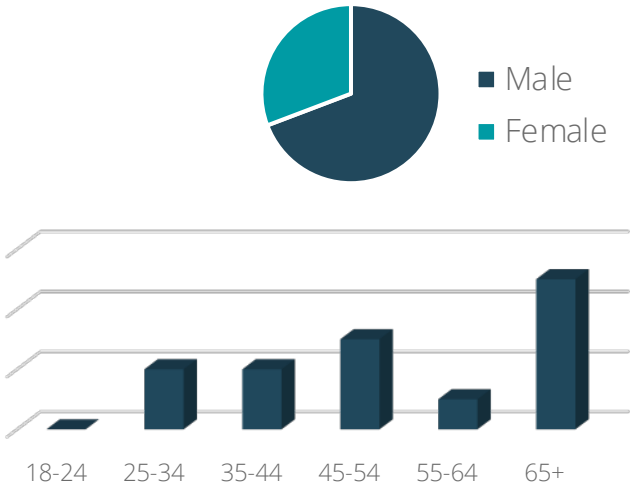
- 100% renewable energy for the Community
- Energy self-sufficiency
- Energy supply security

Specific scenarios of interest:

- More PV installations
- Communal battery storage
- Waste heat recovery

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Berchidda / Italy



Characterisation of the community:

- Focus on financial concerns such as profitability, grants, cost of energy
- Pilot site for 3 EU projects (LocalRES, HESTIA, NEON)

Main community goals:

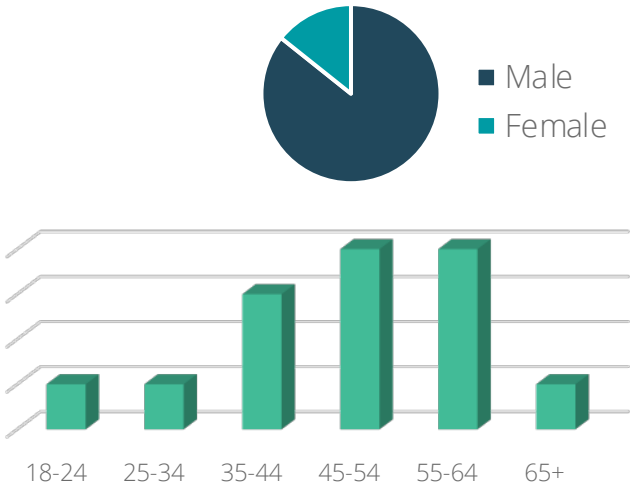
- Save on the cost of energy
- Maximise the return on investment
- Energy self-sufficiency
- Freely choose what equipment to install without jeopardising grid operation

Specific scenarios of interest:

- More PV generation
- Installation of more heat pumps in homes
- Operation of rural micro-grids
- More EV charging points in the town

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Ispaster / Spain



Characterisation of the community:

- Young community, not yet fully established

Expectations and next steps:

- Develop the community and engage more people
- Establish local “heroes” or “energy champions”
- Broaden energy focus towards other socio-economic activities to support local businesses

Main community goals:

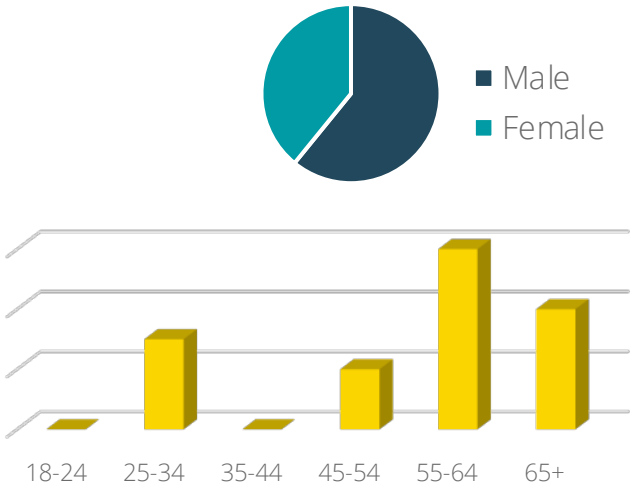
- supply of all public buildings with 100% renewable energy and maximise self-sufficiency
- Reduce dependency on the main grid
- Promote communal energy production in the town

Specific scenarios of interest:

- School and other public building upgrades
- Community owned PVs
- Waste heat recovery

