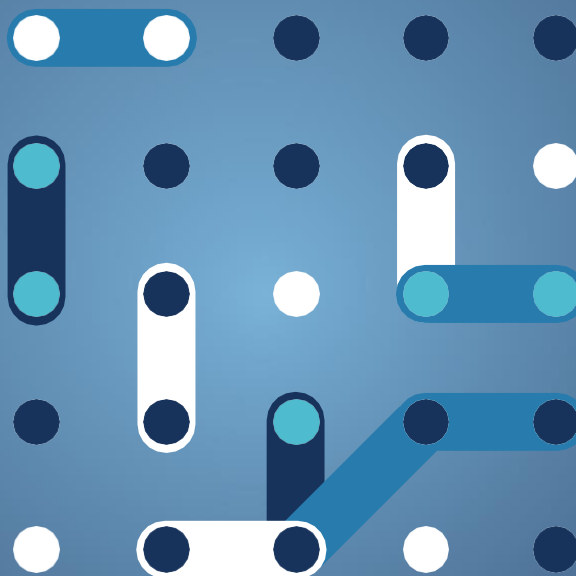




# bridge

Exploration of citizen engagement methodologies in European R&I projects

Consumer and Citizen Engagement Working Group





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Consumer & Citizen Engagement Working Group

May 2022



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# Executive Summary

The Consumer and Citizen Engagement Working Group (CCE WG), previously Consumer Engagement, is part of the BRIDGE initiative and aims at creating a structured cross-cutting understanding of the role and methodologies of engagement in European R&I projects. In 2020, during the BRIDGE General Assembly (GA), the CCE WG decided, based on European R&I projects' experience, to focus on 4 main objectives:

- Build methodologies to engage consumers in the energy sector
- Build methodologies to support the constructions of organisations to involve consumers in the energy system
- Build objective assessment criteria to consumer engagement
- Build models for collective action of citizens

In order to tackle this wide scope, the CCE WG developed a two-year Work Plan (2020-2022) and divided the work into 5 subgroups, each tackling a piece of this goal:

1. Socioeconomic Drivers of Engagement
2. Group Building
3. Governance and Organisational Models
4. Assessment (Indicators) of Engagement
5. Smart Tools for Engagement

During 2020, these subgroups explored their respective topics and identified gaps in knowledge and needs of European R&I projects regarding engagement. The conclusions and recommendations of this work were included in the CCE WG 2021 report. Following this work, during 2021, until the 2022 GA, the CCE WG focused on addressing the gaps identified in the report merging two of the subgroups, as follows:





Topic	Sub-Group Leader	Description
 Socio economic drivers and indicators of engagement	Johanna Irene Höffken (MUSEGRID)	To collect evidence around user profiles and drivers triggering consumer engagement. To collect indicators to assess this engagement.
 Strategies of engagement	Panagiotis Ktenidis (TILOS - BD4NRG)	To collect strategies and methods used by projects to engage consumers and citizens, through collective action schemes.
 Governance models for collective action	Josh Roberts (COMPILE)	To collect models to create citizen-led organisations and favour the market integration of such organisations.
 Smart tools for engagement	Louise Birch Riley (iFLEX) Evangelos Rikos (GIFT)	To collect an exhaustive list of tools and technologies supporting consumer participation and the ways those tools are supporting the involvement of consumers.

Table 1. Consumer and Citizen Engagement Working Group Subgroups

Throughout the whole Work Plan period (2020-2022), subgroups got activated according to the interest and will of BRIDGE project members participating in the WG CCE. The WG Chair and Sub-group leaders have taken on the heavy responsibility to guide and facilitate those sub-groups, establishing the WG CCE leadership group.

## Conclusions of the sub-groups



### Drivers and indicators of engagement





The work of the subgroup on drivers and indicators of engagement has three different focal points, which also inform the presentation of the recommendations below:

### **1) Types of user groups and their drivers to engagement**

Explore the reasons for the relatively low involvement of public sector entities in projects, despite strong interest from projects. The case of the public sector is especially promising, as this sector has a high potential for introducing innovative solutions in a systemic way. When designing user-specific, and context-sensitive engagement strategies, consider aspects such as (a) user awareness and interest about energy issues, (b) familiarity and skills needed for engaging with and operating technologies, and (c) trust in the project.

### **2) Engagement strategies per user group**

Generally, engagement strategies used in BRIDGE projects are tailored to specific user groups. However, there is a need and opportunity to diversify the kind of strategies to be employed, going beyond the (conventional) formats such as interviews, questionnaires, or workshops. To foster such diversification, ensure space for “engagement-innovation” within projects. When aiming to foster and support diverse and meaningful engagement formats in projects “space for engagement impact” has to be created. This needs the acknowledgment that engagement can a) alter the (engagement) course of the projects and b) asks for flexibility in project structure, plan and reporting of the projects.

### **3) Indicators for engagement over time**

Ask for a concept on how projects want to secure engagement over time and on how they want to measure it, but allow enough flexibility so that projects can adapt the concepts according to the needs of stakeholders/users. Ask for clear engagement strategies and concepts distinguishing between 1) indicators of what influences engagement 2) indicators of activities of engagement and 3) indicators of results of engagement to be more specific.

Be aware that qualitative indicators (like effect of an engagement on participants) in some cases might be more beneficial in mapping engagement over time than quantitative indicators (like number of participants in a workshop). So, besides “hard” quantitative KPIs aiming more strongly on capturing technical aspects of the projects, also ask for softer qualitative KPIs aiming at evaluating participants engagement (quality and depths of engagement, quality of user feedback, etc.)



### **Strategies of engagement**

In the last years, a considerable improvement on social innovation integration within R&I projects has been noticed. But despite the progress made and considering the data analysed, it has been concluded that there are still several barriers that make the design, implementation, and maintenance of a strategy of engagement difficult:

There is a need for more structure around strategies of engagement from BRIDGE projects. These strategies of engagement or at least a high-level outline of the plan should be planned in advance for R&I projects to be able to design and implement the plan effectively.

There is a lack of a common framework or categorisation of strategies or methodologies of engagement that are suitable to engage with different user types or at different stages of the project. Having a set of flexible and adaptative standards of what are the expectations for a successful strategy of engagement means would help BRIDGE projects to design and implement these strategies at early stages of the project.



It is important to realise that many times consumers and/or citizens lack technical knowledge that might be essential to be able to provide useful input to projects. Integrating SSH expertise in the project to liaise between technical experts and consumers or citizens to successfully implement the strategies of engagement designed by BRIDGE projects might be useful. Local Ambassadors have also proven to be key in the process of engaging with consumers and citizens. In addition, often, it is difficult to recruit and maintain end users engaged during project activities. Increasing consumers' "sense of belonging" and finding ways to keep them engaged throughout the different project development stages would be useful.

Key performance indicators (KPI) often focus on quantitative indicators that don't provide useful information in terms of success and quality of experience or impact of the engagement strategies implemented. A clearer definition of which indicators are to be measured when evaluating the effectiveness of a strategy of engagement should be explored.

Complicated administrative processes and lack of consideration regarding end user feedback have also been observed when it comes to implementing engagement strategies by BRIDGE projects. If a project is implementing a strategy of engagement, this should be taken as critical and not only as a compliance activity/action. All consortium members and partners should be aware of the strategy's objectives and framework, and feedback and input obtained should be integrated in the project whenever possible or explain to participants the reasons for not being able to consider certain ideas or contributions. Appropriate budget allocation for engagement activities is essential to design and implement an effective strategy of engagement.



## Governance and Organisational models

There is a need to ensure democratic ownership, control, and decision-making to facilitate trust in the concept of energy communities.

There is a need to acknowledge and address the tension that can exist between ensuring renewable and citizen energy communities are open and democratic ownership and participation, and inclusion of more professionalised members whose motivation for participation is more about pursuing a return on investment. There is a need to explore different mechanisms within energy communities to ensure democratic decision making while encouraging participation from commercial market actors.

More work is needed on how to enable access to markets by energy communities so that system operators are able to leverage local flexibility beyond low the voltage grid. In particular, there is a need to explore how energy communities can interact with DSOs and TSOs, how network planning can facilitate communication and transparency, and administrative and technical rules and procedures for accessing different markets for flexibility.

Clear legal and regulatory frameworks for energy communities at national level still need to be completed in order for them to become a reality. In particular, national frameworks should address:

- More clearly defining concepts of energy communities, which focus more on organisational aspects of bringing citizens and consumers together in collective initiatives, from technical activities such as collective self-consumption and energy sharing;
- Reducing administrative burdens for establishing an energy community and for getting projects registered and approved;
- Providing dedicated technical and administrative assistance to energy communities to alleviate administrative burdens;
- Adapting national regulations to incentivise collective (not just individual) initiatives around local production as well as balancing and provision of flexibility by energy communities; and



- Providing a univocal definition of the various actors within the energy communities, also clarifying the specific role and responsibilities.



## Smart Tools

In the design of Smart Tools for and by consumer-users, projects are very much directed towards their users in the development of the technology solution, acknowledging that success depends on how well the tool matches the targeted user's needs and values. However, when, how and to what extent the user should be involved to accomplish this goal differs according to type of call, project, and tool. Additionally, the terms 'user-centric' and 'co-creation' carry many meanings, reflecting various design and research approaches, methods, and levels of user engagement.

A few, user-centric approaches involve the consumer-user(s) to a very high degree in all design stages of the Smart Tool (research, development, and testing/evaluation). They start with empathising with the user needs and regard the user to be a co-creator of the tool. Such human-centric approaches to innovation require a substantial amount of coordination, skill, time, and disruption readiness from project partners due to the iterative nature and since the tool is likely to undergo several transformations during the process.

When it comes to user and incentive diversity in the involvement of consumers, the need for diversity is acknowledged by projects in the design of technology solutions, both through the identification of several consumer types that must be targeted as well as through various incentives which reflect an understanding of the different motivations, values and needs that a user can have in the interaction with the Smart Tool. In some projects, the Smart Tool is an educational and training tool seeking to include people in energy-related programmes who are typically underrepresented.

Some projects take a step further, ensuring a wide representation of consumer-users in the actual recruitment and engagement activities to gain greater acceptance, usage, and adoption.

With the increasing emphasis on a people- citizen- and user-centred approach in projects comes a necessity to further open up for design-driven processes. In the case of developing Smart Tools with and for consumers, this means that, where relevant, proposals and projects should allow (and be allowed) some unfinishedness, uncertainty and elasticity in the definition and development of the technology concepts, enabling the user engagement to inform (and possibly transform) the design throughout the entire design process. This type of innovation process should not override but connect with the more familiar business- and technology-driven innovation in projects.

In the cases where the consumer, energy community or any kind of user are heavily involved in all design stages of the tool, becoming co-developers and -creators, the aspect of ownership should be considered.

## Recommendations

Throughout the work performed during the year 2021-2022 of the Working Group, we came to a number of adaptations that could be taken onboard to increase access of consumers and citizens to research and innovation projects. These recommendations are based on the conclusions of the study carried out during the year 2021 and subsequent interviews with BRIDGE projects:

**Involve more public sector actors in European Research and Innovation projects:** through the study, we realised that public sector actors and local authorities are underrepresented in the targets and participations of projects. This lack of participation from public authorities, and specifically local authorities is mostly due to the complex rules related to the interfacing of those actors with traditional research actors. Local authorities are crucial to



involve in research and innovation projects as they are the first trusted facilitator for the participation of private consumers.

**Define clearly key concepts and expectations for success:** the lack of a common language and definitions for engagement and collective actions schemes for consumers was apparent in the study. Several projects were using similar concepts with different understanding of their meaning, or the implications. This is also a lack of common understanding on “what success looks like” from a community engagement perspective. The usage of the concept “engagement” lacks clarity and clear indicators that would allow for projects to differentiate their actions and therefore manage expectations.

**Consider a wide variety of drivers for engagement:** most of the projects failed to consider a wide variety of drivers when building and carrying out their engagement methodology. This pushes projects to attach themselves to the wrong incentives and often fail to provide meaningful impact on the ground. The extension of research around indicators and drivers of engagement is key for the qualitative integration of community-based initiatives and organisations. Social science and humanities research has a crucial role to play in this field to support the understanding and uptake of technical approaches of smart grid projects.

**Consider a design-driven approach:** many projects lack the flexibility needed to fully engage with consumers and citizens. This is partly due to the lack of willingness to involve users, and partly due to the rigid process to be followed by European projects. For innovation in consumer spaces to flourish, the proposal and assessment process of European projects needs to be restructured to allow for projects to better deal with uncertainty and changes in focus. Having consumers embedded into the innovative process and promoting equal partnerships with professional partners from design phases to ownership, will be key for the market access of the innovative components produced by smart grid projects.

**Manage tensions between professional and non-professional stakeholders in projects:** projects are carried out by professionals of the energy sector, but there is a need to consider collaboration with non-professional actors (NGOs, neighbourhood collectives, etc..) to engage consumers. The ways of integrating these specific actors in research process is key to create successful engagement. But also, the sharing in the formal ownership of final results of the project with participants, is crucial and should be promoted by the managing authority.



# 1. Introduction

The BRIDGE Consumer and Citizen Engagement Working Group (WG4, CCE WG) was established originally within the BRIDGE initiative with the following objectives:

- Segmenting, analysis of cultural, geographical and social dimensions,
- Value systems - Understanding Consumers
- Drivers for Engagement
- Effectiveness of Engagement Activities
- Identification of what triggers behavioural changes (e.g., via incentives)
- The Regulatory Innovation to Empower Consumers

In 2018/2019, these objectives evolved to encompass the protean nature of the collective action schemes, changing consumer relationships in the decentralised energy system. They grew to respond to the policy push of the European Commission toward an empowerment of consumer and ownership of citizens in the energy sector.

Therefore, the tasks of the WG4 were extended by the expansion of the role of consumer empowerment and, the role of R&I projects in understanding, supporting, and structuring this role in the market. In February 2020, REScoop.eu – representing the COMPILER project – took the Chair of the CCE WG in order to support its members to collectively deliver a framework of analysis and recommendations toward promoting consumer and citizen engagement.

## 1.1 From Consumers to Citizens

In 2020/2021, the working group has taken a new focus, looking to support European R&I projects by better understanding engagement through collective action. The group focused on understanding, strategising, and organising collective actions of private consumers. The working group has focused itself on getting “consumers” to “citizens”, meaning active members of a collective action scheme.

The word “citizen” here refers to the ownership capability that is provided by empowering consumers to take collective action, and therefore taking a broader role in the energy market. They are not therefore only “consumers” or “customers”, but rather “citizens” carrying rights and responsibilities linked to the governance of the energy system. The vision of the WG CCE is to move users from a “consumer” role to becoming energy citizens – contributing and taking ownership of the energy system. This role change is at the heart of the change in paradigm for R&I projects proposed by the Working Group.



## 2. Key Objectives and Actions

The role of the Consumer and Citizen Engagement Working Group (CCE WG) is to develop a framework to guide R&I projects towards better understanding, triggering, and leveraging the action of consumers and citizens in the energy market. This “engagement” is characterised by the transformation of the role of consumers into prosumers, communities, and other active forms of participation in the energy sector and energy activities. Therefore, it is crucial to understand how to trigger and support this engagement throughout R&I projects and in the energy market in general.

The engagement is materialised by engagement markers which are actions that can be taken by a consumer or not. The goal of engagement strategies and methods should be to reinforce the creation of these groups, support their interfacing with the research consortium, and finally measuring the efficacy of their impact into the energy sector. This process is called community building: “community” refers to consumer groups, while “building” refers to structuring their actions. The goal of the CCE WG should be to create a complete method of community building. This method should include several levels of action and assessment tools to measure and support the actions of these citizens collectives in the market.

Therefore, the CCE WG ’ goal is to mobilise as many projects as possible to work on all aspects of community building and consumer and citizen individuals ’ engagement. The scope of this work includes private consumers, consumer groups and large consumers transforming their role to act in the energy market. In order to limit the scope of the CCE WG, it is proposed to target consumers acting at the “local” level, who are connected to the medium or low voltage grid. The reason for this limitation is that most market access barriers are related to this type of consumer, not large consumers directly accessing the high voltage grid. However, when considering these “local” consumers, it is important to cover a broad range of actors: from private consumers to SMEs and municipalities (as described in the definition of Citizen Energy Communities). This also allows the CCE WG to focus its work on the transformation of the role of the consumer in a decentralised energy system.



### 3. Investigation Sub-Groups

The work of the Consumer and Citizen Engagement Working Group (CCE WG) was divided in five subgroups, each tackling a piece of the framework as described in the previous section, resulting in the following subgroups (2020):

1. Socioeconomic Drivers of Engagement
2. Group Building
3. Governance and Organisational Models
4. Assessment (Indicators) of Engagement
5. Smart Tools for Engagement

During 2020, these subgroups explored their respective topics and identified gaps in knowledge and needs of European R&I projects regarding engagement. The conclusions and recommendations of this work were included in the CCE WG 2021 report. Following this work, during 2021, until the 2022 GA, the CCE WG focused on addressing the gaps identified in the report merging two of the subgroups.

The CCE WG sub-groups are voluntary only, and each group has a facilitator that will be the main contact for the group, named subgroup leader. Each sub-group investigates a piece of the framework of consumer and citizen engagement. Here are the topics that were investigated by a sub-group:





Topic	Sub-Group Leader	Description
 Drivers and indicators of engagement	Johanna Irene Höffken (MUSEGRID)	To collect evidence around user profiles and drivers triggering consumer engagement. To collect indicators to assess this engagement.
 Strategies of engagement	Panagiotis Ktenidis (TILOS - BD4NRG)	To collect strategies and methods used by projects to engage consumers and citizens, through collective action schemes.
 Governance models for collective action	Josh Roberts (COMPILE)	To collect models to create citizen-led organisations and favour the market integration of such organisations.
 Smart tools	Louise Birch Riley (iFLEX) Evangelos Rikos (GIFT)	To explore the engagement of consumer-users in the design of Smart Tools, looking at user-centric approaches and methods, as well as to investigate the incentive structures used by projects to motivate use of the Smart Tool and facilitate certain behaviour and decision-making. To understand how the aspect of diversity is included in the approach to and engagement of consumer-users. To collect an exhaustive list of tools and technologies supporting consumer participation and the ways those tools are supporting the involvement of consumers.

Table 2. Subgroup Leaders and Objectives

As mentioned, each subgroup represents a piece of the R&I project experience in building consumer and citizen engagement. Each of these groups are investigating a stage of the engagement strategy of R&I project:



Stage I – A strategic view of engagement – Projects are looking to build a broad strategy to interact with consumers either to get feedback, experiences or support for their innovative services and tools. In order to understand key factors and drivers engaging consumers and turning them into citizens, projects need to understand the drivers of engagement. Finally, in order to track their progress through time, projects also need to have the right performance indicators.



Stage II – Build a consumer group – Projects usually have defined pilots but no real consumer interactions. It is part of the task of the project to map its stakeholders, including consumers and citizens that might influence or be impacted by the project, to design and implement the best suited engagement strategy to embed all perspectives into the project innovation process and maintain this engagement throughout the project and beyond.



Stage III – Structure and organise – Projects are looking to structure a group of citizens in order to facilitate the collaboration and “professionalise” the interaction. The main challenge is to create a governance model which preserves the citizen-led nature of the initiative, while formalising the interaction channels.



Stage V – Projects are looking for tools to accelerate, promote and sustain the interactions and mobilisation of consumer and citizen groups.





## 4. Methodology of Work

In order to gather information from the BRIDGE projects, the Consumer and Citizen Engagement Working Group (CCE WG) decided to send out a questionnaire covering each of the research areas of the 4 sub-groups of the CCE WG. The goal of sending out a consolidated questionnaire was to uncover basic statistical information while avoiding to overload BRIDGE projects. The questionnaire allowed the CCE WG to drill down onto specific aspects of each sub-groups' work.

