Platone

PLATFORM FOR OPERATION OF DISTRIBUTION NETWORKS

Platone

PLATform for Operation of distribution NEtworks

D1.5

Report on Workshops on customer engagement

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Abstract

The deliverable D1.5, titled "Report on Workshops on Customer Engagement," offers a comprehensive overview of the customer engagement workshops conducted under task 1.5, "Harmonization with Customers and Partners' Needs and Expectations," within Work Package 1 of the Platone project. The text describes the concept of a series of co-creation events focused on user interaction and complementary events centred around customer engagement. It outlines the conduction and the lessons learned from these events and how the findings have been impacted to project tasks fostering joint collaboration with other projects and cooperations in the area of customer engagement. With the project´s customer engagement activities, the consortium aims to effectively promote the use of project results, translating Research and Innovation actions into tangible value and societal impact through scientific, economic, political, or societal exploitation.

Keyword list

Stakeholder engagement, customer engagement, customer involvement, co-creation workshops

Executive Summary

"Innovation for the customers, innovation for the grid" is the vision of project Platone - Platform for Operation of distribution Networks. Within the H2020 programme "A single, smart European electricity grid", Platone addresses the topic "Flexibility and retail market options for the distribution grid". Modern power grids are moving away from centralised, infrastructure-heavy transmission system operators (TSOs) towards distribution system operators (DSOs) that are flexible and more capable of managing diverse renewable energy sources. DSOs require new ways of managing the increased number of producers, end users and more volatile power distribution systems of the future. Platone is using blockchain technology to build the Platone Open Framework to meet the needs of modern DSO power systems, including data management. The Platone Open Framework aims to create an open, flexible, and secure system that enables distribution grid flexibility/congestion management mechanisms through innovative energy market models involving all the possible actors at many levels (DSOs, TSOs, customers, aggregators). It is an open-source framework based on blockchain technology that enables a secure and shared data management system, allows standard and flexible integration of external solutions (e.g., legacy solutions), and is open to integration of external services through standardized open application programming interfaces (APIs). It is built with existing regulations in mind and will allow small power producers to be easily certified so that they can sell excess energy back to the grid. The Platone Open Framework will also incorporate an open-market system to link with traditional TSOs. The Platone Open Framework will be tested in three European field trials and within the Canadian Distributed Energy Management Initiative (DEMI).

With the activities reported in this document, the Platone consortium aims to reach out to society and show the impact and benefits of the funded research, development, and innovation (RDI) activities providing possible contributions to the energy transition. Maximizing the impact, replication, and exploitation of the solutions developed and tested in Platone requires defining effective stakeholder engagement strategies to ensure high levels of acceptance and transparency among the intended beneficiaries. Among these stakeholders, customers play a crucial role as their role is evolving in response to changes in the energy system, particularly with the proliferation of renewable energy generation and the increasing need for flexibility. These changes create new opportunities for customers to participate in flexibility markets, which, in turn, represents a new form of customer engagement in the energy system.

The Platone project focuses on engaging customers as active participants, including e.g., residential and small commercial customers, to unlock flexibility in distributed energy systems. Therefore, one of the operational objectives of the Platone project is to define customer engagement strategies. The workshops on customer engagement play a crucial role within the customer engagement activities and aim at recognizing the importance of customers as stakeholders and considering their needs and expectations leading to innovative and customer-centric solutions. The core of these workshops was the so-called series of co-creation events on user interaction to elaborate customer engagement strategies not only looking at factors influencing customers' behaviour, but to bring customer engagement to the level of user-centred design in a very early stage of the development and assessment of the Platone solution models. The series of co-creation events was complemented by two additional types of events with focus on customer engagement – the Open Days for stakeholder interested in the Platone outcomes to test and discuss developments and products with specific functionalities at the demonstration sites at an early stage of the project and the Study Tours to provide guided demonstrations of the functionality of selected services of the Demos at a later stage of the project.