This project has received funding from the European Union’s Horizon 2020 Programme under the Grant Agreement no. 957819

Kökar / Finland



Characterisation of the community:

- Comprehensive interest in the other demo sites and the LocalRES project in general
- Desire to express personal views and ideas
- Some knowledge gaps between participants regarding the energy topics discussed

Expectations and next steps:

- Establishing local “heroes” or “energy champions”

Main community goals:

- Increase renewable asset utilisation
- Achieve energy self-sufficiency on the island
- Increase the reliability of the electricity supply
- Development of EV charging infrastructure

Specific scenarios of interest:

- Comprehensive RES update to the nursing home
- Small-scale district heating system in the town
- Development of EV infrastructure (cars & boats)

This project has received funding from the European Union’s Horizon 2020 Programme under the Grant Agreement no. 957819

Engagement with Renewable Energy Communities

Key findings of the citizen workshops

- Overall **male participants** have been found to be more likely to engage with REC activities, $r(61)=0.31$, $p=0.01$.
- In **Berchidda**, we found that people who would engage in REC activities would prefer to use supporting tools in a **group settings**, $r(11)=0.68$, $p=0.01$.
- In **Ollersdorf**, those who would engage in REC activities **do not think expert use** should be the primary focus of supporting tools, $r(21)=-0.48$, $p=0.02$.

How likely do you think it is in your community that people would engage in common energy related activities?

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Use of supporting tools in RECs

Key findings of the citizen workshops

- Those interested in partaking in the decision-making processes of the community would **find supporting tools helpful**, $r(63)=0.37$, $p<0.01$.
- In **Berchidda** there were strong **privacy concerns** correlated with the **perceived helpfulness** of supporting tools, $r(11)=0.7$, $p<0.01$.
- In **Ispaster** those who were interested in using supporting tools on their own found the presented tool ideas helpful, $r(12)=0.55$, $p=0.04$, while in **Kökar** the outcome was the opposite, $r(13)=-0.56$, $p=0.03$.

Do you think a tool like the one presented earlier would be helpful for the community activities?

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Target audience for REC supporting tools

Key findings of the citizen workshops

- In **Ollersdorf** older participants were less likely to prefer mainly expert use of the tool, $r(20)=-0.48$, $p=0.03$, and at the same time did not want to use the tool on their own, $r(20)=-0.57$, $p<0.01$.

- In **Kökar** those who prefer the tool to be used by experts only also think a mobile phone application would be appropriate, $r(13)=0.54$, $p=0.04$, while in this case a web page interface would not be considered adequate, $r(13)=-0.68$, $p<0.01$.

A planning tool can be designed for different levels of expertise.
Would you prefer the planning tool to be primarily used by
...an expert consultant only?
...during guided collaborative community events?
...by every individual citizen?

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Target platforms for REC supporting tools

Key findings of the citizen workshops

- Participants in **Berchidda** were more interested in a mobile application in comparison to participants in **Ollersdorf**, $t(24.6)=2.34$, $p=0.03$, and **Kökar**, $t(23.93)=2.88$, $p<0.01$, although this preference was negatively correlated with age, $r(11)=-0.72$, $p<0.01$.

- Participants in Ollersdorf were more interested in a web page than those in **Berchidda**, $t(19.69)=2.21$, $p=0.04$, as were participants in **Ispaster**, $t(21.33)=2.28$, $p=0.03$, and **Kökar**, $t(20.66)=2.38$, $p=0.03$.

What platform would you prefer the tool to run on?

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Target platforms for REC supporting tools

Key findings of the citizen workshops

- Older participants did not prefer using a mobile phone application both in Ispaster, $r(12)=-0.57$, $p=0.03$, and in **Berchidda**, $r(11)=-0.72$, $p<0.01$.
- **Non-electronic** (paper-based) means of presentation were preferred by **older** participants, $r(62)=0.27$, $p=0.03$.
- In **Ollersdorf**, female participants preferred using a mobile phone interface, $r(21)=-0.44$, $p=0.04$, while male participants preferred using a webpage, $r(21)=0.57$, $p<0.01$.

What platform would you prefer the tool to run on?