The areas of research were qualified as follows by each sub-group leader:





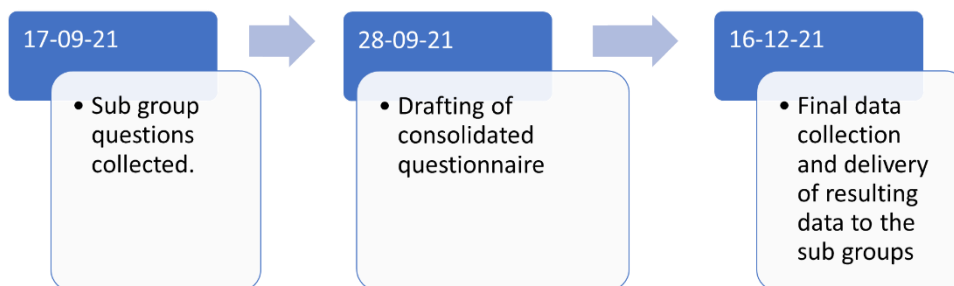
Sub-group	Areas of research
 Drivers and indicators of engagement	The questions focused on the three clusters of the sub-group – (i) types of users targeted by the project, (ii) strategies used by projects to engage users, and (iii) indicators used by projects to gauge the impact of their engagement strategies.
 Strategies of engagement	The questions focus on the technics and methods for engaging users that had been developed by the projects. The section focused on methods to trigger collective actions.
 Governance models for collective action	The questions focused on collective actions and specifically on energy communities. The goal was to understand the ways in which projects support the integration of energy communities in the energy markets.
 Smart tools for engagement	The questions focused on tools produced by projects to engage with consumers and citizens, engagement capabilities of those tools, and the incentive strategies that those tools were using. The goal was to have a broad vision of the stages of involvement of users, and the most popular incentives for projects.

Table 3. Research Areas by Subgroup

Considering the length of the questionnaire and its complexity, sub-groups were assigned specific projects to support the completion of the questionnaire. The timeline for distribution and data collection of the questionnaire is represented in this chart:



The questionnaire results were followed by qualitative interviews and workshops with relevant projects. The questionnaire collected 33 unique responses from BRIDGE projects. The data and analysis produced through the collection of those responses, was then distributed to sub-groups to be further analysed. Sub-groups then carried out qualitative interviews and follow-up workshops to create further context and further detail the conclusions of their analysis. Those conclusions are presented in the report below.



## 5. Chapter I – Drivers and indicators of engagement

Authors (in alphabetical order): Andrea Moser (iElectrix & SYNERGY); Camila Canelas (SENDER); Gottfried Köberl (SENDER); Habib Nasser (VPP4ISLANDS); Johanna Höffken (MUSE Grids); Joke Kort (BRIGHT); Kilian Karg (Platone); Lars De Hamer (MUSE Grids); Laura Pérez (HESTIA); Leonor Ruiz (ReDream); Louise Birch Riley (iFLEX); Marija Miletic (FLEXIGRID); Mark Thompson (eNeuron), Michael Brenner-Fliesser (COMPILE); Rebecca Hueting (RENAISSANCE); Stelios Zikos (PARITY); Vera Kools (MUSE Grids); Victoria Rebillas (eNeuron); Zbigniew Bohdanowicz.

### 5.1 Scope of the work

This Scope of Work (Scope) describes the performed tasks of each cluster within the subgroup “drivers and indicators of engagement”. With each cluster shortly describing their boundaries of work and eventual objectives. The eventual joint aim is to get a better understanding of the influence drivers and indicators have on the success and engagement of (BRIDGE) projects.

#### 5.1.1 Types of user groups and their drivers to engagement - Cluster 1

User types can be defined as different groups of users that share motivations, interests, needs, and behaviour patterns related to a specific technology, where each user type will react differently to engagement strategies. We have initially defined five energy user groups that share similarities, as shown in the figure below. Users to be engaged can have various roles, such as energy consumers, prosumers, system operators, developers, and service providers.

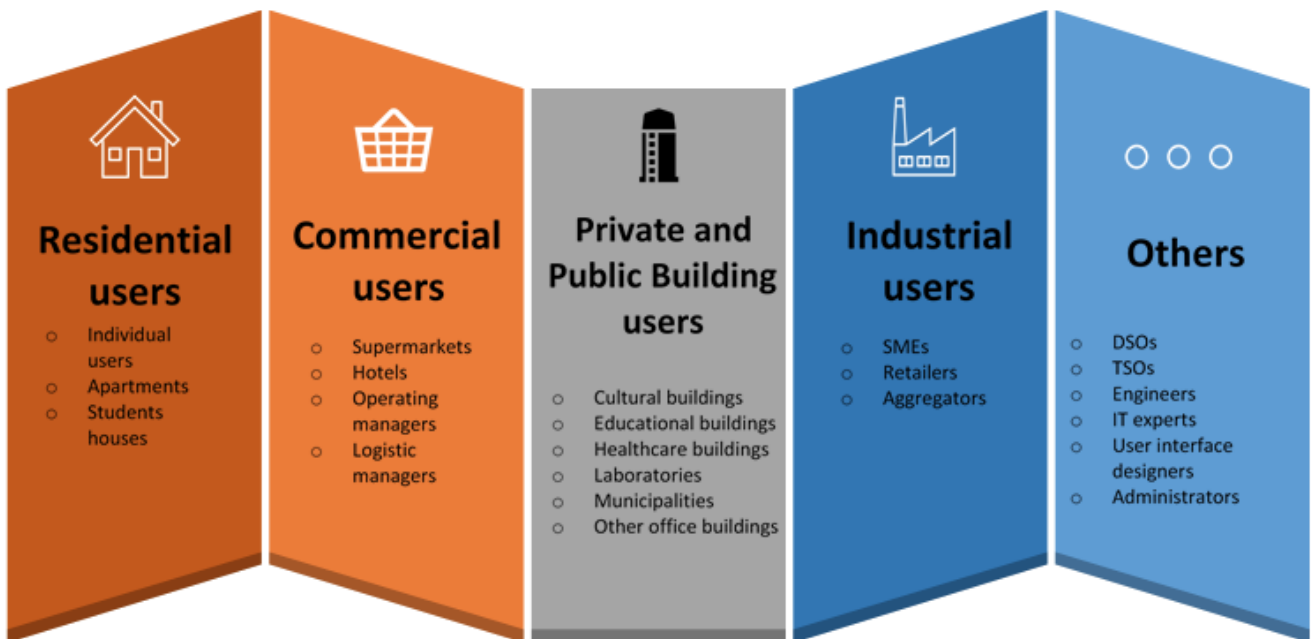


Figure 1. Types of user groups and their drivers of engagement

The main objectives of this work were to identify different user types, their categorisation into user groups, and examine several aspects related to their roles and engagement status in several ongoing EU projects. Furthermore, an additional goal was to identify and analyse the most important drivers to engage the users, along with possible barriers. Finally, the analysis of the survey results and interview discussions allowed to provide recommendations as well as directions for the next steps.



## 5.1.2 Engagement strategies per user group - Cluster 2

The overall scope of the activities conducted within Cluster 2 within this subgroup was to identify the consumer and citizen engagement strategies that are used by the different BRIDGE projects, mainly focusing on the different strategies used for special user groups. With regards to the user groups, there is a strong connection to Cluster 1, as it is intended to identify different engagement strategies that are used for the defined user types there. An important focus was also put on the identification of incentives that the different BRIDGE projects have to use together with special engagement strategies addressed to the selected user groups. In addition, it was important to find out which engagement strategies are applicable for different user types and which problems the projects have been facing during the planning and implementation phase.

The main findings of the Cluster 2 activities shall give evidence to the pros and cons of engagement strategies for different user types, problems and solutions during planning and implementation phases and it shall also put evidence on the topic, if consumer and citizen engagement strategies changed the overall vision of the project.

## 5.1.3 Indicators for engagement over time - Cluster 3

The overall scope of the activities performed in Cluster 3, of the subgroup driver and indicators of engagement, was to investigate how the BRIDGE projects deal with the challenge to keep users and/or stakeholders engaged over time and how these projects measure engagement over time. The cluster is interested in further investigating in which phases of a project the project leaders use which instruments and indicators to measure the engagement. Furthermore, we are also interested in finding out which indicators function sufficiently and which need further improvement.

The main aim of the work therefore was to give advice for funding agencies as well as for future projects on 1) how to keep users engaged over time and 2) how to measure the engagement.

## 5.2 Methodology of work

In order to properly explore the main drivers, strategies and indicators of engagement, the subgroup first looked into the previously BRIDGE researched reports concerning this topic. After thoroughly exploring previous BRIDGE results on consumer engagement, it was decided to focus on three main topics which came to the fore through discussion among the subgroup members. These determined main topics resulted in the formation of three clusters within the socio-economic drivers of engagement subgroup: (1) Types of groups and their drivers to engage; (2) Engagement strategies related to the type of group; and (3) Measuring indicators of engagement over time. Each subgroup member could indicate to which cluster their expertise would be most beneficial, resulting in an optimal distribution of knowledge.

The subgroup as a whole meets once a month to synthesise the work that has been done in the clusters. The clusters meet separately next to these monthly subgroup meetings.

In order to properly work towards the wanted end results, which is presented in this report, the subgroup determined to start off with collecting needed data and subsequently analysing the required data. This would eventually serve as input for this European Commission Report and an additional public deliverable, which will be elaborated on later on.

It is important to note that the presented research started at the beginning of the COVID-19 pandemic, which had a major impact on the way of working. Additionally, the COVID-19 pandemic and its consequences are also consistently mentioned throughout the report as they significantly influenced the projects and the research outcome.

In our findings, however, we did not put the pandemic central, though the insights must be understood against the overarching backdrop of a global pandemic, with its impacts also felt at project and engagement level. That being said the employed methods to gather the data include:



## A BRIDGE wide survey

To efficiently gather a significant amount of data a survey was used. To start off, a compact survey was distributed within the subgroup, which served as a trial survey to ensure optimal question formulation. The eventually final formulated questions were sent out in the form of a BRIDGE-wide survey which included questions from not only our subgroup but from each of the subgroups within the BRIDGE project. This eventually resulted in a total of 29 BRIDGE involved projects to provide input.

## In-depth interviews

After diligently analysing the survey output, in-depth interviews were performed. Each cluster interviewed one to three projects in order to get more nuanced information and insights, to eventually provide more insightful recommendations. All interviews were semi-structured and included questions from all three clusters. All interviews been recorded and transcribed. General information on the in-depth interviews can be found in the table below.

	Cluster 1	Cluster 2	Cluster 3			
Project	ReDream	eNeuron	iElectrix	Platone	Insulae	Insulae
Date	22-12-2021	14-01-2022	21-12-2021	21-12-2021	17-01-2022	19-01-2022
Length	30 min	50 min	45 min	60 min	30 min	60 min
Role Interviewee	Business development and user engagement	ICT market analyst	Behavioural scientist	Communication & dissemination partner (C&D)	Spoke-person of the pilot	C&D partner & spokes-persons

Table 4. General information of the performed in-depth interviews

Beside the previously mentioned clusters, an additional cluster was formed in order to develop a “Public deliverable” which would serve to make the research findings more attractive, easier accessible and useful for the general public.

All three clusters present their achievements and results below and act as relevant insights and advisory actions.

## 5.3 Analysis and Recommendations

### 5.3.1 Types of user groups and their drivers to engagement - Cluster 1

This section provides an analysis of the results derived from the short survey and the in-depth interviews, as well as a list of recommendations. The figure below presents the roles of the provided user types as declared by the participating projects (Note: User types are ordered by the ‘Key user’ percentage).

Individual users are included in large numbers in the projects, either as members of local initiatives (cooperatives, energy communities) or at the level of individuals or households. This group constitutes the most frequently mentioned key users of the projects.

Business partners are mentioned from the following groups: (1) electricity distribution partners (DSO - 38%, TSO - 21%, Aggregators - 17%); (2) IT supporters (IT experts - 28%, User interface designers - 24%); (3) technical support (Engineers - 21%). Other actors are mentioned less frequently (Retailers - 14%, SMEs - 10%, Local Initiatives - 7%).

Another notable observation is the low participation of public sector partners - Educational building users, Student Houses, Municipalities, Cultural building users, Healthcare building users. This is potentially an area worth looking at more closely to see what the reasons are for the relatively low level of partnerships with public sector partners.

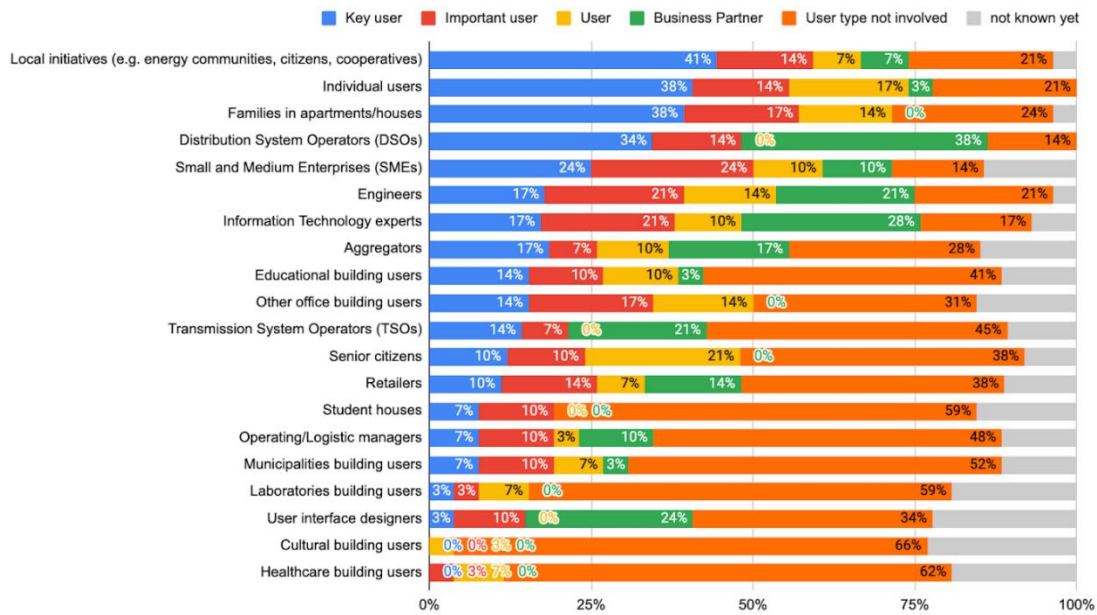


Figure 2. Roles of common user types

The figure below presents the engagement status of the provided user types as declared by the participating projects.

Partners involved in the projects can be divided into these categories:

- Electricity distribution entities (DSOs - 72%, Aggregators - 41%, TSOs - 31%)
- Technical support (Engineers - 72%)
- IT support (IT experts - 62%, User interface designers - 31%)
- Individual recipients (at the level of individuals - 52%, households - 41% or local initiatives - 34%)

The share of Small and Medium Enterprises is relatively lower (34%), however this is the audience that the projects often try to reach (28%). Among the entities with which it is planned to establish cooperation, quite often public entities are mentioned - Educational building users (21%), Municipalities (10%), Student houses (10%). Households (28%) and individual recipients (21%) are also planned to be reached in the future.

An important category is user groups that projects would love to reach ('Project would love to engage this user type'). Local Initiatives (21%), electricity distribution entities (Aggregators - 17%, TSOs - 17%, DSOs - 14%), and public entities (Educational building users - 10%, Municipalities building users - 10%, Cultural building users - 10%, Healthcare building users - 7%) are most frequently mentioned here. Business partners are mentioned slightly less frequently: Retailers - 10%, Office building users - 10%, SME - 7%.

These results are important because they show that, relatively often, cooperation with public entities is not established despite strong interest on the part of the projects.



## CONSUMER & CITIZEN ENGAGEMENT WORKING GROUP

### Exploration of citizen engagement methodologies in European R&I projects

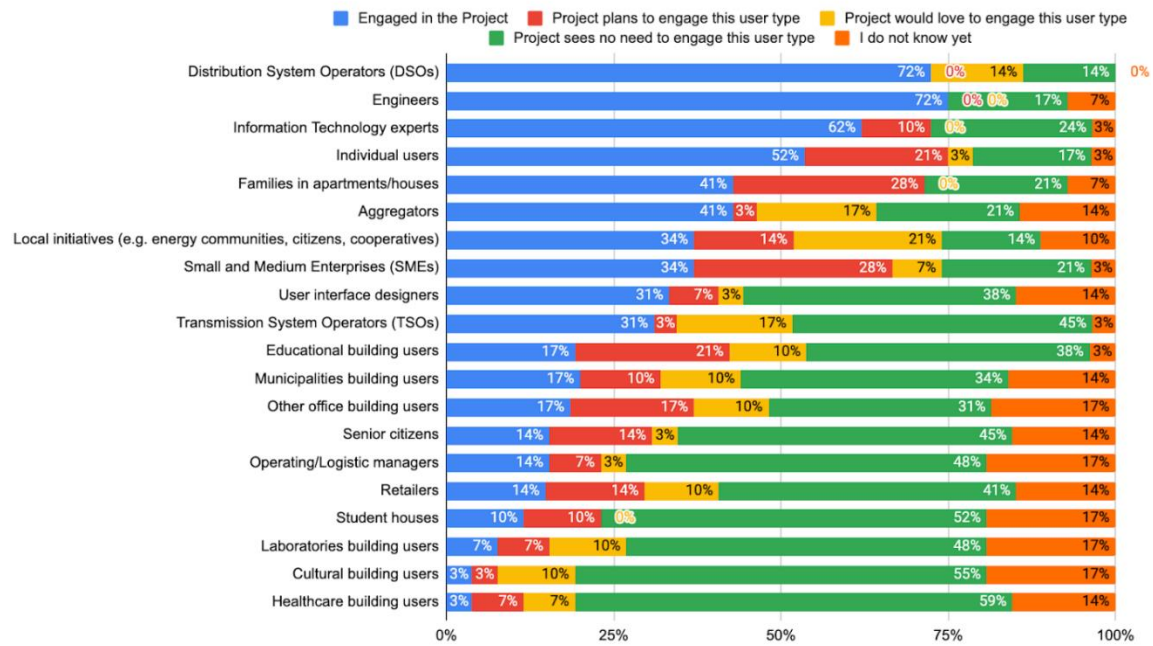


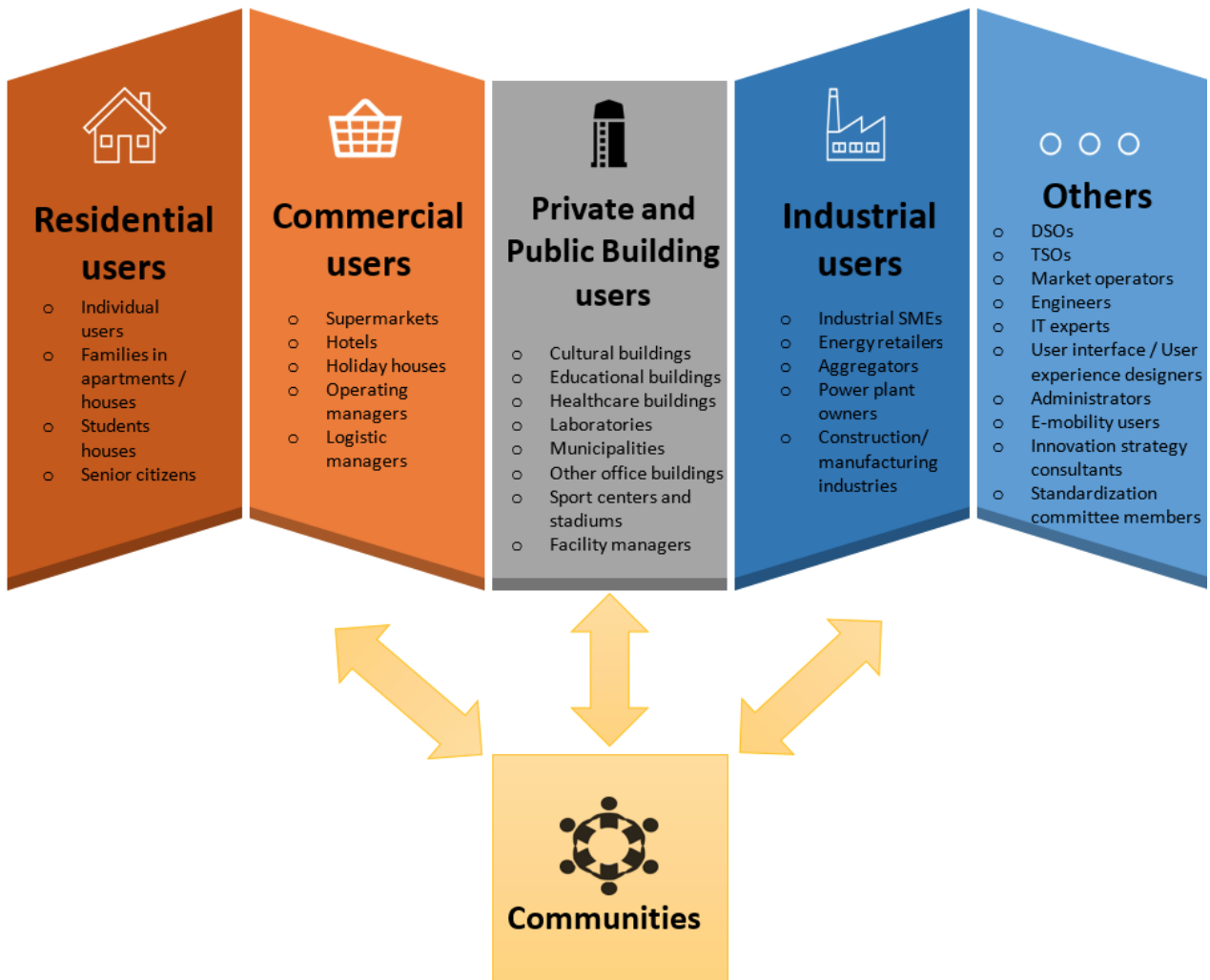
Figure 3. Engagement status of common user types

The initial list of user types that was provided, covered about 69% of the projects that participated in the wide survey. The additional user types that were reported by projects are key/important users or business partners, and are presented in the table below.