However, it became clear early in the project, with the detailed design of the first events, that the concept of the series of co-creation events on user interaction could not be implemented as originally intended. The concept of the co-creation processes was too ambitious. The idea of early-stage user interactive workshops to test prototypes could not be realized, due to internal and framework conditions. E.g., the Demos did not have prototypes or similar solutions/products ready for being tested at user level at that early stage. Above that, regarding the Greek Demo, direct customer engagement was not feasible due to the current regulatory framework in Greece, that does not allow for procurement of flexibility services by the DSO. The situation was further aggravated by the onset of the COVID-19 pandemic just six months after the start of the project.

To approach the topic of customer engagement in the best possible way, the concept was therefore adapted according to the opportunities, challenges, and framework conditions of the Demos. In the end, the selection of the customers and key stakeholders with influence on customer engagement processes addressed with the events was tailored to the needs and conditions of each Demo. To respond the challenges of the COVID-19 pandemic, the event concepts which were until then based on physical presence were completely revised and new innovative tools for virtual collaboration were used. Thus, in many cases, the formats that had been common until then were very successfully replaced by completely virtual formats.

After all and despite some initial delays, the workshops on customer engagement with the adapted concepts were successfully conducted, engaging customers as well as key stakeholders with influence on the customer engagement processes. The lessons learned from the workshops revealed at the conceptual level that in the future, greater attention should be paid to ensure that processes of the whole project are closely coordinated with the development of the customer engagement concepts and to what extend customers can be involved also from a legal perspective.

Overall, the workshops provide valuable feedback on the respective solutions. Nevertheless, the quantity of customers involved and above that the specificity of the solutions tested allow mainly qualitative statements and are not representative. It was important to share the experiences at project level with other projects and initiatives, to pool them and to evaluate them in a higher-level context. Therefore, the customer engagement experiences from the Demos have been incorporated into project tasks aimed at collaboration with other projects and cooperations on the topic of customer engagement: The Platone consortium actively participated in the BRIDGE working group on Consumer and Citizen Engagement, contributing to stakeholder characterization efforts. Additionally, the project engaged with other projects funded under the LC-SC3-ES-1-2019 call “Flexibility and retail market options for the distribution grid”, fostering knowledge exchange and cooperation on the topic of customer engagement. As well customer engagement related topics were brought up to the FlexCommunity, a community open to stakeholders interested in flexibility creation, management, and trading Platone initiated with the projects FEVER and edgeFlex. Beyond Europe, Platone collaborated with Canada's DEMI initiative. Two joint workshops were conducted, focusing on replicating Platone's platforms and scalability, and replicability analysis methods. A questionnaire targeting Canadian stakeholders will assess the potential of Platone's solutions for new use cases until the end of the project.

In conclusion, customer engagement is crucial for any project, and Platone effectively incorporated insights from several workshops into its activities. The project's strategic approach facilitated cooperation and coordination with various stakeholders, promoting the implementation and success of the Demos and future exploitation. The experiences from customer engagement activities were widely shared and applied in other tasks and collaborations, contributing to a more comprehensive understanding of stakeholder needs and expectations.

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1 Introduction

The project “PLATform for Operation of distribution Networks – Platone” aims to develop an architecture for testing and implementing a data acquisition system based on a two-layer Blockchain approach: an “Access Layer” to connect customers to the Distribution System Operator (DSO) and a “Service Layer” to link customers and DSO to the Flexibility Market environment (Market Place, Aggregators, …). The two layers are linked by a Shared Customer Database, containing all the data certified by Blockchain and made available to all the relevant stakeholders of the two layers. This Platone Open Framework architecture allows a greater stakeholder involvement and enables an efficient and smart network management. The tools used for this purpose will be based on platforms able to receive data from different sources, such as weather forecasting systems or distributed smart devices spread all over the urban area. These platforms, by talking to each other and exchanging data, will allow collecting and elaborating information useful for DSOs, transmission system operators (TSOs), Market, customers and aggregators. In particular, the DSOs will invest in a standard, open, non-discriminatory, blockchain-based, economic dispute settlement infrastructure, to give to both the customers and to the aggregator the possibility to become flexibility market players more easily. This solution will allow the DSO to acquire a new role as a market enabler for end users and a smarter observer of the distribution network. By defining this innovative two-layer architecture, Platone strongly contributes to aims to removing technical and economic barriers to the achievement of a carbon-free society by 2050 [1], creating the ecosystem for new market mechanisms for a rapid roll out among DSOs and for a large involvement of customers in the active management of grids and in the flexibility markets. The Platone platform will be tested in three European trials (Greece, Germany, and Italy) and within the Distributed Energy Management Initiative (DEMI) in Canada. The Platone consortium aims to go for a commercial exploitation of the results after the project is finished. Within the H2020 programme “A single, smart European electricity grid” Platone addresses the topic “Flexibility and retail market options for the distribution grid”.