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Selected qualitative feedback from citizens

Technical realisation and potential upgrades of the energy system

- "it allows to do simulation with multiples scenarios that are reliable"
- "Too scientific"
- "If to be used by citizens, it has to be much simpler and more specific"
- "It is always good to have a plan when something is to be done"
- "real data collection"
- "adjusted to the existing reality and is updated correctly"

Financial and economic implications of investments

- "Personal benefits need to be made visible"
- "energy savings"
- "Everybody could calculate the best option for themselves"
- "independence from utility companies"
- "lower the energy cost"
- "Investment costs, savings, amortisation"
- "awareness about the importance of the self-consumption"

Social dimension & communication between community members and other relevant stakeholders

- "Better communication and networking"
- "Coordination & communication"
- "summarise different thoughts from different people"
- "decide who should participate in the project"
- "promote more participation processes in other areas"
- Involving those people who have doubts about the importance of the energy community"

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

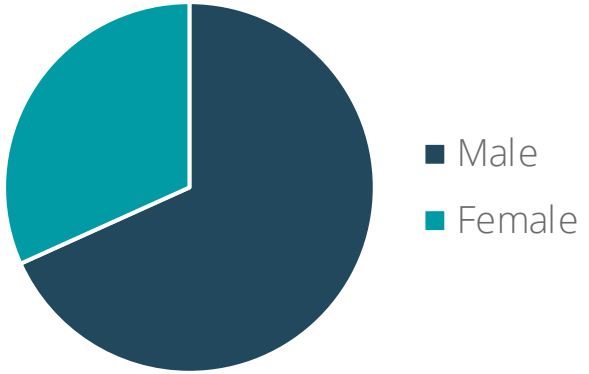
Limitations

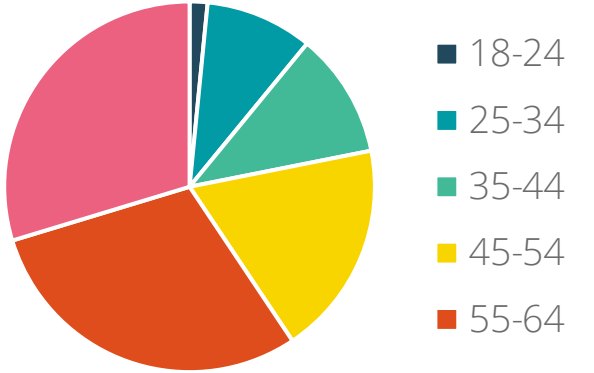
Selection bias:

- Only interested parties participated in the workshops
- Significant overrepresentation of older, male participants
  (78% of participants were older than 45, and more than 30% of participants were older than 65. Only 1/3 of the participants were women)

COVID:

- Disengagement caused by delays of in-person workshops
- Concerns about face-to-face meetings





This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Implications for Renewable Energy Communities

To form and sustain a successful REC people need **support to decide on:**

- the **technical realisation** and potential upgrades of the energy system, i.e., visualising energy generation and consumption on an individual and a community level
- the **financial and economic implications** of investments, i.e., calculating costs and return on investment for the individual and for the community
- the **social dimension and communication** between community members and other relevant stakeholders, i.e., helping with community building and community engagement

Decision have to be made on both **the community and the individual level:**

Tools supporting this activity need to

- adapt to the **specific requirements** and circumstances of each town
- consider the **needs of the individual** end users including their **technical literacy**

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Conclusions

- **Renewable Energy Communities** are a novel approach to address decarbonisation and decentralisation of the energy system
- The focus is not exclusively technical and economic, but a **social and community dimension** must be addressed for the energy transition
- **Co-creation** is a valuable methodology not only to gather information but also **to foster active engagement** within the community
- This **empowers citizens** to make informed decisions on community goals and scenarios and to participate in the design and operation of the local energy system

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Thank you for your attention

Questions

This project has received funding from the European Union's Horizon 2020 Programme under the Grant Agreement no. 957819

Blanca Barrios

CREATORS

CREATORS

SUSTAINABLE PLACES

Creating Community Energy Systems

Blanca Barrios

1. What is CREATORS?

CREATING COMMUNITY ENERGY SYSTEMS

Horizon 2020 Project

Accelerating the integration of Community Energy Systems across Europe

Duration of 3 years
Sept 2020 - Oct 2023

Consortium of 16 partners
from 8 EU countries

2. Objectives of CREATORS

✔ Speed up the integration of energy communities in Europe

✔ Develop applications and services for Energy Communities

✔ Help CES promoters throughout the life of the project

✔ Conceptualize “Community Energy Systems as a service”

✔ Increase the penetration of renewables and flexibility

✔ Empower consumers and prosumers in the energy transition

3. Applications and Services for Community Energy Systems

LIFE CYCLE OF A COMMUNITY ENERGY SYSTEM

Conceptualization → **Planning** → **Implementation** → **Operation**

Simulation and emulation engine

Digital Twins

Business Models and financing protocols

Energy exchange platform

Aim to support local initiators in the deployment of CES.