Description	Role	Engagement status
Scientific community (indirect user)	N/A	N/A
Standardisation committee members	Important user	Plan to engage
EV charging infrastructure providers	Business partner	Project partner
UX designers	Business partner	Engaged in project
Consumer strategy and innovation consultant	Business partner	Engaged in project
NEMO (Nominated Electricity Market Operator)	Business partner	Engaged in project
EV users / owners	Key user	Plan to engage
Building facility managers	Business partner	Engaged in project
University employees	Key user	Plan to engage
People staying in holiday houses	Key user	Plan to engage
Owners of power plants (biogas, PV, wind turbines)	N/A	Engaged in project
Industrial User: Lifting plant / Sewage treatment plant	Key user	Engaged in project
Urban district	N/A	Engaged in project
Football stadium	N/A	N/A

Table 5. Additional User Types

Some answers (e.g., “standardisation committee members”) suggest that the term “users” can be extended to include those behind the scenes, that there are not just different types of users, but different levels of use. This would suggest different means of engagement. Some of the answers highlighted more specific users that could come under already listed user types. One example is “university employees”, which corresponds to the more generic user type “education building users”. As a result, after analysing the received responses, the initial figure with the user types and groups has been updated and improved as shown below.



It shall be noted that the “Private and Public Building users” and the “Commercial users” categories include buildings that involve administrative users/managers, employees, and visitors. The user types that are included in the ‘Others’ user group category, could be further divided into the following sub-categories: (1) Energy stakeholders, (2) System designers and administrators, (3) E-mobility users, and (4) Consultants and committee members. Communities or local initiatives, such as energy communities, are associated with different user groups as shown in the updated figure since they involve users within a district (e.g., urban district) that cooperate to achieve common objectives. Moreover, interviews revealed that there are other important characteristics of user types that should be taken into account, such as (a) awareness about energy issues, (b) familiarity with technology, and (c) trust. By taking such aspects into account, engagement strategies to be applied can be more specifically targeted.

The analysis of the responses to the open question about the drivers to engage the users, resulted in the identification of drivers shown in the figure below. The most frequently reported driver is the social impact as part of energy community, followed by the social acceptance of tools/technology.



### Drivers to engage the users

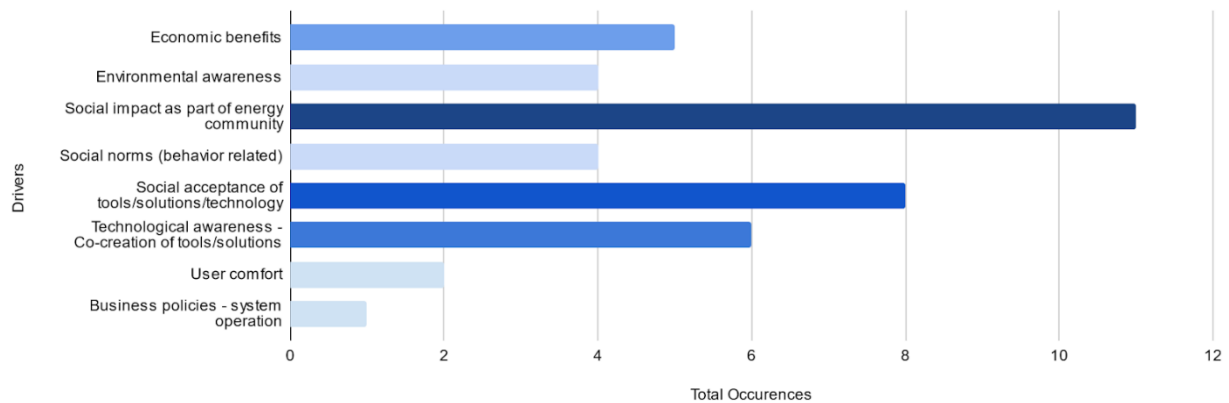


Figure 4. Wide survey results about drivers to engage the users

Key points related to the drivers to engage the users are the following:

1. Drivers related to social impact and acceptance of technologies are very important;
2. Environmental awareness and motivation can be very important for some users;
3. Economic benefits are relevant and frequently reported as a driver, however it is not a primary goal, and in addition, the financial profits from flexibility use are usually not significant.

Four barriers about user engagement that have been encountered or foreseen were reported during the interviews and are listed below.

- There are hard concepts for people to understand, such as energy flexibility
- Low trust in energy companies in some countries have impact on users' interest to engage, therefore transparency becomes vital
- Low or decreasing interest by the users over time
- Lack of users' skills to operate newly developed innovative tools

### Recommendation's list

Explore the reasons for the relatively low involvement of public sector entities in projects, despite strong interest from projects. The case of the public sector is especially promising, as this sector has a high potential for introducing innovative solutions in a systemic way.

When designing user-specific, and context-sensitive engagement strategies, consider aspects such as (a) user awareness and interest about energy issues, (b) familiarity and skills needed for engaging with and operating technologies, and (c) trust in the project.

## 5.3.2 Engagement strategies per user group - Cluster 2

The main focus in Cluster 2 was to identify different consumer and citizen engagement strategies that are used in the BRIDGE projects, differentiated in the given user types. A strong focus also lies on the identification of collective engagement models, with the result that 23% of the BRIDGE projects that participated in the survey are using collective engagement models for Energy Communities. This result was also displayed in the analysis of the user types that are addressed with different engagement strategies, as 85% of the engagement strategies are used for residential users.





## General engagement strategies

Overall, seven engagement strategies were named: (1) Interviews, (2) Newsletters, (3) Questionnaires/Survey, (4) Workshops, (5) Excursions, (6) Webinars, and (7) Additional services or sort of rewards.

In the five engagement strategies mentioned below, residential users have been the most named addressed user types within BRIDGE projects: interviews (41%), newsletters (32%), questionnaires/survey (46%), workshops (43%), additional services or sort of reward (44%).

Excursions as a strategy are not used by roughly a third of the projects (32%). Nearly half of the BRIDGE projects (46%) haven't yet decided to use this engagement strategy, but if excursions are offered, they are also mainly addressed to residential users.

The engagement strategy of using webinars to reach consumers and citizens in the relevant project areas is used for diverse user groups that have been named as "other" user types (26%), as well as to address commercial (15%) and residential users (15%).

## Specific engagement strategies

Additionally, the cluster investigated if specific strategies are used to organise and actively engage consumers. Based on the results of the survey, the specific strategies mentioned by the BRIDGE projects have been put in relation to the number of projects using this strategy with the following result:

Please note, that redundance and wording are influenced by open answer possibility.

In no specific order, the specific strategies identified are: (1) co-creation workshops, (2) common impact model, (3) detailed user segmentation, (4) financial incentives, (5) gamification, (6) governance, (7) leveraging local stakeholders, (8) living lab, (9) public events, (10) simplify the concept, (11) strong communication, (12) synergies with other partners, (13) training sessions, (14) users' interface, (15) workshops, and (16) excursions.

As a total, most of the projects also perceive to have workshops (8) as specific strategies, followed by training sessions (3); strong and constant communication (3) either by having one to multiple meetings, calls or WhatsApp contact; and Organisation of public events (3) either with local and/or public entities and inside the neighbourhoods.

4 projects have answered that they do not have any specific strategies defined and 4 others have answered that no strategies have been implemented yet.

## Engagement importance- level

It is important to point out that:

- The average rate regarding the importance of engagement for the different projects is a 4 over 5, which is quite high.
- In order to understand better the chosen strategies, a link was made according to whether engagement was essential for a project or not. This way, the following table indicates the type of specific strategies being used according to the importance level. Here it is possible to see that the most used strategy, workshops, is mainly used when engagement is of high importance.

Engagement importance level				
1	2	3	4	5



None	Financial incentives	Living lab	Common impact model	Co-creation workshops
	Not yet	No specific strategies	Excursions	Detailed user segmentation
	Strong communication	Public events	Financial incentives	Gamification
		Simplify the concept	Leveraging local stakeholders	Governance
		Training sessions	No specific strategies	No specific strategies
		Workshops	Not yet	Not yet
			Public events	Public events
			Strong communication	Training sessions
			Synergies with other partners	User interface
			Training sessions	Workshops
			User interface	
			Workshops	

Table 6. Engagement Importance Level

### Link between engagement strategy and specific user-types

Most of the projects (41%) stated to use different strategies to address different user types which are:

- Gamification ⇒ students
- Informative kiosks ⇒ general public
- Workshops for potential replicators ⇒ islands, neighbourhoods, cities
- Guidelines for potential replicators ⇒ islands
- Workshops ⇒ end-users/consumers, stakeholders, technical users
- (Information) meetings ⇒ municipalities, consumers, NRAs, Ministries of Economic Affairs and Communications, market operators.
- Information from local installers
- Direct or written contact with ⇒ potential customers
- Surveys ⇒ experts in a specific area.
- Researching end-users as a group ⇒ aggregators
- Calls in funding scheme's ⇒ SMEs and start-ups
- Open days ⇒ stakeholders, technical users.
- Institutions
- Communication plans and channels for specific target groups.

### Challenges of implementing engagement strategies

Very important was also to find out, what the biggest problems/challenges in the consumer and citizen engagement strategies and the implementation were. Clearly but not surprisingly, Covid-19 was challenging user engagement in our researched projects. 75% of the projects declared restriction due to the COVID pandemic as a challenge in citizen and consumer engagement strategies.

Additionally, 60% of the projects mentioned, that keeping participants engaged and active throughout the project is a challenge. 42% described that the language of communication (e.g., mother tongue vs. English) and the risk of technical terminology not being explained are challenges in citizen and consumer engagement strategies. Legal or regulatory issues as a challenge in citizen and consumer engagement strategies had been mentioned by 39% of the projects.

Regarding other relevant problems/challenges encountered when implementing engagement strategies in the BRIDGE projects, the survey revealed different important outcomes:

1. A clear definition and communication of the Unique Selling Points of the project's/tools (e.g., technical, business modelling) is necessary, in order to be able to fully explain the benefits of engaging with such projects/tools.
2. There is hesitation about whether it is better to start the engagement process before or after the start of the project since during the planning/proposal phase there are usually no resources to preliminarily



determinate if the users will be compatible with the projects' requirements. Also, in the context of demo-site preparation, mainly interviews have been mentioned as the best engagement strategy as it allows partners to explain to participants what the project goals and requirements are.

3. It is a challenge to keep the consumer's interest, especially when the discussions become very technical. Oftentimes the involvement of (local) third parties is necessary for a more effective engagement (e.g., system operators), and they may ask to be paid for their time. Thus, projects should not underestimate the time and resources needed to engage, not only with consumers/prosumers, but also with all the other parties/stakeholders relevant for the deployment of the project (e.g., local energy provider, local politics, already ongoing initiatives, etc.). Project managers have to deal with resistance from stakeholders other than the citizens themselves.
4. Some projects lack a specific engagement strategy with a specific time, goals, and mitigation plan. Nonetheless, in these cases, users are being recruited by ad-hoc activities organised by project's pilot partners.
5. Several BRIDGE projects have faced difficulties finding suitable participants. For instance, they struggle to identify and engaging relevant stakeholders for different reasons, such as the digital literacy of the potential users, the language barrier, data management issues, among others.
6. A limited budget/capacity/resources has been pointed out as a reason why the 'potentially' most appropriate/effective engagement strategy is not always applied in some cases, hence relying on and leveraging other existing initiatives and tools.
7. There is a lack of trust from citizens to engage in such projects, lack of trust in the energy policies or projects, lack of foreseen and immediate benefits to join the project."

### Impacts of engagement activities on project's plan and outcomes

Lastly, cluster 2 work explored how the citizen and customer engagement activities change the vision or the expected outcomes or the project plan.

Importantly, almost half of the projects are in early stages – and had therefore difficulties to answer these questions conclusively. Regarding the projects that were in a stage to provide feedback, almost 30% indicated that engagement didn't change the project vision/expected outcome/plan at all.

The rest of the answers pointed out that engagement caused changes in the project plan; a total of 20% indicates that the development process has been modified and 17% changed the end product/result of the project. When analysing project answers involving citizens, 17% said that the focus on customers/citizens shifted and in 10% the engagement strategies have changed.

The Energy Communities European projects are in very early stages, it is not possible yet to have concrete conclusions about how the engagement initiatives have influenced the outcomes of the projects.

With the available answers at the moment, there is not a clear trend. The only slight indication is that engagement initiatives did not influence the outcomes. In answers where there are changes, these are related to the product (development or final result). And in the last range, there are the changes about customers/citizens and the concrete strategies to be used.

### Recommendation's list

Generally, engagement strategies used in BRIDGE projects are tailored to specific user groups. However, there is a need and opportunity to diversity the kind of strategies to be employed, going beyond the (conventional) formats such as interviews, questionnaires or workshops.

To foster such diversification, ensure space for "engagement-innovation" within projects.

When aiming to foster and support diverse and meaningful engagement formats in projects "space for engagement impact" has to be created.



This needs the acknowledgment that engagement can a) alter the (engagement) course of the projects and b) asks for flexibility in project structure, plan and reporting of the projects.

Making space for engagement-format diversification and creating “space for impact” is closely linked to challenges of ensuring engagement over time, which is the focus of the next sections.

### 5.3.3 Indicators for engagement over time – Cluster 3

Engagement over time is a critical issue in many of the questioned BRIDGE projects. As figure [X] indicates, 17 out of 33 questioned BRIDGE projects indicated “keeping participants engaged throughout the project” as one of their biggest challenges (2nd highest number after restrictions due to Covid-19). Which is in line with previous results.

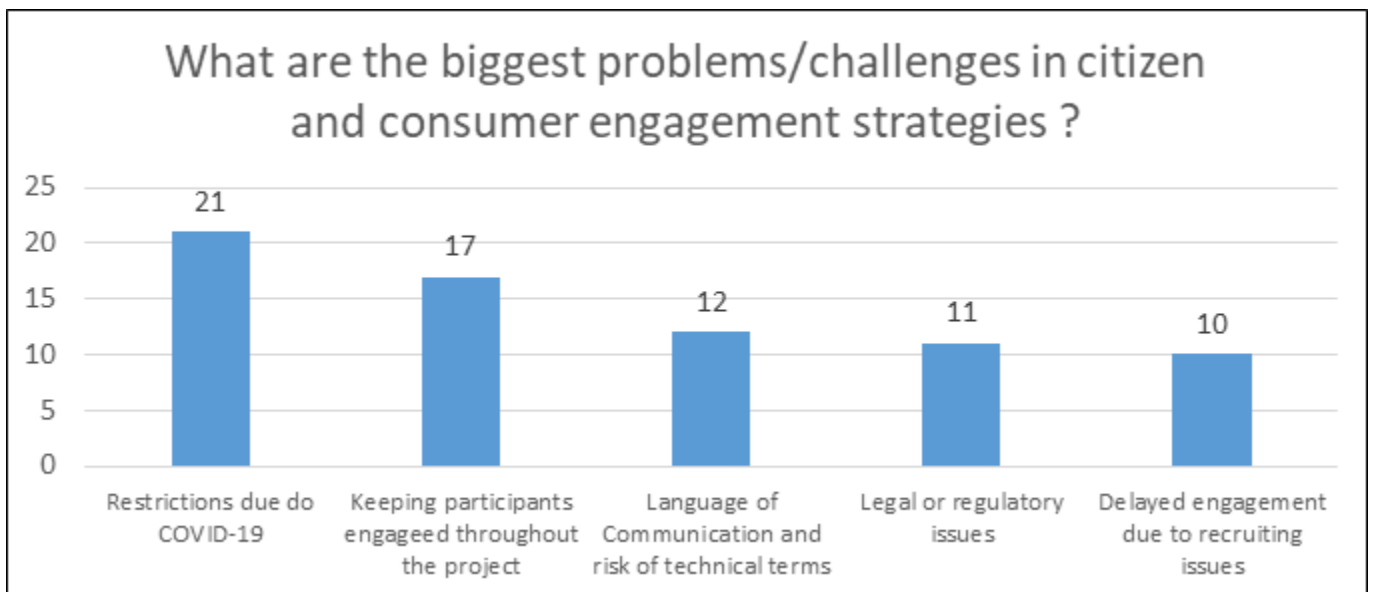


Figure 5. Biggest challenges in BRIDGE-projects (N=29)

#### Types and categories of indicators

Due to the above stated reason, measures to constantly monitor and improve engagement should be a top -priority in every project involving user and consumer engagement. In the survey, a total of 294 indicators of engagement were named by 29 projects responding. When analysing the responses (and throughout the internal discussion) it becomes obvious that very different things are summarised under the umbrella of indicators of engagement. Therefore, to better monitor and evaluate the engagement process, it seems important from an analytical point of view to distinguish between indicators of:

- What influences engagement – indicators measuring activities and situations that shape the stakeholder groups and impact their responsiveness to the engagement strategies. In the survey, a total of 147 indicators (52%) were categorised as measures that influence engagement. This indicator category therefore was the most used category. Most-named indicators in this category are: communication with public (82% of all projects), shared vision (69%), and participants’ profiles (69%).
- Activities of engagement – indicators assessing the quantity and/or quality of engagement activities. In this category 40 (14.3%) indicators were placed. Most-named indicators in this category are: communication with participants (76% of all projects), quality of communication with participants (62%) and feedback options (52%).
- Results of engagement – indicators that measure impact of the engagement itself. A total of 92 (32%) indicators were categorised as results of engagement indicators. Most-named indicators in this category



are: Number of participants (86% of all projects), amount of energy savings/energy produced, (76%) and number and quality of responses (72%).

### Indicators throughout different phases of a project

Looking at the project timeline and the indicators assigned to project phases, it is evident that indicators of what influences engagement are mostly used at the beginning and middle of the projects. Specifically, 36% of named measures are applied at the beginning and 42% in the core phase. Measures of activities of engagement are mostly applied in the middle phase (54%) and measures of results of engagement in the middle (39%) and at the end of the project (34%). Constant use of different categories of indicators during the whole project might be more beneficial to recognise problems as fast as possible and to set countermeasures early on.

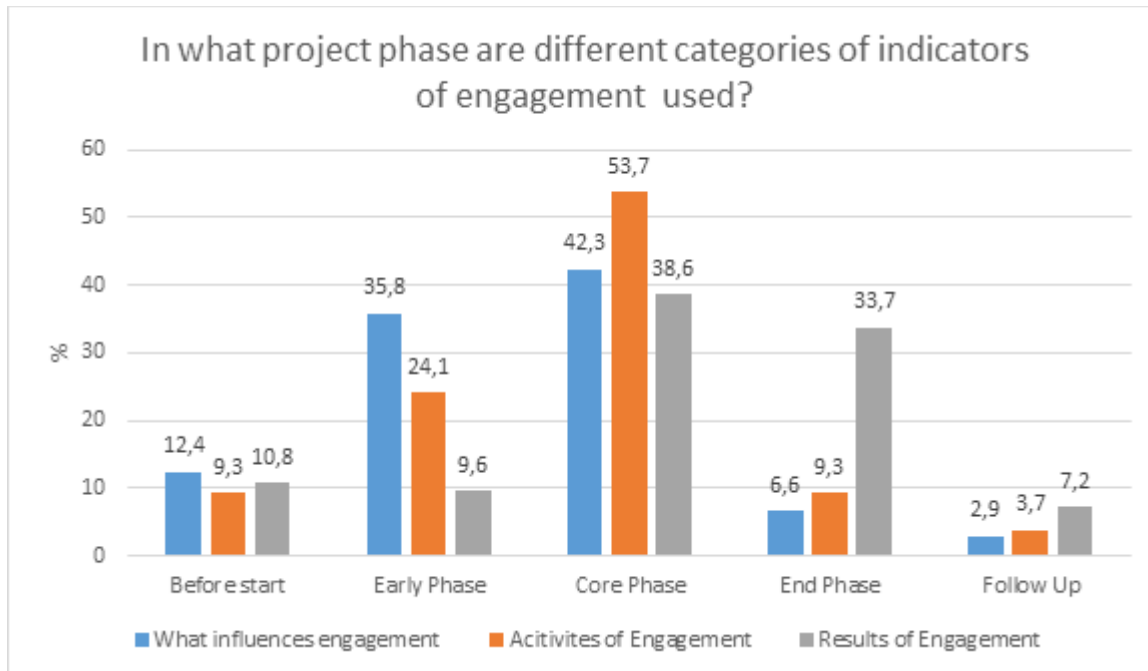


Figure 6. In what project phase are different categories of indicators of engagement used? (N=29)

Most projects reported satisfaction when asked how well the indicators worked out. Many projects recognise the importance of the participants' feedback for retaining the expected level of engagement. As one survey participant puts it: "Understanding the user, their needs and barriers is key." Most of these projects collect feedback through workshops and similar types of events, followed-up by questionnaires and interviews. Necessity for continuous communication with the participants is also stressed in many answers. The collected feedback is used to adjust the strategies of engagement.

Several projects declared usage of special indicators that measure project impacts beyond project duration. These indicators can be described as measures of social change. Among them are raising awareness and improving perception of technologies and services on the technical side and trust building and citizen empowerment on the social side. Including this sort of indicators and thus social KPIs and scientists, in more projects is sure to have positive impact in the long term.

To gain further insight into these topics, interviews, as mentioned in the methodology, were planned in the next step. The results of the analysis of the semi-structured interviews on "Indicators for engagement over time" can be summarised as follows:

Overall, both projects applied similar KPIs throughout the different project phases, in order to keep track of engagement with comparable results. Both PLATONE and INSULAE did not change their set of KPIs due to the COVID-19 pandemic, although quantitative targets had to be reviewed (e.g., a target number of participants, number of public events organised).



## Improving the use of key performance indicators

Concerning innovative KPIs, more than proposing new ones, respondents suggested combining existing KPIs in order to better describe actual engagement. Most projects track: the number and composition of stakeholders participating in events, surveys, and workshops; the number of stakeholders actively contributing to the research; the number of stakeholders testing or willing to use the innovative solutions provided by the project; the number of followers and readers of online contents. To track actual engagement such numbers shall be linked to other dimensions such as the amount of time spent during events/activities, level of proactivity, continuous commitment, and, satisfaction rates (important also if self-assessed through feedback surveys). Thus, the suggestion is, to interlock “hard” quantitative KPIs with softer qualitative ones, to get a complete picture of the true engagement of participants.

Projects must also consider that for each stakeholder type targets change. Private citizens, users’ associations and SMEs are more difficult to retain. Policy makers are harder to involve in real life events/activities. Industry and market representative, the scientific community and members of the Academia are generally already interested in the topic and linked to the research network. Projects aiming at citizen engagement and more Social Science and Humanities-oriented should not only put more emphasis on their actual involvement, but also give a different weight to the commitment of each target group, according to the barriers encountered in recruiting them.

## Important project aspects that lack KPIs

Concerning equity and inclusivity, despite being clearly mentioned in many project calls, they are hardly tracked by technology-oriented projects. If it is a shared opinion that energy related projects should work more and more on tackling the social barriers that prevent the uptake and upscale of innovative solutions, such KPIs should be used more often, since they could offer valuable insights on the contribution of energy project from a SSH perspective and help increase the societal benefits at large.

Probably related to that, as part of the engagement strategy, projects should pay more attention to actual user needs, not only in the identification of requirements of the proposed solutions but also in designing activities more appropriate to the life-balance of addressed citizens. To this aim, the Consortium should i) collect information about the local communities involved before organising on-site activities ii) enable bi-directional communication precisely when and where end-users actually use proposed solutions iii) promptly collect feedback through early A/B user-testing or any other approach derived from actual product-development experiences and start-ups.

Following the above, another suggestion is to “contextualise” contents for the local communities involved: KPIs should consider the number of contents translated or events organised using the local language, also ensuring that first interactions are more focused on spreading awareness and knowledge, while providing more technical contents later on, to ensure a higher rate of transparency and comprehension and thus higher consciousness of decision making and acceptance by end-users. The success of such materials linked to the local context should be tracked separately for each demo site.

Connected to this a further problem identified by the interview partners is the low awareness of engagement approaches in most technology-oriented project consortia. Thus, as first step, there is a strong need of increasing partners’ knowledge about methods of engagement as soon as the project starts. Partners, especially those leading pilot sites, should receive expert training on engagement and contribute to the adaptation of methodologies appropriate for each context, including engagement tracking methods.

## Impact of KPIs usage and outcomes

Low engagement is also linked to the low flexibility in adapting the project’s engagement strategies, when unexpected conditions emerge in the demo-sites or in planned activities. This is why a higher degree of flexibility of engagement strategies and activities and related KPIs in project proposals could be a first step to readapt and align to changes, to ensure there is always room for improvement and innovative ideas.

Some of the findings that should be highlighted again for future projects are to ensure a long-term engagement and retainment strategy which is supported by relevant indicators. It is also essential to distinguish between 1) indicators of what influences engagement 2) indicators of activities of engagement and 3) indicators of results of



engagement to be more specific and aim at monitoring all three aspects throughout the whole project. However, consider enough flexibility, stakeholder feedback, and local context in order to be easily adaptable to a (changing) environment.

### **Recommendation's list**

Ask for a concept on how projects want to secure engagement over time and on how they want to measure it, but allow enough flexibility so that projects can adapt the concepts according to the needs of stakeholders/users
Ask for clear engagement strategies and concepts distinguishing between 1) indicators of what influences engagement 2) indicators of activities of engagement and 3) indicators of results of engagement to be more specific.
Be aware that qualitative indicators (like effect of an engagement on participants) in some cases might be more beneficial in mapping engagement over time than quantitative indicators (like number of participants in a workshop). So, besides “hard” quantitative KPIs aiming more strongly on capturing technical aspects of the projects, also ask for softer qualitative KPIs aiming at evaluating participants engagement (quality and depths of engagement, quality of user feedback, etc.)

## **5.4 Next steps**

The work presented by this subgroup opens several possible avenues for future exploration. A promising future step is to identify the interlinkages between the different subgroups within BRIDGE, in order to ensure that all the benefits of the research are reaped. Below is, in accordance with the presented results, a short overview of future steps is presented for each cluster.

### **5.4.1 Types of user groups and their drivers to engagement - Cluster 1**

- Identify and promote engagement opportunities for the user types that usually are not engaged but are useful to have engaged in the project.
  - While doing so, link this work directly to the identification of context-sensitive, and user-specific engagement strategies per user -group
- Explore additional ways to classify user types in user groups
  - Apart from the classification based on location or role, possible classification could be the level of awareness in energy issues, the level of familiarity with the technology, customer relations status, and other

### **5.4.2 Engagement strategies per user group - Cluster 2**

- Explore more “special” and innovative engagement strategies, in order to see how they are conducted and operate, and which effect they bring.
- Identify a variety of concrete indicators that help with analysing the success rate of an engagement strategy.



### 5.4.3 Indicators for engagement over time - Cluster 3

- Investigate the relevance of multiple indicators in different phases
  - Look for existing indicators and if/why they are applied in specific project phases
- Identify the best practices for using indicators to adapt engagement strategies throughout the project duration.
- Pinpoint the current knowledge gaps between stakeholders and consumers
  - As shown the lack of knowledge often leads to miscommunication and less engagement
  - To overcome this gap, identify the best knowledge-sharing and education practices in existing projects





## 6. Chapter II – Strategies of engagement

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### 6.1 Scope of the work

The overall goal of the Strategies of engagement subgroup (previously Group Building) is to study and uncover the ways to mobilise consumers to act collectively and build a consumer group. The scope of the work carried out by the subgroup during 2021 was to collect and process the information and experience from the BRIDGE projects implementing strategies of engagement as part of their project development. Based on the gathered data, a set of strategies with a different degree of maturity or implementation were analysed and conclusions and recommendations are provided to mobilise consumers to act collectively and build a consumer group.

Stakeholder engagement in research has already been promoted under various EU Framework Programmes and it was defined in more detail in the FP7 Programme (Jolibert & Wesselink, 2012<sup>1</sup>). In Horizon 2020 stakeholder engagement was given more prominence with public engagement being designated as one of six key elements in “Responsible research and innovation” (RRI)<sup>2</sup> defined as:

*“multi-actor and public Engagement (PE), is about co-creating the future by bringing together the widest possible diversity of actors, including researchers and innovators, industry and SME, policymakers, non-governmental organisations (NGOs), civil society organisations and citizens, that would not normally interact with each other, on matters of science and technology, in particular to tackle the grand societal challenges that lie before us. PE implies a two-way, iterative, inclusive, and participatory process of multi-actor exchanges and dialogues (also involving minorities, considering gender and multiple generations). Public engagement in research and innovation fosters more societally relevant, desirable, and creative research and innovation actions and policy agenda, leading to wider acceptability of science and technology outcomes”.*

RRI is a concept which anticipates and assesses potential implications and societal expectations regarding research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation. In this context stakeholder engagement is conceptualised as a “transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)” (von Schomberg 2013: 19<sup>3</sup>).

Additionally, a specific need exists in realising the vision of Energy Citizenship following Devine-Wright (2007<sup>4</sup>) stressing both awareness and action engagement aspects concurrently with Energy Transition.

Therefore, BRIDGE R&I projects are encouraged to design and develop adapted strategies to engage with citizens and consumers to generate better adapted and most successful results. However, despite the effort made by BRIDGE projects to implement strategies of engagement, last year’s CCE WG 2021 report<sup>5</sup> showed that R&I projects still face the following gaps to establish successful engagement initiatives:

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1 Jolibert, C. Wesselink, A, 2012, Research impacts and impact on research in biodiversity conservation: The influence of stakeholder engagement, pp 100-111, Env. Science & Policy 22, Elsevier

2 [Responsible research & innovation | Horizon 2020 \(europa.eu\)](https://ec.europa.eu/euro-iss/infocentre/questionnaire/2020/01/2020-responsible-research-and-innovation)

3 Von Schomberg, R, 2013, A vision of Responsible Research and Innovation, In: R. Owen, M. Heintz and J. Bessant (eds.) Responsible Innovation. London: John Wiley

4 Devine-Wright P, 2007, Energy citizenship: Psychological aspects of evolution in sustainable energy technologies. In: Murphy J (ed.) Governing Technology for Sustainability. London: Earthscan, 63–88.

<sup>5</sup> [BRIDGE WG CCE REPORT 2020-2021](#)



- Need for more group building effective and efficient methodologies to improve the quality of formation and operation of the consumer group while shortening the time needed.
- Need for clear and improved coupling of smart grid with common interest establishing group sustainability.

Based on these conclusions the Strategies of Engagement subgroup decided to deliver two separate deliverables by 2022:

- This CCE WG report 2022 Strategies of Engagement analysis, conclusions, and recommendations
- A BRIDGE projects Strategies of Engagement Handbook - A guide for engaging EU citizens in energy projects supporting both awareness and action aspects of engagement  
[See the Strategies of Engagement Handbook - ANNEX I](#)

## 6.2 Methodology of work

To tackle the gaps described above and to deliver on the two deliverables mentioned, the Strategies of Engagement subgroup followed a work approach based on these steps:

- STEP 1: Analysis of the CCE WG 2021 report findings
- STEP 2: Design of a research questionnaire to find out about BRIDGE projects' Strategies of Engagement and analysis of responses
- STEP 3: Further data collection from selected BRIDGE projects

### STEP 1: Analysis of the CCE WG 2021 report findings

Last year's CCE WG report, concluded that:

- It is recommended to support initiatives for establishing group building methodologies bringing together methods, processes, and tools from the various member projects to accelerate the energy transition process and achieve better and faster engagement of the citizens.
- It is necessary to clarify the importance of the inclusion of engagement experts that will not only use smart grid and storage technology to motivate citizens to be part of an energy transition group but also capitalise on the innovative knowledge on social science, human behaviour and value domain science.
- It is recommended that consortiums work with existing citizens groups and collective actions. Citizens have shown interest in supporting research and innovation and where the social fabric underpinning collective action has already been established. This also highlights the need for a clearer understanding of the nature of group building for energy transition and their clear role even before the project is approved.

Based on these conclusions, the Strategies of Engagement subgroup decided to widen its scope and transition from being the "Group Building" to become the "Strategies of Engagement" subgroup focused on analysing the processes and methodologies used by BRIDGE projects to understand and identify potential success factors and barriers of implementing a strategy of engagement in BRIDE projects. To achieve these, the subgroup agreed the next steps to be:

- Gather and analyse a second data collection through a survey
- Exchange experience among the BRIDGE projects and elaborate a potential "common" methodology bringing together methods, processes, and tools from selected "case study" projects.

### STEP 2: Design of a research questionnaire to find out about BRIDGE projects' Strategies of Engagement and analysis of responses.

Following the initial analysis of the report, a set of questions were designed to gather the information needed to conduct the analysis defined above. The questions focused on the techniques and methods for engaging users that had been developed by the projects. The section on Strategies of Engagement of the survey conducted, questions 17 to 24, focused on methods to trigger collective actions as follows:



- What kind of citizen and consumer engagement strategies do you use in your BRIDGE project and for which user group? An overview of the user groups was provided above. You can select multiple user groups per strategy.
- Do you use specific strategies of organising and actively engaging your consumers?
- Are you using specific strategies for specific user types in your BRIDGE project(s)? Which ones?
- What is the duration of the engagement process in your BRIDGE project(s)?
- What are the biggest problems/challenges in citizen and consumer engagement strategies and implementation in your project?
- Are there other relevant problems in citizen engagement strategies and implementation in your project that are not listed above?
- How does your project plan to deal with low engagement over time?
- How did citizen and customer engagement activities change the vision or the expected outcomes or the project plan in your running project?

These questions were integrated into a bigger questionnaire including inputs and questions from the other three subgroups of the CCE WG. The overall questionnaire was sent to all BRIDGE projects in 2021 with specific follow up on projects integrating the CCE WG with the aim to collect data from the BRIDGE projects, to be later analysed by the different sub-groups.

### STEP 3: Further data collection from selected BRIDGE projects

After a preliminary analysis of the responses gathered, a follow-up questionnaire was sent to a selection of projects that indicated their BRIDGE project having implemented an engagement strategy. This second questionnaire was used to deepen the analysis about the success and barriers of the strategies of engagement implemented by projects and, to develop the Strategies of Engagement Handbook (Annex I), which focuses on describing the strategies of engagement and methodologies used by the selected projects (see next section for project list).

As a result of these steps, a set of recommendations for integration of strategies of engagement in BRIDGE projects based on the gaps highlighted in BRIDGE CCE WG 2021 report has been delivered, including the results of both questionnaires, and the Strategies of Engagement Handbook. [The Handbook can be found in the Annex I of this report.](#)

## 6.3 Analysis and Recommendations

### Analysis

As mentioned, the CCE WG 2021 'Exploration of citizen engagement methodologies in European R&I projects' report, outlined the following gaps:

- Need for more group building effective and efficient methodologies to improve the quality of formation and operation of the consumer group while shortening the time needed.
- Need for clear and improved coupling of smart grid with common interest establishing group sustainability.

The questionnaire responses were analysed focusing the attention on:

- Methodology / strategy established and applied for engagement
- Problems and challenges for the implementation of established methodology / strategy



## CONSUMER & CITIZEN ENGAGEMENT WORKING GROUP Exploration of citizen engagement methodologies in European R&I projects

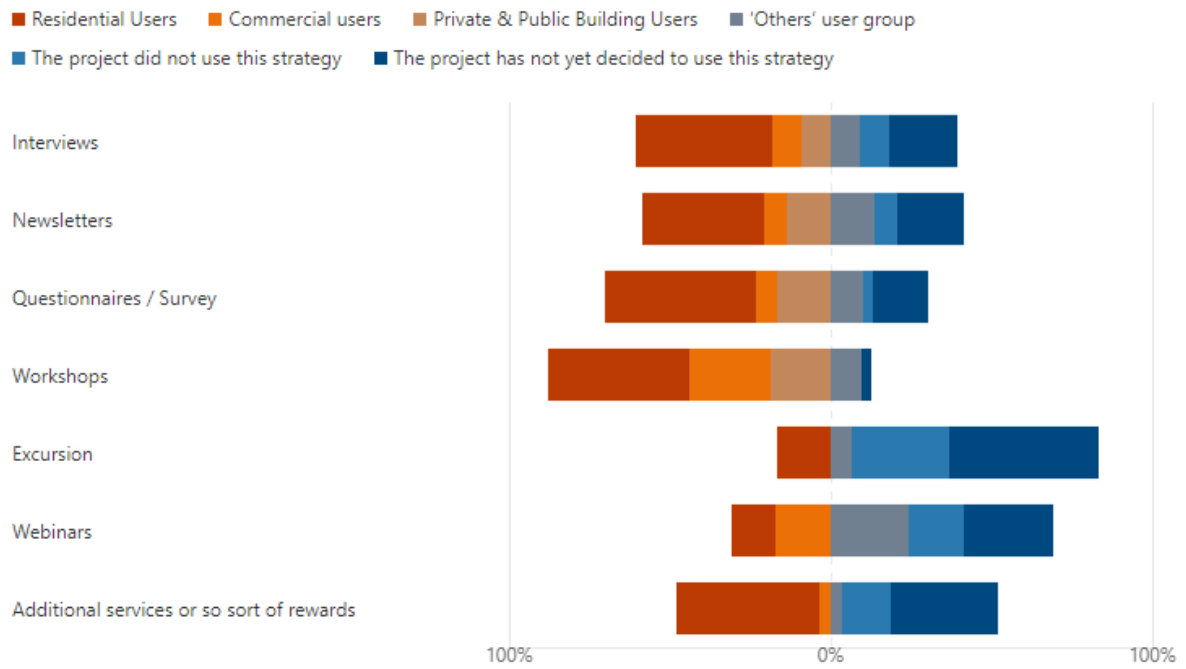


Figure 7. Types of engagement tools used by BRIDGE projects to engage with target audiences

Only a few BRIDGE projects indicated to have established and used a structured methodology for group building or a strategy of engagement. The BRIDGE projects with a developed engagement strategy have been listed in the following table:

No.	Project
1	E-LAND
2	GIFT
3	INSULAE
4	MERLON
5	PLATONE
6	RENAISSANCE
7	SENDER
8	iFLEX
9	Interface
10	Neuron
11	LocalRES
12	MUSE
13	GRIDS
14	REDREAM

Table 7. Projects that indicated having a strategy of engagement in place: period 2021 - 2022

These projects have been useful examples of suitable strategies and tools for engagement of consumers and citizens for future BRIDGE projects. From the analysis of survey responses of these BRIDGE projects, a specific strategy is or will be used based on a user-centred approach. However, most of these projects do not define a structured engagement strategy. Therefore, the strategies are not easily replicable or adaptable to other European contexts

Other relevant information observed is that some of the adopted strategies refer to existing strategies adapted to local characteristics and challenges of project pilots. It is therefore recommended to implement engagement strategies that inspire replicability in other local contexts so that future projects can proceed faster in the



implementation phase, adapting these to local culture and conditions such as user-types, language, digital capability, etc).

It should also be highlighted that citizen and consumer engagement is not only relevant at the initial phases of the project (usually to inform or raise awareness). Attention should be paid to the sustainability and attractiveness of the activities implemented, as these are important to maintain engagement in during the whole project and beyond. A practical guideline for project pilots to be able to understand end-users' needs from a non-technical perspective and to understand what makes engagement strategies work and how to apply corrective strategies if needed would be helpful.