4. Our Value Proposition

Community Energy Systems **as a Service**

Design

Investment

Operation

Test

Contracting

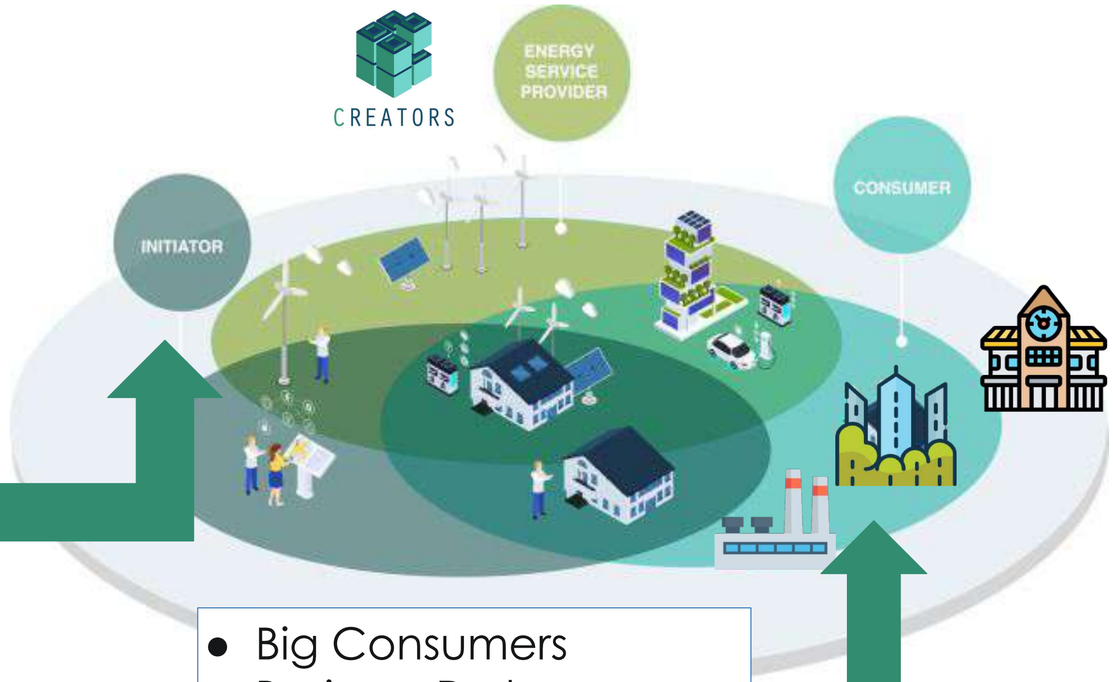
5. Our Strategy to involve people and technology

Engage People

Target

- Local Initiators
- Local service providers

The Model we follow



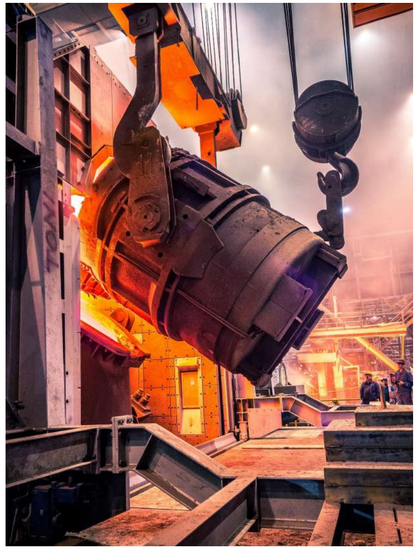
Target

- Big Consumers
- Business Parks
- Apartment Buildings
- Industrial Consumers
- Tertiary Sector
- Public Buildings