## Challenges

The main challenges identified by BRIDGE projects when implementing their engagement strategies are as follows:

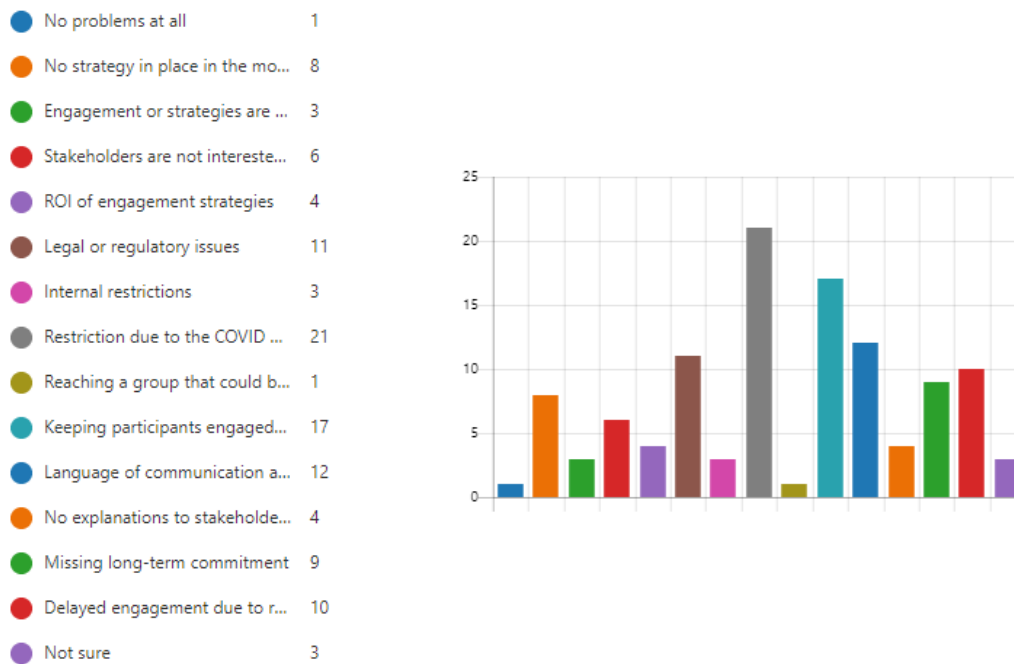


Figure 8. Issues highlighted by BRIDGE projects when implementing their strategies of engagement

The challenges identified by the BRIDGE projects through both questionnaires could be grouped into three main areas, namely (1) communication and motivation, (2) project management, (3) engagement process.

### Communication and motivation

The communication and motivation barriers were enforced by the pandemic, e.g., the absence of face-to-face interaction, as well as conversations between different stakeholders deviating from the original scope. The pandemic and translation of activities to an online environment may have made it more difficult to reach out to traditional participants. However, it may have helped to reach some not-so-traditional or often-difficult-to-reach groups, such as young people or stay-at-home people with carers responsibilities for example. This should be considered when designing a strategy of engagement as when the health crisis is over, some of these new tools for engagement that projects were forced to use, might still be relevant to reach out to specific target groups.

### Project Management



Project management related barriers often come back to complicated administration processes and the lack of end user feedback integration in the design or development phases of BRIDGE projects. If there is a poor engagement strategy planning this is often reflected in inadequate allocation of resources to perform quality and effective engagement activities resulting in unsuccessful results in terms of getting a diversity of perspectives to improve R&I project results.

### Engagement process

Challenges in the engagement process relates to difficulties in recruiting end users and the ability to implement and maintaining the engagement strategy. Local ambassadors have been found to be key in engaging and recruiting local/end users. Also, more creative digital tools that support consumer engagement should be applied.

Considering the survey responses, it is also concluded that getting a complete picture of the impact and success of engagement strategies is often difficult to measure through key performance indicators (KPIs) related to engagement. More flexible, open and qualitative indicators to measure engagement should be identified in order to appropriately measure the impact and contributions of engagement strategies into R&I projects.

### Recommendations

Some recommendations to build citizen and consumer engagement are identified based on the experience of the BRIDGE projects as identified in the surveys:

- Always include social science experts in BRIDGE projects as these are of great value as ‘moderators’ or ‘translators’ between technical experts and end users.
- Research should be carried out to develop better-defined strategies and processes that can be adjusted to different project pilot set-ups or contexts. A practical guidelines document could support projects and communities to apply best practice in different situations.
- Relevant KPIs should be identified that consider the multi-dimensional aspects of the successful engagement (qualitative indicators).
- A clear definition of what the European Commission means by engagement strategy for BRIDGE projects, perhaps requesting an outline of the strategy within the proposal phase.

[See the Strategies of Engagement Handbook - ANNEX I](#)

## 6.4 Next steps

Most BRIDGE projects have directly or indirectly highlighted the importance of consumers’ and citizens’ behavioural change when it comes to energy systems flexibility. End-users will have to decide whether to transfer autonomy to these new systems which may sometimes involve inconvenience or reduced comfort when autonomous systems reduce space heating or cooling to make more rational use of cheaper, greener, and more easily accessible energy. So, the energy transition relies on consumers and citizens’ adaptation to new relationships with energy consumption among others. Therefore, the strategies of engagement used in BRIDGE projects are highly important to encourage collective action for a fair and sustainable energy transition.

The work developed by the Strategies of Engagement subgroup has been carried out with the aim of examining the past and future direction of the strategies of engagement implemented by European R&I projects participating in BRIDGE to accelerate the energy transition and identifying success factors and implementation barriers and formulate recommendations based on current scenarios. The subgroup also aims to looking ahead to future challenges to guide future projects and maintain the stability of the CCE WG to keep contributing to the BRIDGE initiative. Further research should focus on the following aspects in the coming years:

- 1) Create a common database collecting data for BRIDGE projects collecting information and good practices in terms of engagement strategies that have been successful.



- 2) Identify categories and/or common guidelines elaborating on the aspects that establishing a strategy of engagement for BRIDGE projects should cover.
- 3) Identify more creative and research on digital solutions/tools that help maintain consumer and citizen engagement overtime (ensure sustainability of engagement).
- 4) Identify KPIs to measure the success of engagement activities and to evaluate the realised solution and its impact (qualitative indicators). The overall observations indicate that active engagement of citizens takes best place if mechanisms of engagements have been previously established. The presence of a trustworthy and proven organisational structure will allow projects to ensure the best results in terms of engaging with citizens.



## 7. Chapter III – Governance and organisational models

Authors: Joshua Roberts, REScoop.eu (COMPILE) Maarja Meitern, Bax & Company (CREATORS); Stavroula Papa, REScoop.eu (OneNet)

### 7.1 Scope of the subgroup

In 2020, the sub-group on governance and organisational models explored which (legal) organisational models exist for consumer engagement and which governance principles facilitate/ensure effective consumer engagement in decision-making in those different models. In 2021, the sub-group built off this work to explore questions around how to integrate such legal governance and organisational models into existing (wholesale, retail, forward, day-ahead, balancing, etc) and future (local, flexibility, ancillary services) energy markets.

#### Energy communities as a social and organisational concept

Under the Clean Energy Package, namely Directive 2018/2001 (Renewable Energy Directive) and Directive 2019/944 (Electricity Market Directive), energy communities are framed as a social and organisational concept. In other words, they are legal entities that are capable of facilitating collective ownership to participate in the energy market by non-professional actors, in particular households, local small and medium enterprises and local authorities (e.g., cities and municipalities). In this sense, the definitions of renewable energy communities and citizen energy communities (CECs), as they are defined by the Renewable Energy and Electricity Market directives, contain principles to ensure open and voluntary participation, democratic decision-making, and purposes to provide social innovation, or non-commercial motives, rather than profits.

With this in mind, in 2020 the sub-group found that in order to create a sustainable organisational structure, participation is key. In order to preserve and enhance participation of citizens, it is necessary to maintain a strong and tailored mechanism of governance, based on democratic decision making (impact of each member on the decisions taken), and transparency (similar level of information throughout the organisation). Trust building should be the primary goal of the governance institutions, and asking more from the members then becomes a strength rather than a weakness.

#### Regulating energy communities

The unique characteristics of energy communities can present a barrier to their ability to participate in the market, because at the moment they are regulated similar to other companies. This raises significant questions when it comes to designing rules and regulations that govern the participation of energy communities in the market. On the one hand, the goal of energy communities is primarily to facilitate participation and democratic decision-making, and to focus on social innovation rather than profits. Furthermore, new energy communities are likely to bring together participants that do not have experience in the energy sector. On the other hand, energy communities are also market participants and therefore must be subject to responsibilities that govern different activities, according to national regulations and EU market rules.

As inexperienced market actors, energy communities may also need dedicated support to become established, and to navigate administrative procedures. In particular, energy communities need legal advice and other technical administrative support when they are looking to become licensed or approved to carry out new activities.

Given their non-traditional organisational and governance structure, as well as their proclivity towards focusing on local and smaller projects, it may be difficult, and even undesirable, to regulate energy communities in the same way as traditional, larger, commercial market actors. This raises significant questions around the development of national regulations for energy communities. It also raises questions about how to ensure that proper tools and mechanisms exist at the national level to help energy communities access expert assistance, and to professionalise their activities over time – all while maintaining their original objectives.





## What do we mean by market integration of energy communities?

It is this inherent tension between developing proportionate regulation and ensuring democratic engagement and participation by citizens that led to the work of the sub-group in 2021. From a framing discussion, the sub-working group organised around the following questions:

- How do energy communities interact with other market actors in the market, whether it be service providers (e.g., aggregators, ICT providers, etc) or other regulated entities, such as distribution and transmission system operators?
- What roles, or functions, do energy communities want to perform, and how do these align with the community's primary objectives?
- Which markets do energy communities aim to participate in?
- If we want non-professional consumers to participate in the energy market, what framework do we need?
- What is the state of play in terms of awareness by regulators and other market actors around facilitating the development of energy communities through the development of national rules and regulations?

The aim of the sub-group's work was to look at these questions, using experience from the pilots within BRIDGE projects that include energy communities or market actors that may interact with energy communities. Methodology

The subgroup convened in repeated online meetings to scope the goals for the present working phase and then shifted to joint online drafting of a working document. From the range of applications of indicators for the assessment of engagement, the subgroup identified the Stages of Change model as a novel perspective to address the practical observation that most consumer communities undergo an extended period of formation and growth until they can be assessed by quantitative metrics such as Euro or kWh.

We reviewed previous studies on the Stages of Change Model in the pertinent literature in order to transpose definitions and caveats to the case of consumer communities (or: collective action groups). We then applied the Stages of Change logic to the indicator systems for assessing engagement in our ongoing project, in order to identify possible blind spots and ways to move forward.

## 7.2 Methodology of work

The sub-group on governance and organisational models tackled the issue of market integration through several different activities throughout the year.

### Framing the issue of integrating energy communities into the market

The sub-group held a meeting to discuss the topic of what it means to integrate energy communities in to the market. Josh Roberts (Chair) provided a brief presentation on the topic. Subsequent discussion focused on how to frame this issue within the context of the previous year's research work on ideal organisational and governance models for energy communities. From this discussion, it was decided that the group would form a set of questions that would be the focus of exploration.

### Questionnaire

The survey questions were aimed at understanding to what extent energy communities participating in BRIDGE Projects are becoming active, acknowledged and/or supported to participate in different energy market contexts, including local markets (e.g., flexibility), balancing markets, day-ahead, forward markets, etc. The aim was also to better understand perceptions from projects whether regulatory frameworks, and national regulators themselves, have started to account for the specific characteristics of energy communities, given their particular organisational ownership and governance models.

Our sub-working group collected all of the responses to the questionnaire in a shared table. Volunteers then each assessed groups of responses. First, we made comparative assessments of answers given by the different projects



to individual questions. Second, we made high level observations for each project, based on interesting takeaways relating to the state of market integration of energy communities from their responses.

Not all BRIDGE projects that responded to the questionnaire contain energy communities, or engage with them. As such, in order to narrow down the number of responses down to a relevant sample size, we discounted all the projects having no material link to energy communities. From this exercise, we narrowed down the sample size from which we undertook our analysis to 29 projects.

For our analysis, we also split responses into two categories:

1. Responses given by projects representing energy communities as project partners; and
2. Responses given by projects representing other market actors that act as service providers to energy communities or interact with them in another significant way.

Therefore, our analysis is provided from two perspectives: first, from the energy communities themselves and their perspectives of how the market is evolving to facilitate their participation; and second, from different market actors that are developing technologies, services, or rules for energy communities as energy system users.

### Workshop on Market Integration of Energy Communities

In order to complement input received from the questionnaires, the sub-group organised a workshop entitled “Citizens at the Center – Workshop on Market Integration of Energy Communities”. The workshop dove more into the topic of market integration of energy communities. The Workshop heard from several pilots from relevant BRIDGE projects including and/or engaging energy communities. Furthermore, the workshop broke down into several discussions on:

- opportunities and challenges for the rollout of energy communities within the ongoing transposition process;
- challenges/opportunities in the use of digital tools to enable the rollout of energy communities; and
- striking the balance between professionalisation and democratic decision-making/citizen engagement.

The breakout discussions were led by the staff members of DG Energy, namely: Achille Hannoset (Policy Officer, Unit B1), Vera Kissler (Policy Officer, Unit C1), and Cristiana Marchitelli (Policy Officer, Unit B5).

The workshop also provided an opportunity to discuss the Digitalisation of the Energy Sector Action Plan (Action Plan) that is currently being drafted by the European Commission, and the role that energy communities can play in empowering citizens while enhancing consumer protections.

From the Workshop, conclusions and recommendations were drafted by the Chairs of the sub-groups, along with the other sub-groups of the Consumer and Citizen Engagement Working Group. These conclusions serve as the official input of the Working Group into the Commission’s consultation on the Action Plan. Furthermore, the takeaways and conclusions from the workshop, both on market integration of energy communities and digitalisation, are presented below in the Analysis and Recommendations section.

Conclusions from the workshop can be found in Annex II: [Conclusions from the BRIDGE Working Group on Consumer and Citizen Engagement for the European Digitalisation of the Energy Sector Action Plan](#).

## 7.3 Analysis and Recommendations

### Energy Communities – from their perspective

Most projects that involve energy communities as active participants are integrated in flexibility markets, peer-to-peer, balancing and day-ahead or intra-day markets or want to penetrate such markets.



The pilots of such projects cover a wide range of roles, such as service providers, aggregators, energy communities, energy market operators, flexibility providers and renewable energy producers. Most projects that engage energy communities interact with the following market actors: DSOs, TSOs, suppliers, service providers, aggregators and self-consumers and producers.

From a technical perspective, the main anticipated impacts of such projects' pilot activities include energy system optimisation, the penetration of RES in low voltage grids and the provision of flexibility services that allow to reduce grid congestion. Important impacts are also the increase of efficiency, autonomy and energy resilience, the empowerment of consumers in energy, an increase in distributed decision making, and long-term goals to contribute to a decarbonised and sustainable energy system, and improving security of supply. With regards to the pilots' impacts to the energy markets where they operate, most pilots of the questioned projects aim to create local flexibility markets with more actors participating in them. However, the regulation in different countries was highlighted as a barrier to the creation of such local flexibility markets.

In most cases, the legislation applicable to the pilot sites is the regulatory framework dealing with electricity and heat and the power system in general. At the EU level, the CEP is mostly relevant, with a focus on the RED II and IEMD. In particular, rules apply for self-consumption, energy communities, incentives related to PV production, balancing markets, demand aggregations and VPPs. The GDPR is also very relevant, as the pilots need to be in line with its requirements. However, in several cases, there is regulation missing or there is lack of transposition of EU provisions, which constitutes a barrier for the pilots' work, while there is also still a lot of difference between the national legal regimes. In cases where there is no existing regulatory framework in place, regulatory sandboxes were proposed and used as a space that allows the pilots to test new concepts.

The main regulatory challenges that several projects face in their pilots can be summarised as follows:

- a. Changes in existing legislation, or restrictive legislation for energy communities (e.g., in Switzerland all users must be connected by the same LV line, which makes the creation of energy communities very complex and potentially expensive);
- b. Lack of/incomplete transposition;
- c. Lack of incentives in general and specifically for both the DSOs and prosumers to establish a flexibility market or for cross-sector integration;
- d. Licensing requirements and long and complex administrative procedures;
- e. GDPR limitations;
- f. Lack of specific legislation for the context of small-scale outermost islands;
- g. Data privacy and access to energy price and smart meter data;
- h. Peer-to-peer trading legislation;
- i. Challenges connected to allowing the distributor to act as enabler of distributed resources and allowing the distributor to directly purchase flexibility services from distributed resources;
- j. Differences of regulation between countries;
- k. Lack of consistency in regulation;
- l. Lack of regulation on accessing interfaces of devices of 3rd parties;
- m. Static tariffs;
- n. Existence of national regulation that allows aggregators to provide DR services mainly to small prosumers and regulations that allow peer-to-peer trading in local energy markets; and
- o. Implementation gaps between energy sector and cybersecurity.

The challenges that were listed as most excessive were long, complex administrative procedures, bureaucratic hurdles, and incomplete transposition of EU rules on energy communities into legislative and regulatory frameworks.

The situation with the national regulators really differs depending on each country. In the Netherlands, the regulator seems to have a good understanding of energy communities, though they are at the process of changing legislation that still needs further implementation. In Spain, the regulator has a good understanding on the topic, but is having problems with including in the regulation all the requirements for the different actors (distributors, retailers and promoters). In Switzerland, the regulator has also a good understanding, but drafting regulations



that consider all involved actors is complex. Finally, in Sweden there is low to moderate understanding, discussions mostly revolve around allowing additional grids to be built between nearby buildings. In some cases, the regulators don't seem to understand energy communities at all. Also, it is rare for a regulator to have established a process to monitor areas where regulation for energy communities could be simplified. In some cases, consultations with relevant stakeholders or regulatory sandboxes are used as tools to improve existing legislation.

### Perspectives from other market actors

In the BRIDGE questionnaire the participating projects were divided into two main groups. Firstly, projects involving energy communities and secondly, projects that were mostly focused on building digital energy services for consumers. In this chapter the perspective of the service providers regarding the regulative framework is presented. The market actors from this group of R&I projects are active in flexibility markets (LV, MV, HV level), peer-to-peer, balancing and day-ahead or intra-day markets and self-passive balancing.

The pilots of such projects are planning to take up a wide range of roles, such as virtual energy storage service providers for the DSO, self-consumption optimiser, demand side flexibility provider, local energy market operator, energy buffering agent, energy managers, aggregators, flexibility providers and energy producers. All projects that are building the services interact with the DSO while in addition, most projects also engage with the following market actors: TSOs, service providers, aggregators and self-consumers and producers.

From a technical perspective, the main anticipated impacts of such projects' pilot activities include energy system optimisation, the penetration of RES in low voltage grids, and the provision of flexibility services that allow for grid congestion reduction. Important impacts are also reduction of costs of flexibility management tools, and increased quality of such toolboxes. With regards to the pilots' impacts on energy markets, most projects hope to increase the importance of the local flexibility markets. However, in different countries it was highlighted that regulation is still a barrier, as DSOs are not allowed to organise a local flexibility market where the services could be deployed.

In most cases, the legislation applicable to the pilot sites is the regulatory framework dealing with consumer privacy, such as GDPR rules. On all other aspects, there are countries with clear legislation for local flexibility market services and countries with no existing regulatory framework for the pilots. For example, in Switzerland, there is a clear regulation for services as P2P energy transaction and flexibility management. On the other hand, in Portugal there is no regulation for services for smart charging and V2G for local flexibility markets. Furthermore, it is brought out that there is lack of standards for LVDC and low MVDC voltage level operations.

The main regulatory challenges that several projects face in their pilots can be summarised as follows:

- a. Changes to existing legislation or no legislation in place;
- b. Missing technical standards;
- c. GDPR limitations;
- d. Access to energy price data and smart meter data;
- e. Differences in regulation between countries;
- f. Lack of regulation on accessing interfaces of devices of 3d parties;
- g. DR and flexibility not yet well regulated;
- h. Lack of regulation for local electricity markets;
- i. Regulations of island operations;
- j. DSOs are not incentivised to participate in flexibility solutions;
- k. Regulatory constraints for individual consumer and prosumer level engagement; and
- l. Lack of standardisation, licenses and other tender processing.

The challenges that were listed as most excessive are the long and complex administrative procedures and bureaucratic barriers, and the lack of regulations and standards in general.

There is a belief by respondents that the regulator does not yet have a full understanding of energy communities, although awareness is increasing gradually. Nonetheless, there are few countries that seem to be more advanced in terms of regulating and supporting energy communities: Greece, Portugal, Spain and Switzerland, Croatia and Italy.



## Takeaways from BRIDGE Workshop on Integration of energy communities into the market

During the workshop that was held in January, a number of projects presented pilots developing new activities for energy communities.

First, **Ana Rita Antunes, from Coopernico (representing the COMPILE Project)** presented a collective self-consumption project being developed in a condominium in Lisbon, Portugal. They have been collecting consumption profiles of over 130 households and have been talking with the DSO about the methodology for collecting consumption data. The project plans to construct a 10 kWp solar PV installation. The General Assembly for the condominium has been used as the basis for creating a renewable energy community, which voted to approve the project, the model for sharing production/return on investment, and internal regulations for the project.

However, there are issues around whether the internal grid within the condominium separating different dwellings is considered part of the public grid. In the case of a positive determination, this would significantly limit the viability of the business model around the solar installation. There are similar problems in other Member States in the EU, for instance in Flanders, Belgium, and could be identified as a potential hurdle limiting the uptake of local energy sharing by renewable energy communities. Another barrier identified during the presentation was the slow process for getting the project approved. Coopernico registered the project in October, 2021, but had yet to receive any response.

**Rob Goudriaan (representing Renaissance)** presented an initiative in the Municipality of Eemnes, Netherlands, to enable peer to pool energy contracts in order to increase local consumption, reduce congestion, support investment in local renewables, and explore the financial benefits of participating in the market. It was mentioned that most participants prioritise sustainability over financial gain, which contributes to a high amount of trust among the participants. From a technical perspective, smart meters being used in the project are described as quite mature and helping to ease technical issues.

Among the challenges faced by the project, COVID was mentioned as significant in terms of difficulty in keeping the attention of participants. On the business case side, focusing only on the energy bill was identified as unsustainable as an interesting proposition, and that it would be better to focus more on renovations, battery storage, or other subjects related to energy and sustainability. The presenter also identified the risk of the initiative becoming marketing for energy suppliers.

**Nele Ivask (representing Creators)** presented a pilot project in Tartu, Estonia, which will combine PV installations on multi-apartment and multi-functional buildings. The project will eventually test collective self-consumption and internal balancing, along with EV charging and storage in order to create a micro-grid between the participants. In order to involve citizens in the project, those living in the apartment complex hosting the solar PV installation created a cooperative, developed its statutes and is working on the operational/financial model. There is still a question of whether the city will become a member, but cooperation seems to be a popular idea, and there have been several workshops held with citizens.

In terms of the problems identified, there are still fears and hesitation by citizens. Furthermore, the DSO has no experience with micro-grids, although it is now collaborating with the project. There is also no legal framework in place yet, leaving questions around the business model. For now, the project is installing data transmission equipment and continuing the campaign to get citizens involved in the project.

**Benjamin Georg Petters** (representing Platone) presented a pilot from Twistringen, Germany. The pilot aims to test the effects of collective self-consumption and see how energy communities can contribute to efficiency and hosting capacity of locally-generated renewable energy, through the provision of flexibility in the low voltage network. The energy community that is being developed through the pilot brings together households, the local council, as well as a grid advisory board. Some of the challenges the pilot has experienced are described further in the breakout session 1 section below.

### Breakout Session 1



There are a number of significant legal and policy barriers in the countries where pilots are being conducted. In Germany, for instance, regulation does not provide explicit info on energy communities. The general law says that people are allowed to form associations, but does not say something for energy communities. From a financial point of view there is no incentive to form an energy community. There is no legislation that would prevent collective self-consumption, but no regulation to incentivise it. The current framework gives disadvantages to households to practice collective self-consumption, and they are instead incentivised to practice at individual level.

This is very similar to issues experienced in Croatia. The legislation is mixed up between renewables self-consumption and energy communities. Net billing is available to individual households, and they have no reason to join an energy community. If they are interested in doing so, the problem is economics. In Croatian legislation on energy sharing, energy communities can share energy, but they still have to pay all grid fees. Therefore, even if they are only using the low voltage grid, energy communities have to pay the whole amount.

In Estonia, there is still no legislation on energy communities, and they are still treated the same as any other producer. The authorities are currently preparing the transposition of the two energy community definitions, and hopefully it will be ready soon. The main problem right now is the grid and problems around flexibility. The grid operator does not have experience with this, and there is only one big monopoly electricity provider, and this is the main problem.

One issue identified was that at the moment, for instance in Germany, flexibility at DSO level is still not foreseen. Existing national legislation does not allow the DSO to be compensated for using market-based approaches. The regulator gives money to the DSO to invest in grid work. Unless they change the regulation and the DSO is compensated, then it is not going to happen. There are many projects implemented in the region there focusing on implementing flexibility markets and all investigated positive effects for providers of flexibility, as well as the DSO and TSOs. This concern was shared by pilots from Estonia.

Ultimately, the main barriers identified in the session are:

1. The lack of incentives and barriers of collective self-consumption;
2. The lack of clarity and no existence of flexibility markets at lower voltage levels;
3. The lack of clarity around requirements imposed by system operators, which are not feasible for energy communities; and
4. Administrative hurdles to set up energy communities are extremely complicated and often stand in the way of action.

## Breakout Session 2

A central notion in delivering social acceptance is trust. Trust will be tantamount in encouraging people to uptake digital tools related to the energy sector. If they do not trust the technology, or the companies behind it, they will not engage and they will be opposed to providing their data. A couple of factors were identified as being key to building and maintaining trust of households. There is a need to ensure energy communities have an adequate democratic/participatory framework for participants. There are many examples of initiatives where citizens are able to invest, but do not have any say in how the project is implemented, in particular around how data from members/participants is used, shared, protected and secured, etc. It is becoming clearer through experience that simply giving citizens the ability to invest won't cut it.

There are many challenges when it comes to the uptake and full use of digital tools by consumers. It is difficult and takes a lot of effort and time in order to get people fully connected to digital tools. This requires continued engagement of people. For example, setting up a consumption profile to enable energy sharing can take up to one year. People have different profiles and starting points when it comes to their relationship with energy – most do not have a relationship. As such, while it may not be difficult to engage consumers, it is often difficult to keep them engaged. Therefore, making sure consumers have information, training, and access to knowledge sharing will be a prequalification for the successful rollout of digital tools. There may be a need for specific rules for formatting so users can share experience and implementation on the creation of consumer profiles in particular.

## Breakout Session 3



Democracy is not about everybody agreeing but everybody having a choice. Democratisation is also about creating ownership, which can help bring citizens along in all aspects that need to be addressed in fighting climate change, for instance behavioral change around energy usage (e.g., energy savings measures).

In countries where energy communities are relatively new, there is an underlying tension between ensuring democratisation and participation from members that are more interested in a return on investment. For instance, in Portugal, they are seeing first local energy community initiatives being started by investors from outside the energy community. And yet still, for individual citizens it is hard to understand complex energy communities. This challenge becomes more pressing the bigger the community will get. Furthermore, if more projects end up getting started by investors, citizens may not be sure if they can trust the initiatives.

Thus, an issue to be cognisant of moving forward is whether and how larger investors should fit into the framework of energy communities that are based on democratic participation. There will be a problem that private investors would like to have more power to decide, but at the same time if this were allowed the energy community would essentially become a traditional company. This issue needs to be well-thought out before developing an energy community. Beyond a one-member-one-vote approach to decision making in energy communities, there is a need to further investigate different types of governance or organisational models, for instance around providing security to investors as members or partners without compromising democratic decision-making procedures.

Voluntary participation is also an issue that needs to be monitored closely moving forward. Should community members have the right to leave tomorrow, or should mechanisms be in place to make sure that the energy community is stable and investment responsibilities are met? Cooperatives are putting in place some obligations for staying in the organisation to ensure financial stability. To ensure that you are ensuring continuous participation, and to ensure inclusion, free participation, or obligations to participate through contributions of effort could be explored as alternatives to time-related financial participation requirements.

## Recommendations

A recurring theme from the project responses was the lack of transposition of the EU provisions for energy communities, which constitutes a barrier to their work in the pilot sights. Thus, a recommendation would be for Member States to transpose these provisions and create enabling frameworks for ECs to be able to participate in the market without discrimination.

To ensure buy-in from citizens, we recommend that national legal frameworks for energy communities ensure democratic ownership, control and decision-making to facilitate trust in the concept of energy communities. The tension that can exist between ensuring energy communities are open and democratic on the one hand, and including more professionalised members who are more motivated by a return on investment, also needs to be addressed. Different mechanisms to ensure democratic participation should be explored.

The need to remove burdensome and complex administrative barriers for the development of ECs was highlighted as a priority. Changing, and incomplete regulatory frameworks, were also highlighted as a barrier for the development of local flexibility markets. To address this, we recommend for Member States to remove legislative barriers and allow for different actors to participate in such markets.

National Regulators will be responsible for a lot of the technical details and regulations around energy communities. The differing levels of understanding about energy communities amongst energy regulators is a hurdle to develop proper and stable regulatory frameworks. As such, this understanding needs to be improved. These clarifications will allow regulators to create coherent regulatory frameworks for energy communities, to establish processes to monitor the impact of the legislation, and to enable the simplification of those frameworks when necessary.

## 7.4 Next steps



Aside from further exploration around better understanding and communicating around the challenges of setting up different organisational forms of energy communities, we recommend that further work focus on developing relationships between energy communities and different market actors, in particular DSOs.

It was clear from this year's work that energy communities want to provide flexibility services to grid, that there is serious interest from service providers to help facilitate this, and that even DSOs are interested. However, a lot of barriers remain that hinder further progress on the ground and need further exploration. For example, there is a need to further explore the barriers to unlocking flexibility at the local level by ECs. As this year's work showed, many legal and regulatory gaps remain, and these issues need to be further monitored.

There is also a need to facilitate better understanding between DSOs and energy communities. For instance, there is still room to improve DSO's understanding of the added value of energy communities, as well as the organisational models that they utilise. On the other hand, there is also a need to better communicate how DSOs can help ECs to integrate into the energy system and the market, and to clearly communicate expectations that DSOs have from energy communities. Beyond understanding each other, there is also a need to explore ways that DSOs and energy communities can develop ways of working, for instance through the development of network planning.





## 8. Chapter IV – Smart tools

Authors: Louise Birch Riley, Evangelos Rikos, Stanislas d'Herbemont

### 8.1 Scope of the work

The objectives of the subgroup were to explore the engagement of consumer-users in the design of Smart Tools, looking at user-centric approaches and methods, as well as to investigate the incentive structures used by projects to motivate use of the Smart Tool and facilitate certain behaviour and decision-making.

The aspect of diversity was included in both topics to understand to what extent projects consider diversity in the approach and engagement of consumer-users, considering also inclusion of more vulnerable groups in the design of the Smart Tool and its incentives.

The choice of topics is rooted in the gaps identified by the 2020-subgroup. Here, the focus was on creating a list of technology tools that support consumer participation, identifying target audience, purpose, strategy and possible gaps. This work revealed a need for the exploration of more incentive structures away from individualistic incentives and a need for more diversity of user profiles for tools. Additionally, a people-centric approach was recommended, allowing for co-construction processes.

The gaps can be summarised by the following:

Lack of user-centric, people-centred development approach to tools

- Already several mature tools for engagement of consumers with a top-down approach
- Underrepresented: co-design workshops, more people-centric solutions, iterative evaluation
- Lack of tools that include a user-centric approach and supporting a partnership with the consumer

Lack of user and incentive diversity

- Stereotypical profile of users speaks for a more inclusive development
- Volunteering prevents from diverse and inclusive samples
- Bias might damage the relevance of the tools developed
- Lack of incentives beyond the individual

The 2021 Smart Tools subgroup wanted to assess the status of these gaps and extract new, innovative approaches and methods which can help further support an inclusive, people-centred approach.

### 8.2 Methodology of work

Initially, the subgroup worked on updating and reusing the existing questionnaire (canvas) to collect insight but joined instead the collaborative effort of the Consumer and Citizen Engagement Group to create one shared survey.

The subgroup included a set of questions which were framed based on the identified gaps from 2020 work and the specific interest of the 2021 subgroup on the topics:

1. User-centric, people-centred development approach to Smart Tools
2. User and incentive diversity in the involvement



Since the group researches the use of Smart Tools, the analysis is based on the projects stating that they develop and/or deploy Smart Tools. For this purpose, the subgroup defines Smart Tools as:

- Digital (e.g., applications), physical (hardware devices) or a combination
- Intended to be used by consumers, prosumers or any other kind of end users of energy
- Interactive in the sense that the user is aware of some information that the tool can provide and they can respond/react to this information.

While the carrying factor for the analysis has been the survey responses, follow-up research, interviews and questionnaires have been conducted for some of the Smart Tool projects that state a high level of user involvement in all stages (research, development, test/evaluation) and/or a high degree of diversity in the engagement of users and/or diversity in the incentives. The purpose was to further explore the approaches and methods used. Where relevant, other insight from the collaborative activities within BRIDGE during the reporting year has also contributed to the analysis.<sup>[1]</sup>

<sup>[1]</sup> Workshop 17.01.22: 'Citizens at the center: BRIDGE Workshop integration of energy communities into the market' organised by the subgroup on organisational models and workshop 01.02.22 on consumer engagement approaches and prosumer business models organised by TwinERGY.

## 8.3 Analysis

Around half (48%) of the responding projects deploy a Smart Tool. The projects are naturally 'close' to the consumer, operating within funding topics: Demand response, energy islands and distributed grids.

### User-centric, people-centred development approach to tools

Analysis of the responses related to Topic 1: 'User-centric, people-centred development approach to tools' yields the following results:

#### The majority of projects engage the consumer/prosumer in the design process

The analysis shows that the majority (64%) of the projects engage their users in the design process of the tool from some, high to a very high degree, with the latter indicating that the user has co-created the tool.

The remaining projects engage the consumer to a lesser degree which might be explained by the fact that the tools are already developed or have a lower complexity/level of user interaction e.g., hardware with a simple user interface and thus do not aim at considerable user involvement in the design process.

#### The consumer/prosumer is mainly involved in the test and evaluation phase

Almost all responding projects state that they involve the user in the test and evaluation phase. Some also involve users in either research or design phases and a limited number of projects state that they involve the user in all three phases.

Those projects that only involve users in the evaluation and testing have Smart Tools that are developed beforehand or have an educational purpose. The projects that involve the user in all three phases also state that the user is engaged to a high/very high degree.

#### A mix of user-centred methods is used

The projects use many different methods to involve their consumer-users. Figure x shows that the activities both include concrete tools (e.g., Think-alouds) and overall methodologies applied (e.g., Design Thinking Approach) with most activities taking place at the test and evaluation phase.

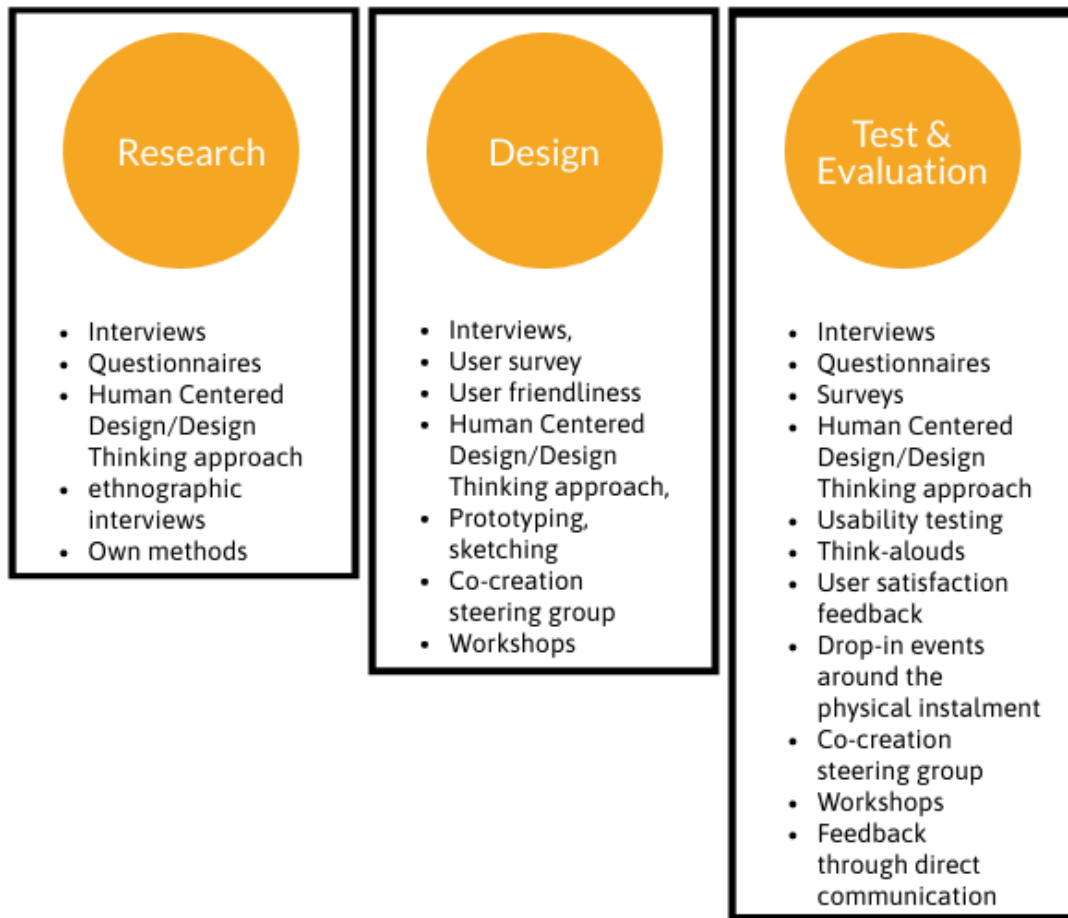


Figure 9. Design states and the engagement methods applied per stage

## User and incentive diversity in the involvement

Analysis of the responses related to Topic 2: 'User and incentive diversity in the involvement' has the following results:

### Several non-professional consumer types targeted

The majority of projects deploying smart tool(s) target more than three 'non-professional' consumer types, which cover: Individual users, senior citizens, apartment buildings/houses/families, student houses, local initiatives (energy communities) and vacation home residents.

'Non-professional' is here understood as less or no expertise in using the tool or similar tools which means that special measures might be required in the design, communication and/or training of the tool to make it usable and useful.

In the engagement of users, a majority of the projects state that they ensure diversity to a significant degree, with a couple indicating that they do this to a 'high degree'.

### Significant diversity of incentives

The survey shows a uniform distribution of incentives applied by the projects towards the use of Smart Tools, indicating that incentives are not only individually oriented (what is in it for me) but also include collective aspects. Incentives are: economic (financial benefit, economic growth, jobs); social (empowerment, be smarter, be energy



independent, be part of a community); technical (help balance the grid, prevent power interruptions) and environmental (contribute to the energy transition, have renewable energy).

The uniform distribution of incentives indicates that diversity in terms of user motivation is acknowledged by projects with consumers/prosumers being motivated by different reasons. The uniform distribution also shows that incentives beyond the individual are applied by projects as called for by the 2020 work.

The incentive structures were primarily (and naturally) applied to the preparation and implementation stages of projects, following the Stage of Change Framework. The Stage of Framework includes the stages: Contemplation (intention for action), preparation (reaching out), implementation (recruitment), maintenance (maintain operations).

## 8.4 Conclusions and Recommendations

Projects are very much directed towards their users in the development of technology solutions, acknowledging that success depends on how well the tool matches the targeted user's needs and values. However, when, how and to what extent the user should be involved to accomplish this goal differ according to type of call, project and tool. Additionally, the terms 'user-centric' and 'co-creation' carry many meanings, reflecting various design and research approaches, methods and levels of user engagement.

A few, user-centric approaches involve the consumer-user(s) to a very high degree in all design stages of the Smart Tool (research, development and testing/evaluation). They start with empathising with the user needs and regard the user to be a co-creator of the tool. Such human-centric approaches to innovation, in this case Design Thinking<sup>[1]</sup>, require a substantial amount of coordination, skill and time since they entail many iterations with users, researchers, project partners and pilot sites to ensure proper capture and transition of user needs and values at every design stage. These challenges can be overcome by for example:

- Combining the design stages in one activity e.g., ethnographic interview, prototyping and validation can be combined in one visit.
- Hiring local researchers to perform the user engagement activities, recording and transcribing interviews. This also overcomes the language barrier between project design team and pilots.