6. Tier 1 Pilots

Port of Barcelona, Spain

Industrial Park Belgium



Steel Plant in Slovenia

Municipality in Estonia

6. Tier 2 Pilots

BTC Mall in Slovenia

Office Building in Netherlands

Industrial Park in Spain

Guadaloupe Island, France

Waste disposal Facility, Bulgaria

Voorhout & Tholen, Residential + SME area, Netherlands

7. Examples of engagement: Find the Key person

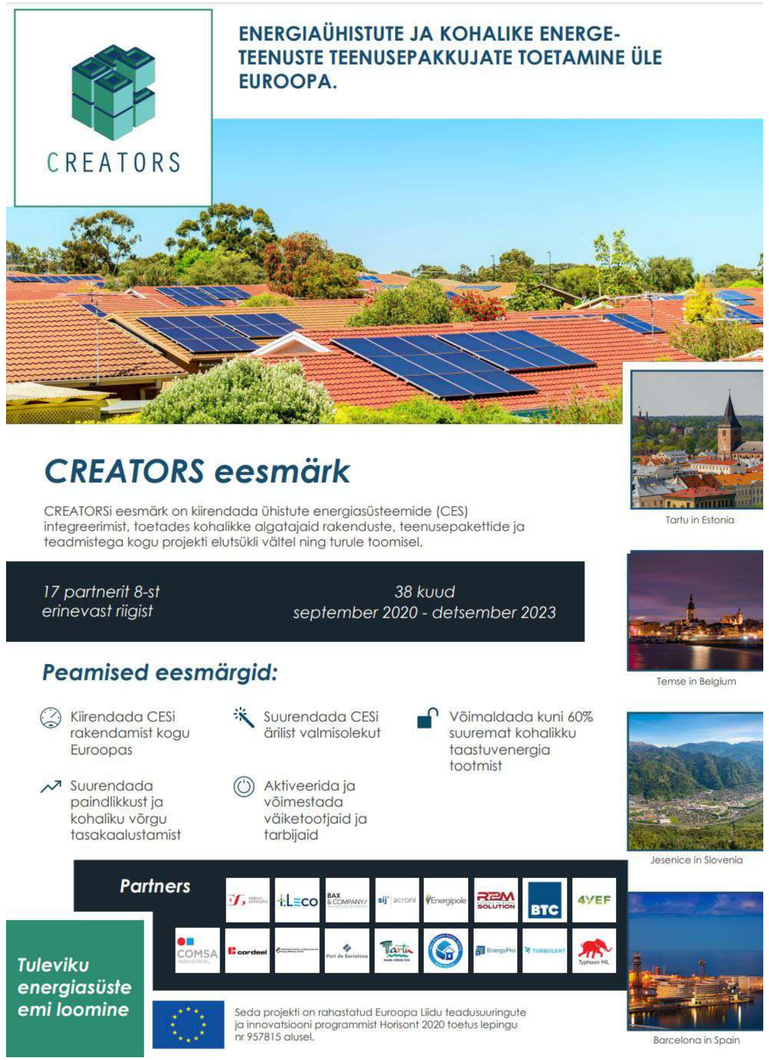
Port of Barcelona →  Legal Entity Port of Barcelona - link the buildings

BTC Mall in Slovenia →  Mall Manager (BTC company)

Industrial Park Belgium →  Construction Company involved its own buildings - both industrial and residential

Industrial Park in Spain →  Promueve Burgos - Public Company that belongs to the municipality of burgos
Link with companies at the industrial park

8. Workshops with site owners and final users



- Simulation Results
- Financial estimations
- Knowledge Sharing

9. How do we engage initiators?

Direct Approach

Indirect Approach

CES quick online application tool

CREATORS

Technical analysis

Governance analysis

Financing analysis

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957815.

10. Highlights

1. **CREATORS targets big consumers thus we have to adjust our engagement strategy**

2. **We target the KEY PERSON to start the Energy Community**

3. **KEY PERSON is the link with the end user, and knows their needs**

Thank you

www.creators4you.energy

@creators4you

@creators4you

This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement n° 957815

NEWSLETTER

CREATORS: Creating Community Energy Systems

This document and all information contained here is in the sole property of the CREATORS Consortium or the company referred to in the slides. It may contain information subject to Intellectual Property Rights. No Intellectual Property Rights are granted by the delivery of this document or the disclosure of its content.
Reproduction or circulation of this document to any third party is prohibited without the written consent of the author(s).
The statements made here in do not necessarily have the consent or agreement of the CREATORS Consortium nor it represent the views of the European Commission and represent the opinion and findings of the author(s).
The dissemination and confidentiality rules as defined in the Consortium agreement apply to this document.
All rights reserved.