A certain disruption readiness is also necessary within the project since the tool is likely to undergo several transformations during the process.

Diversity is acknowledged by projects in the design of technology solutions, both through the identification of several consumer types that must be targeted as well as through various incentives which reflect an understanding of the different motivations, values and needs that a user can have in the interaction with the Smart Tool. In some projects, the Smart Tool is even an educational and training tool seeking to include people in energy-related programmes who are typically underrepresented.

Some projects take a step further, ensuring a wide representation of users in the actual recruitment and engagement activities. To gain greater acceptance, usage and adoption they suggest to:

- Ensure a diversity of users (age, culture, gender etc.) in recruitment and design activities, considering also the context of interaction (building, geography etc.)
- Adapt the interface/content to the user, to become personal, unbiased and inclusive, considering also changing usage over time. Start with a simple design, the individual challenge and then guide

<sup>[1]</sup> <https://www.interaction-design.org/literature/topics/design-thinking>



Where relevant, facilitate more design-driven approaches and methods in projects, allowing for technology concepts and solutions that are more dynamic and transformable for example by allowing less-defined technology concepts at proposal stage or by accepting possible tool-transformation as a result from user engagement. This way, projects are given the opportunity and time to fully engage with their consumers and citizens, putting people at the centre at every stage of the process while at the same time connecting it to the more technology- and business-driven processes familiar to projects.

Consider the aspect of ownership in the cases where the consumer or energy community are heavily involved in all design stages, becoming co-developers and -creators of the tool.

## 8.5 Next steps

One possible step for 2022 could be to create a guideline/methodology of best practices for projects or initiatives wishing to engage their users in the development of Smart Tools. Based on experiences provided by the various BRIDGE projects, the guideline could be a high-level step-by-step approach that would facilitate the implementation of Smart Tools in a harmonised way.

The guideline would also entail following up on the results of projects that have engaged the user to a high degree to evaluate the success of such engagement and the common claim that a user-centric, designing-for-diversity approach will result in better outcome, usage and adoption of Smart Tools and thus offer sustainability and business growth.

A third gap from 2020 work was also considered by the subgroup, concerning the lack of Smart Tools which focus on action from the consumer more than awareness creation. It would be interesting to further explore the reasons for the absence of such tools (technology and market readiness, user capability and attractiveness etc.).



## 9. Conclusion – Our concept of engagement and what is missing

The Consumer and Citizen Engagement Working Group has been focusing on the collaboration, understanding and management of consumer collective action as a tool to advance research and innovation at the European level. Our goal has been to better understand how consumers can take an active role in projects and what the change in this status also makes the relationship with project consortium evolve. Through the past two years of work, the group has identified several gaps in the understanding of the notion of engagement as it relates to private consumers. However, despite the short time frame of our work (2 years), we have seen a significant evolution on how projects interact and empower consumers to take an active role and co-create research results.

The main conclusion of our work is an understanding of the variations in the intensity of engagement of private consumer throughout the life of the project. We call this the **ladder of engagement in R&I projects**:

- **Information:** Consumers are often provided with an information about the goals and purpose of the project. This type of information is often provided during public events, in the best-case scenario with the support of local representatives and with the opportunity for the public to ask questions about the goals and impacts of the project.
- **Consultation:** Consumers are invited to share concerns, questions and ideas that might be taken onboard by the project partners. Those recommendations and demands are registered and addressed by the project consortia. The final decision on the implementation of those demands or recommendations remains in the hands of the consortium. In the best-case scenario, consumers participation is institutionalised throughout the project with a clear and continuous process.
- **Participation:** Consumers have a defined role and are invited to take part in the project roll out. This might be achieved through the involvement of collective action schemes or representative organisations. Through those mechanisms, consumers are able to make recommendations and have a deciding impact on the results of the project. Consumers participate the validation and testing of final results.
- **Ownership:** Consumers have a decisive impact throughout the entire project duration. Consumers (or their collective organisation) have an impact on the goals and objectives of the project through co-creation processes. They have a clear role in the project and will be awarded part ownership of the produced results.

Despite effort from project consortia, several barriers are still impairing the capabilities of projects:

- **The lack of recognition for a design driven approach:** the proposal process of Horizon 2020 has been mostly focusing on a result-based approach which can prevent projects from co-creating research results with consumers. The necessity for a pre-existing structure is often preventing projects from creating tailor-made solutions to the users and therefore often focus on economic or research interests rather than consumer needs. This lack of flexibility in the process is preventing project from adapting to the uncertainty of community building and the adaptability of project objectives to local needs. A process approach to the project development might allow certain projects to focus on community-driven results.
- **Project monitoring and indicators are focused exclusively on technological outcomes:** R&I indicators often focus on the TRLs and lack the indicators base to assess consumer engagement and community value. Projects often face difficulties to value the results impacts at the local level. Specifically, the stage of change approach might support a better understanding of the impact on social and community aspects of the project results.
- **The lack of common language and definitions:** throughout this two-year experience, the working group has often had to clarify to intension as well as the definitions that we are using to define collective action models and consumer interactions. The lack of consistency in the language used by call and proposals alike is often a source a misunderstanding and misalignments of project results.



- **The lack of final-user ownership:** based on the two previous conclusions, it is also important to note that the end users, or subject of the research in R&I project often lack the capability to take an ownership stake in the projects in which they are part of. Many of the consortia that we questioned struggle to keep consumer engaged throughout the project. Some communities are even facing “project fatigue” after being included in several innovation projects in a row. This is because the ownership of results is often kept by technical partners, leaving pilot sites without long term impacts on their communities.

Based on those lessons, we see collective action mechanisms (energy communities, self-consumer collectives, etc.) and representative mechanisms (municipalities, consumer organisations, NGOs) as key actors to promote the compatibility of research results with concrete impacts in the lives of consumers and citizens of the EU. We are looking forward to seeing more systematic involvement of those actors – and more advanced participative processes – to be included in the R&I programs.

Specifically, we recommend for a specific place to be given to social innovation and citizen sciences in the R&I programming at the European level. Innovation should not be defined only in terms of potential tool features, but also in terms of innovative approaches, governance models and usage.

The open and transparent dialogue process in our working group also allowed us to highlight the lack of knowledge building in BRIDGE projects. Often, projects running in parallel lack the opportunity to take advantage of one another’s experiences and lessons. The lack of flexibility in project deployment processes and lack of transparency around project failures and successes often result in projects lacking the ability to collaborate and take learnings onboard throughout the life-span of the project. This is a role that the WG CCE will continue to play in the future.

A number of key questions remain regarding the engagement of consumers and citizens. Specifically, continuous work on the capabilities of projects to integrate fully consumers through various governance mechanisms and tools remains to be explored. Enabling, deepening and empowering engagement is also dependent on the overall project structure within which projects have to implement their work.

We advise to explore more explicitly how overall project structure criteria and set-ups can enable more meaningful engagement so that consumers and citizens are empowered to contribute more impactfully to just and green energy transitions in Europe – and beyond.

New projects are coming up with innovative methods and tools to continue to further improve the integration, and EU R&I policy will also respond through the Digitalisation of the energy action plan.



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## ANNEX I

# Strategies of engagement: Handbook

A guide for engaging EU citizens in energy projects

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FEBRUARY 2022



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# 1. Introduction

The BRIDGE initiative aims to identify common issues faced by projects funded under the H2020 program in the fields of smart grid, energy storage, islands and Digitalisation that could potentially create barriers to innovation, and to support knowledge sharing among projects in order to provide conclusions and recommendations for further project exploitation. In this context, the present handbook aims to present the engagement strategies of 8 ongoing H2020 projects at different development stages to serve as a tool for new and ongoing BRIDGE projects interested in designing and developing a strategy of engagement. These case studies were part of the BRIDGE Consumer and Citizen Engagement Working Group (CCE WG) from April 2021 to February 2022.

The projects contributing to the handbook are:

- SENDER - <https://www.sender-h2020.eu/h2020/>
- GIFT - <https://www.gift-h2020.eu/>
- MERLON - <https://www.merlon-project.eu/>
- Platone - <https://www.platone-h2020.eu/>
- INSULAE - <http://insulae-h2020.eu/>
- eNeuron - <http://eneuron.eu/>
- E-LAND - <https://elandh2020.eu/>
- RENAISSANCE - <https://www.renaissance-h2020.eu/>



## 2. Engagement Strategies good practices

As mentioned in Chapter II of this report, stakeholder engagement has been given more prominence in the last years in R&I EU projects. BRIDGE projects have built strategies based on a combination of existing methods adapted to the needs of each project pilot. The projects have conducted interviews, surveys, workshops, informative sessions, focus groups, demonstration events, webinars, advertising and communication campaigns, or individual meetings with final selected consumers at different stages of the project engagement process. Different types of users participated in these engagement activities: from individuals at the residential scale to companies and public authorities. Strategies have been accordingly adapted to the target groups identified by each project. In this handbook we aim to unfold the different strategies implemented by the selected project based on the type of target group and pilot in order to provide specific case studies that could serve as guidelines for EU R&I projects. The projects analysed have been outlined as follows:

**GIFT started in January 2019 and is expected to conclude in June 2023 aiming to develop innovative solutions to allow islands to integrate a high share of renewables.** These solutions include virtual power system, energy management systems for harbour, factories and residencies improved forecasting models of power supply and demand and innovative storage systems integrating electrical heating and transport sectors. GIFT island pilots in Italy (Procida, Naples) and Norway (Harstad) are only targeting local businesses therefore one single strategy was developed by each country considering the local regulations and challenges. The first step was mapping of the potential prosumers-facilities that could be involved in the project for both pilots. Then the strategies slightly differentiate the following aspects:

- In Procida the project was promoted to the citizens via local media campaigns and sample customer cases were analysed both from a technical and motivational point of view. Then the municipality had to call for customers interested to join the project. This step was mandatory in order to respect the local regulation. Around 10 stakeholders have been engaged in this process.
- In Harstad the identified consumers were invited to a collective information meeting to capture the interest of the selected prosumers. A questionnaire and a letter of interest were distributed to identify the prosumers meeting the technical requirements. The collective meeting was important to understand that the project lacked real incentives for prosumers to join the project. Therefore, in the next phase of the strategy, the Norwegian partners focused on building the incentives and also adapting the communication to the local needs. An external communication agency was hired to build a strategy and adapt the translations from English to Norwegian, and most importantly to the local dialect. It was then decided that it would be more efficient to communicate about “being part of a community”, “contribute to the environment” in order to attract prosumers. Around 20 local business were engaged.

**SENDER** project started in October 2020 is currently applying a user centered approach via a) co-steering group (CSG) and b) co-creating workshop to engage **households, either individual users or families in pilots located in Alginet- Spain, Tampere & Espoo-Finland, and Weiz-Austria ensuring that customers collaborate in the design of energy services.** The strategy is based on segmentation study matching socioeconomic and cultural profiles with different sets of environmental values and incentives capable of triggering behavioural change. The study includes a survey among end-users and interviews with marketing and social sciences experts in consumer behaviour regarding environmental sustainability.

**MERLON** project started in January 2019 and until April 2022 will develop an energy management framework to holistically optimise the operation of local energy systems with a high penetration of variable renewable sources. MERLON introduces an integrated modular local energy management framework for the holistic operational optimisation of local energy systems in presence of high shares of volatile distributed renewable energy sources. Optimisation in MERLON applies to multiple levels spanning optimal coordination of local generation as well as flexibility provision to facilitate maximum integration of renewable energy, avoidance of curtailment and satisfaction of balancing/ancillary grid needs.

MERLON has developed a strategy centered around the creation of living labs in the two pilot sites in **Spain and Austria.** The Living Labs ´ activities involve known formats such as house visits, workshops, or events. MERLON tailored their approach and methodology to local and regional levels of the two pilots. **MERLON Living labs**



represent an ensemble of activities that aim to involve all stakeholders and end-users that are either participating in the project or are affected by its activities and conclusions. These users are companies, researchers, public organisations, users and other stakeholders. The MERLON living labs consist of **workshops, focus groups, surveys** in order to bring together the different targeted audiences and create a common space for exchange of opinions, progress evaluation, risk assessment and, if necessary, even corrective actions definition. A number of 20-30 citizens have been engaged in each pilot while the strategy could be easily extended to 50-60 people. MERLON Living Lab extends throughout the entire duration of the project from its start to M36. Therefore, it is intended to capture all stages of the framework evolution, from system requirements definition to deployment and impact assessment, and contribute as a “living” testbed. More details of their strategy can be found in the public deliverable [MERLON Living Lab Activities Planning and Evaluation Report](#).

**PLATONE** project started in September 2019 and will be developing and testing advanced management platforms in 5 demos (2 in Germany, Italy, Greece and Canada) to support grid flexibility and promote an open and non-discriminatory power market until August 2023. The project is currently working on the implementation of technical elements to the trial sites. The following strategy has been employed to engage potential users in the 3 locations (Germany, Italy and Greece- other 2 locations are only test locations):

- Capacity building workshops on customer engagement methodologies such as design thinking for all consortium partners
- Series of workshops in the trials, starting with a systemic workshop in each trial site with relevant stakeholder groups
- Engagement workshops with potential users of the solutions/results developed in each trial with focus on interactive work (mix of virtual and gamification approaches)
- Currently developing a “stakeholder characterisation template” which includes a list of around 40 stakeholder types, which will be described according to the experience made in the Platone project, but also circulated in ETIPs NET and BRIDGE projects to get it filled with valued information and experience from other projects dealing with stakeholder engagement.

Here are some selected types of stakeholders targeted in the “stakeholder characterisation template”:

Operators	Employees	Residential	Commercial	Providers	Energy community	Other	
Electrical distribution system operator (DSO)	Technical employee of utility or operator	Consumer	Consumer	ICT	Member	Energy trader	Association of municipalities
Operator of local/regional energy market	Commercial employee of utility or operator	Prosumer	Prosumer	Service	Operator	Electric vehicle owner	Association of energy suppliers
Operator of generation plant		Prostomer <sup>6</sup>	Prostomer	eMobile Service		Local administration	
Operator of Virtual PowerPlant (VPP)							

Table 1. Types of targeted stakeholders in PLATONE

<sup>6</sup>When the prosumer is provided with a storage system, they can accumulate the energy from the grid and reuse it in a second moment.



Table 2. Virtual workshop Italian demo playing the game of Platone

**INSULAE** project kicked off its activities in April 2019 and its expected duration is 48 months. The project aims to decarbonise EU islands by developing and demonstrating at its three pilots (Unije-Croatia, Bornholm-Denmark, Madeira-Portugal) a set of seven replicable use cases, the outputs of which will validate an Investment Planning Tool (IPT) that will be used by four follower islands to develop their action plans. The three pilots have applied strategies according to their use cases:

- **In Unije**, locals were initially engaged via a workshop in which questionnaires were distributed to acquire information on the electrical system services and condition, energy use and willingness to monitor and control energy consumption. A site [in Croatian language](#) was also created to support the engagement process.
- **In Bornholm**, within an Energy event a dedicated session involving local stakeholders (from administrative services, private companies related to sustainable energy and transport and universities) was organised in the beginning of the project to inform about the use cases. A survey similar to the one in Unije was distributed. In this frame, a demonstration site tour took place. The engagement strategy targeted at involving as many people as possible in using the installed EV chargers. To achieve this, the system with the battery and EV chargers was installed in an a publicly available location with high attendance and the service was offered free of charge.



Figure 1. Engagement in Unije includes site visits for adults (left) and educational workshops for minors (right)



Figure 2. INSUALAE partners visiting the installation site in Bornholm

- **In Madeira**, the strategy was designed according to the local partners' notion of the sensitivity of EV users to these issues of electric mobility, cost savings and decarbonisation. An introductory event was attended by about 50 representatives of local authorities, university of Madeira, order of Engineers and companies. [A microsite was developed for the project](#) and a [landing page with an animation](#) of the project activities (in Portuguese) was also developed.







Table 3. Madeira campaign for the engagement of EV charging system user

The main goal of the [eNeuron](#) H2020 project (November 2020–October 2024) is to develop innovative tools for the optimal design and operation of local energy communities (LECs) integrating distributed energy resources and multiple energy carriers at different scales. This goal will be achieved by considering all the potential benefits for the different actors involved, going from prosumers to system operators, and by promoting the Energy Hub concept, as a conceptual model for controlling and managing multi-carrier energy systems to optimise their architecture and operation. To ensure both the short-term and the long-term sustainability of this new energy paradigm and thus support effective implementation and deployment, economic, and environmental aspects are considered in the optimisation tools through a multi-objective approach. The technical solutions developed in eNeuron will be tested in 4 pilots located in Poland, Italy, Norway, and Portugal. The main user groups involved into the project are local initiatives (e.g., energy communities), cultural and educational building users, and municipality building users. There are also other key users which are specific for each pilot.

The key goal of the engagement strategy is generating awareness around the solutions and, more importantly the benefits, but also driving behavioural change, triggering new ideas, and fostering replication. In detail, this main goal can be differentiated in each pilot as described below:

- **Poland (city):** Showcasing good practices developed in public buildings to other building owners (similar in size and scope) to foster replication. Conveying the message that energy saving is important both from a production and a management perspective.
- **Portugal (Naval base):** Enabling energy (and fund) saving through general awareness/concern (. Engaging systems managers, so that coordinated and efficient use of inner Renewable Energy to internal industrial consumers occurs. Keeping interest of population along time, by triggering creativity, within the involved people, by gamification or challenges, to implement new energy efficiency measures regarding active or reactive power reduction to the main grid
- **Norway (Energy lab/Stadium):** Increasing the awareness necessary to change people’s behaviour and willingness to interact with new energy community services. Optimising local resources.



- **Italy (University):** Increasing awareness in Energy Transition not only of professors, staff and students, but also of other stakeholders such as families, municipalities, Regional Government, Industries.

**E-LAND.** E-LAND is a project that seeks to provide innovative tools for energy islands and energy communities to increasingly rely on locally produced renewable energy sources. The project has developed a toolbox for establishing and managing local energy systems, including technical tools, business model tools and community engagement toolbox, “Common Impact Model (CIM).” CIM is an engagement strategy that can be used as a part of planning for integrated local energy systems and energy communities. The aim is to involve local stakeholders or local community to planning and establishment of the local system from the onset, to improve participatory planning and local acceptance, or to engage stakeholder in active support of the initiatives established. The aim of CIM is to help to identify stakeholders who matter for the success of the project or who are affected by the solution to be implemented, assist to design the local energy solution in a way that it is compatible with local values and priorities as well as help local partners to create a strategy that will help to engage local stakeholders. The CIM model includes three steps or phases, each of them having their own tools for carrying them out:

**Phase I** includes data collection through community scoping questionnaires which can be carried out as interviews, focus groups or surveys. In this phase, the aim is to define a technological solution to focus on, to identify relevant stakeholders and to assess their views and values that will influence the long-term acceptance of the solution.

**Phase II** focuses on the analysis of the information collected in the Phase I, creation of a community profile, “community dashboard” and co-creation of future action with the local partner.

**Phase III** includes a production of a series of “tactical workbook” for a set of engagement recommendations with their respective objectives and indicators to be carried out and assessed. This phase is an iterative process in which recommendations can be carried out, assessed and further fine-tuned along the project. Similarly Phases I and II can be repeated at a later stage to ensure that the implementation is on a right track.

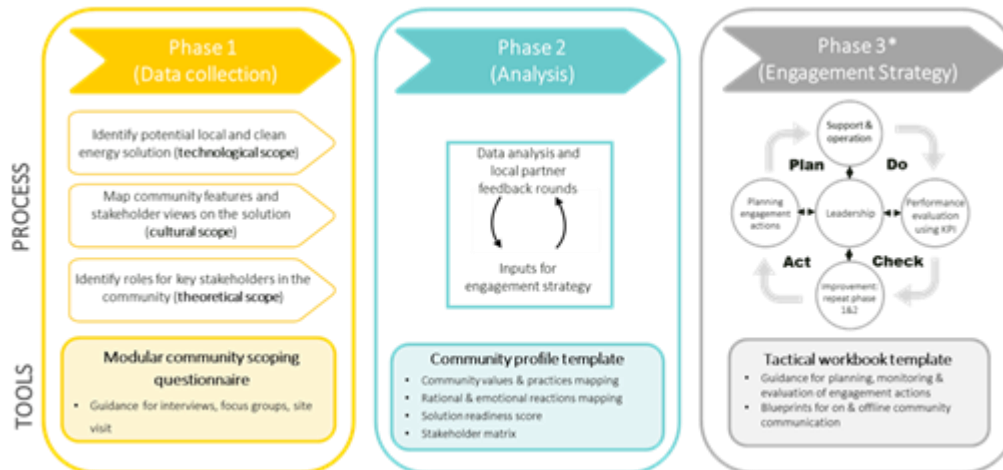


Figure 3. Common Impact Model (CIM)

The CIM strategy is modular and flexible, and it can be adapted to multiple areas and stakeholder groups. So far, CIM model has been implemented in a rural community in India, a technology park in Spain and a port in Norway.

**RENAISSANCE.** Renaissance aims to implement new business models and technologies supporting clean production and shared distribution of energy in local communities. The project will identify new business cases for local energy communities across Europe, utilising MAMCA community analysis tool. ReEnergise tool will be co-designed during the project lifetime, and it will be utilised to help to identify an optimal configuration of integrated and decarbonised local energy systems.

Renaissance utilises MAMCA (multi-actor multi-criteria analysis) tool as a strategy to engage and design engagement strategy for energy community building. The MAMCA method and online tool has been developed by



Vrije University Brussels research team, and it has previously mostly been used with sustainable mobility and logistics projects. The method allows for decision making over varied objectives of multiple stakeholders, as well as for creating mutual understanding through workshop discussions, making it a promising tool to be utilised for engagement for energy community building. During the project the research team has further advanced and detailed the process to adapt it to the energy domain.

The main objective is to **engage all relevant stakeholders from the start, to make sure their needs can be translated into the EC** design throughout the process and the result can have a broad base of support by all involved parties. By letting different stakeholders interact several times and explain their points of view to each other, empathy is created, and mutual understanding promoted, which facilitates later consensus building for the decision-making. The main tools are a survey for gathering input on the stakeholder objectives and the MAMCA tool. This last one allows for the weighting of objectives and the evaluation of potential EC alternatives by the stakeholders themselves in a workshop with ‘live’ discussions. The results are visualised in objective priorities graphs per stakeholder group and in scenario ranking graphs.

The process adapted for setting up energy communities is the following:

1. **REACH OUT:** contact the potential pilot site responsible/leader to explain the methodology and goals
2. **ONBOARD:** identify relevant stakeholders and energy market actors, including citizens, in collaboration with or by the pilot site leader
3. **INFORM:** inform stakeholders on what energy communities (ECs) are and what the engagement process will entail and what are the benefits
4. **COLLECT NEEDS AND OBJECTIVES:** send out the MAMCA survey to all stakeholders to identify their objectives for joining an EC
5. **DRAFT SCENARIOS:** draw up potential EC forms (‘EC alternatives’) for the site, based on collected energy consumption/production data, survey output and project leader meet-ups
6. **RANK SCENARIOS:** organise a MAMCA workshop with all stakeholders in which regulatory boundary conditions are explained, the survey results are discussed, stakeholders can attribute a weight to their selected objectives (according to importance), they can evaluate the proposed EC alternatives using the MAMCA software, and results of this evaluation are discussed
7. **REPORT:** Deliver a report of the workshop results

The strategy is suitable to be utilised for all stakeholders that are relevant when setting up an EC. Depending on the context this can be citizens, companies, public institutions, DSO, or local government. It is especially suitable for non-homogeneous groups/members. The strength of the MAMCA methodology lies in the fact that it gives every stakeholder an equal voice in the process. All different viewpoints and objectives are displayed and considered without prior ranking of importance.

The methods can be adapted depending on the size of the stakeholder groups. The MAMCA tool has a ‘mass participation’ option in case a stakeholder group has too many representatives to be all invited for a workshop. The process lasts around 6 months.

Within Renaissance MAMCA process has been applied for the set-up of an EC (a) in residential neighbourhoods (Eemnes, The Netherlands and Ve, Spain); (b) in a mixed/rural area (ski resort in Manzaneda, Spain); (c) in a university campus (Xanthi, Greece); (d). It has been partially applied in residential replication sites in Poland and India (ongoing processes). Within other EC projects the strategy has also been applied in 1 mixed use site, 2 industrial sites and 1 residential site in Belgium.

The MAMCA workshops within Renaissance have been positively evaluated by the participants. However, the project is ongoing, and more information will need to be collected to understand the extent to which MAMCA can help to support the set-up of long-lasting energy communities.

Pilot country	Type of setting	Type of users	N. of users	Engagement strategies/methods	Invitation/Dissemination
GIFT					



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<b>Italy</b>	Small island (Procida)	Local businesses	10	Analysis of sample cases as potential customers	Local media campaign Public invitation through the website to be aligned with regulations
<b>Norway</b>	One small, one bigger island		20	<b>1<sup>st</sup> stage:</b> collective meeting <b>2<sup>nd</sup> stage:</b> Individual meeting	Questionnaire, Letter of interest
<b>SENDER</b>					
<b>Spain</b>	Cooperative in a small town	Individuals, families	Workshop (WS): 22 Objective (O):100	Co-steering group, co-creative workshop Which include surveys and interviews	
<b>Finland</b>	Focused on EV charging points		WS: 9 O: 100		
<b>Austria</b>	Weisz region		WS: 17 O: 250		
<b>MERLON</b>					
<b>Spain</b>	Local energy community	Local communities (companies, researchers, public organisations, users)	20-30 per pilot	Living labs including workshops, focus groups, surveys. In the 2 <sup>nd</sup> phase, training activities	
<b>Austria</b>	Güssing district in Strem town				
<b>PLATONE</b>					
<b>Germany</b>	Twistring city: a battery block as an energy community	Many types from energy system operators to commercial and residential (private users), see Table 1.	40 per demo	Workshops: capacity building, systems operation, user centered	
<b>Italy</b>	Block of buildings with flats, PV and energy system				
<b>Greece</b>	Simulation of Tools and services, no local setting				
<b>INSULAE</b>					
<b>Croatia</b>	Unije island	Locals (permanent and occasional)	50	Kick-off meeting with local stakeholders Focus group, questionnaire	Local website Participation in Local festival
<b>Denmark</b>	Bornholm island	EV owners, living on the Bornholm island and coming to the island for holidays or other short-term visits	100 full EV charges during the first 1.5 month	Kick-off meeting with local stakeholders Installation of the system in location of high attendance Public launch event of the demo (battery- EV chargers). Free use of the service	Local and social media campaign, New charging station added on online maps Promotion of the service in conferences, workshops etc.
<b>Portugal</b>	Madeira island	Bidirectional charging (BC): Owners/users of NISSAN Leaf and/or NISSAN e-NV200 Smart charging (SC): Owners of 100% electric car compatible with	4 participants for BC and 25 participants for SC	Kick-off meeting with local stakeholders 1 public presentation and 2 webinars to present the project to potential user	Local website, newsletters



		CCS Combo or CHAdeMO and AC charging standards			
<b>eNEURON</b>					
<b>Poland</b>	City	local initiatives, cultural and educational building users, and municipality building users		Strategy not decided yet however it is expected to include: Interviews, questionnaires/surveys, and workshops	
<b>Portugal</b>	Naval base	System managers			
<b>Norway</b>	Energy lab/Stadium				
<b>Italy</b>	University				
<b>E-LAND</b>					
<b>Norway</b> <b>Romania</b> <b>Spain</b> <b>India (2 locations)</b>	Harbor University campus Technology Park			Common Impact model: 3 Phases P1: Data Collection (interviews, focus groups, surveys) P2: Data analysis P3: Strategy	
<b>RENAISSANCE</b>					
<b>Netherlands (Emmes)</b>	Residential neighbourhoods	Stakeholders relevant with the establishment of an EC (citizens, companies, public institutions, DSO, local government)	200 survey responses 6 workshop participants	multi-actor multi-criteria analysis method and tool (MAMCA)	
<b>Spain (Manzaneda)</b>	Ski resort		5 workshop participants		
<b>Greece (Xanthi)</b>	University campus		25 workshop participants		
<b>Auroville (India)</b>	Replication sites: residential neighbourhoods		212 reached,  106 surveys		
<b>Spain (Vega de Valcarce)</b>			53 reached, 38 surveys		
<b>Poland</b> <b>Beli Bartoka</b>			55 reached, 28 surveys		
<b>Szaserow</b>			158 reached, 157 survey		

Table 4. Engagement matrix of BRIDGE projects' use cases



### 3. Barriers

Various barriers were encountered and mostly successfully mitigated during the end user engagement activities in the BRIDGE projects who responded to the survey. These barriers ranged from very small details up to more abstract concepts. To analyse the results, some common denominators were identified, and the identified barriers were grouped under those, as shown in figure 4

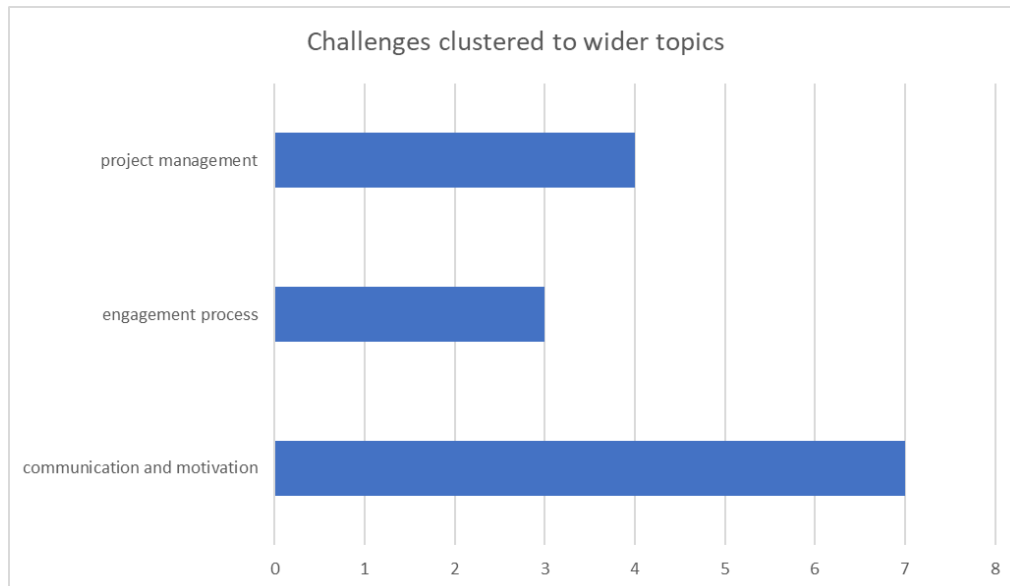


Figure 4. The identified challenges clustered to wider topics

As it can be seen, most barriers were related to communication and motivation. This is partly influenced by the unfortunate pandemic situation we are undergoing during the preparation of this report. Thus, we can say it is important to be able to have face-to-face interactions during the engagement process. However, most projects had found creative ways to use virtual platforms, phone calls, online workshops etc to overcome this barrier.

The pandemic was not the only barrier under the communication and motivation topic. Issues related to communicating technical topics in an understandable way to end users and how to motivate their interest in participation were also mentioned. Especially here, the help of social science experts was seen valuable to act like a translator between the technical experts and end users. Regarding end users' interest, it was also mentioned, that it is challenging to keep the discussions in the project scope, because some end users wish projects to solve also other challenges in the area. For this, using moderators to steer the discussions were seen as a proper way to mitigate.

Regarding project management, barriers were identified in complicated administrative processes and lack of use of the end user feedback. The latter especially is important, as there is no clear way to overcome it yet identified. To avoid this barrier, it is recommended to explain the benefits of the engagement also internally in the project team. Lack of attention in resource allocation for end user activities was also reported as a barrier, Issues were both related to underestimating costs for large scale engagement activities, like surveys or events as well as not identifying the needed third-party actors and the cost connected to using these in connection of the engagement process.

Third common denominator was engagement process itself. Barriers were identified related to stakeholder recruitment criteria not being well defined, difficulties in recruiting the end users as well as implementing the engagement strategy itself. These issues show the lack of maturity in this field and are mostly mitigated by better defined strategies and processes as well as more research and development on existing strategies, to make them more easily adjustable to different locations. Additional, use of local ambassadors was seen important in end user recruitment especially in the rural areas.



## 4. Success factors

Regarding success factors of utilising strategies for engagement, the following factors generalised here for practical reasons were reported.

- reaching to broad range of stakeholders
- receiving user feedback to concepts or technology
- mobilising local businesses around a local energy project
- information sharing for citizens about the energy system and their role in it
- increasing collaboration between the local DSO and the municipality
- increasing collaboration between the local DSO and its' customers
- successfully utilising financial incentives
- improving acceptance of the project
- matching end user needs with solutions developed
- providing better communication with end users and technology developers
- increasing the utilisation of end user feedback
- increasing the end users' interest in project events
- increasing the long-term commitment from the end users
- influencing behaviour of consumers

These responses show the value of structured engagement activities, even if many responders reflected from preliminary results.

Regarding measuring the success, answers varied a bit more. Some respondents described needs for softer KPIs to measure properly the impact. In addition, we must understand that lot of the success arising from engagement activities is contributing to success of technology related KPIs, thus it is difficult to evaluate the separate influence.

The used KPIs are presented in a list below:

- Number of end users reached by the systems developed in the project
- Percentage of community members involved
- Number of changed consumption patterns of consumers
- Stakeholder engagement
- Number of pilot activities
- Number of completed feedback sheets received from customers
- Numbers of post-pilot surveys received
- Attendance in pilot activities
- Number of invited participants per workshop
- Number of attendees per workshop
- Level of applying the end user feedback to the further work in the project
- Number of workshops taken place

As it can be seen from the list, these KPIs are mostly one dimensional, and traditional. One point for future improvement in this field could be to carry out future work on improving the KPIs for measuring the success of engagement activities. As stakeholder engagement itself is not usually the target of the project, but rather a tool for reaching out to specific target groups. Specific attention should be paid to the KPIs to be measured to qualitatively evaluate the satisfaction and experience of target groups and to keep their interest and engagement over time.



## ANNEX II.

# Conclusions from the BRIDGE Working Group on Consumer and Citizen Engagement for the European Digitalisation of the Energy Sector Action Plan.

The BRIDGE Working Group on Consumer and Citizen Engagement was requested to provide inputs on the future Digitalisation of the Energy Sector Action Plan (Action Plan) prepared by the European Commission. This input was to be based on a questionnaire sent to all BRIDGE projects which collected answers on 4 key topics: User types and strategies of engagement, group building and engagement techniques, governance building and integration of energy communities in the energy market, and finally smart tools development and incentive strategies. This survey was completed by 33 project consortia.

Additionally, on the 17<sup>th</sup> of January, 2022, the sub-group on organisational and governance models of the Consumer and Citizens Engagement working group of BRIDGE organised a workshop with 73 consumer engagement and demonstrators activities' representatives from 35 BRIDGE projects and three EC officers participating. One of the aims of the workshop was to provide input into the Commission's Consultation on the Action Plan.

During the workshop, three breakout sessions were held: 1) Exploring opportunities and challenges for the rollout of energy communities within the ongoing transposition process; 2) existing challenges and opportunities in the use of digital tools; and 3) how to strike a balance between professionalisation and democratic decision-making and citizen engagement. Each of these breakout sessions reported back to the workshop attendees.

The following takeaways, or conclusions, are for the Commission to consider as it finalises the Action Plan on how it can empower energy communities and consumers at large, help them organise, and participate in the energy transition.

### **1. Conclusion 1: Members of energy communities need to be able to maintain rights to own and control their data. The Action Plan should support the maintenance of rights of members of energy communities to maintain ownership and control of their data, as well as democratic decision making**

A central notion in delivering social acceptance is trust. Trust will be tantamount in encouraging people to uptake digital tools related to the energy sector. If they do not trust the technology, or the companies behind it, they will not engage and they will be opposed to providing their data. A couple of factors were identified as being key to building and maintaining trust of households.

#### **1.1. Ensuring ownership and control through democratic governance frameworks**

There is a need to ensure energy communities have an adequate democratic/participatory framework for participants. There are many examples of initiatives where citizens are able to invest, but do not have any say in how the project is implemented, in particular around how data from members/participants is used, shared, protected and secured, etc. It is becoming more clear through experience that simply giving citizens the ability to invest won't cut it.

#### **1.2. Provide the opportunity for consumer involvement in innovation processes from design to ownership**

To build trust, and obtain greater acceptance and use of digital, green energy tools, engagement of consumers should be ensured from the early stages of development. The action plan should support more design-driven,





user-centric approaches to innovation, connecting them with the traditional technological - and business-driven processes. In order to support engagement, final ownership rights should be provided to end users allowing for control over innovation outcome. That ownership can be secured collectively through energy communities or other collective action mechanisms.

### 1.3. Safeguarding decision-making by citizens and encouraging investment

There is a growing tension between new members that want a return on investment in energy communities versus people who are interested in democratic, local grass-roots approaches to social innovation. More often, new projects are being started by investors, so citizens are not sure if they can trust them. There is also an issue that as energy communities get bigger, communication between the managers of the energy community and the members becomes more difficult.

There is a need to ensure that as more investment flows into local energy markets, the democratic control in energy communities is maintained. There is a need to explore options (including tradeoffs) for how larger investors and market actors can participate (or not) in, or partner with, energy communities while ensuring decision-making control lies with the main beneficiaries of the project – namely households and small business – as users.

## 2. Conclusion 2: There is a need to increase skills of consumers so that they are able to fully exploit the opportunities presented by different digital tools for energy

There are many challenges when it comes to the uptake and full use of digital tools by consumers. It is difficult and takes a lot of effort and time in order to get people fully connected to digital tools. This requires continued engagement of people. For example, setting up a consumption profile to enable energy sharing can take up to 1 year. People have different profiles and starting points when it comes to their relationship with energy – most do not have a relationship. As such, while it may not be difficult to engage consumers, it is often difficult to keep them engaged.

Therefore, making sure consumers have information, training, and access to knowledge sharing will be a prequalification for the successful rollout of digital tools. There may be a need for specific rules for formatting so users can share experience/implementation on creation of consumer profiles in particular.

## 3. Conclusion 3: Choice and competition needs to be ensured in the market for digital tools and platforms connecting energy communities to the market

As most energy communities are focused on engaging citizens and consumers, they generally focus less on the development of digital tools themselves. As such, energy communities can be seen more as users than innovators of digital tools or platforms that enable their engagement with the market. There is a need to ensure that as the market for digital tools and platforms matures, competition is maintained so that energy communities themselves are able to exercise choice to collaborate with other market actors that share their values, particularly around how data is collected, stored and used. There should also be options available for energy communities to set up their own platforms, assuming they have the interest and competence to do so.

European citizens should be supported to get involved at various levels of the development processes of those platforms, and provided a right to control the outcome based on their involvement. Many innovation projects currently involve users throughout the development process, but this involvement is limited to basic information due to the lack of actionable control mechanisms for users in the development process.

There is also a need to maintain trust along the value chain of the energy system. For this, there is also a need to ensure proper oversight and monitoring of issues such as interoperability, independent data storage, market concentration, and other potentially discriminating business practices by technology and service providers.

## 4. Conclusion 4: Clear and stable regulatory frameworks for energy communities at national level still need to be completed to enable new business models



The lack of clear and stable regulatory framework currently prevents market actors from developing the innovative business models enabled by the digitalisation of energy markets. This is especially true for energy communities. Many Member States are behind in the process of transposing the EU provisions on energy communities, and there is still confusion among different concepts included in the Clean Energy Package, particularly around energy sharing, collective self-consumption, and the organisational nature of energy communities. There is a need to continue strengthening understanding at the national level, particularly of DSOs and regulators, around the concept of energy communities and their potential benefits. Clarification of responsibilities, as well as balanced and appropriate incentive structures, need to be further developed in order to interest citizens to invest in an energy community, and to allow energy communities to create value, both for the grid and for their members.

## 5. BRIDGE Working Group on Consumer and Citizen Engagement

The BRIDGE working group on consumer and citizen engagement (WG4) has been established at the origin of the BRIDGE group with the following objectives:

- Segmenting, analysis of cultural, geographical and social dimensions,
- Value systems -Understanding Consumers,
- Drivers for Engagement,
- Effectiveness of Engagement Activities,
- Identification of what triggers behavioural changes (e.g., via incentives),
- The Regulatory Innovation to Empower Consumers.

In 2020/2021, the working group has taken a new focus, looking to support European R&I project with better understanding engagement through collective action. The group focused on understanding, strategising and organising collective actions of consumers and citizens. The working group has focused itself on getting “consumers” to “citizen”, meaning active members of a collective action scheme.



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