Maximizing the impact, replication, and exploitation of the solution developed and tested in Platone requires defining effective stakeholder engagement strategies to ensure high levels of acceptance and transparency among the intended beneficiaries. Among these stakeholders, customers play a crucial role, particularly as their role evolves with the changing conditions in the energy system. Traditional grid stabilization methods, such as re-dispatching and reserve management, have predominantly relied on the participation of large generators and industrial customers. In response to these changing conditions, one of the current challenges is unlocking flexibility in the distribution grid. This involves implementing strategies and technologies to optimize the utilization of flexible resources and capabilities within the distribution grid, including the integration of renewable energy sources, improved grid stability, and efficient management of electricity demand and supply fluctuations. Notably, even small customers, such as residential or small commercial customers in distributed energy systems in their role as consumers (any entity or individual that consumes energy for their requirements) as well as prosumers (any entity or individual who not only consumes energy but also generates energy through on-site renewable energy sources), can contribute to this flexibility. The proliferation of renewable energy generation and the increased need for flexibility offer a broader range of customers the opportunity to participate in flexibility markets. As participation implies engagement, this marks a new form of customer engagement in the electricity system. By embracing these changes and involving customers at various levels, the energy sector can advance towards a more sustainable and responsive future.

Defining customer engagement strategies is one of the key objectives of the Platone project. The corresponding work package (WP) is the WP1 on DSO Operation Strategies and Harmonization. All partners are contributing to activities within this WP. Above that, WP1 is closely related to other work packages covering customer engagement activities but as well as activities on the engagement of further stakeholders of the Platone project.

In the context of the Platone project but equally applicable to the whole the energy sector, it is crucial to differentiate between stakeholders and customers. Customer refers to an entity or individual purchasing energy services from energy providers or utilities and can be residential, commercial, or industrial entities that require energy to power their homes, businesses, or industrial processes. A customer is the end-user of the energy and pays for the energy consumed, usually through utility bills or other billing systems. Stakeholders encompass a broader range of individuals, organizations, or groups that have an interest or influence in the energy sector. This includes customers, but also extends to regulators,

policymakers, industry associations, energy producers, distributors, technology providers, and other relevant actors.

For the topic stakeholder engagement within the Platone project not only WP1 tasks but also WP8 ones on dissemination and exploitation play an essential role. Additionally, the stakeholder activities in the context of the Demo related work packages WP3, WP4 and WP5 are relevant for the stakeholder engagement. The workshops on customer engagement play a central role for the stakeholder engagement activities. Stakeholders and customers share a correlation in terms of their interests, influence, and the value they contribute to the Platone solutions. Looking at the overlapping roles of stakeholders and customers, becoming a customer as well as a stakeholder who has a vested interest in the quality, value, and performance of what they have acquired, their mutual interdependency, influence and contribution to value creation, the workshops in the context of the Platone project´s customer engagement not only addressed customers directly but as well those stakeholders who have relevant influence on customers' expectations and needs. The workshops on customer engagement and several complementary events aim at recognizing the importance of customers and stakeholders and considering their needs and expectations leading to innovative and customer-centric solutions.

1.1 Associated Tasks

The main task in the context of customer engagement strategies for the project is task 1.5 "Harmonization with customers and partners needs and expectations". Therefore, in addition to the scientific and technical approaches of WP1, workshops on customer engagement in form of a series on co-creation events on user interaction had been designed to involve customers with the aim to identify their needs, expectations, and concerns.

Within WP8 and particularly in task 8.3 "Organizing PlatOne dissemination and uptake events" further events on customer engagement that complement the series on co-creation events on user interaction designed in Task 1.5 were foreseen to be conducted in form of so-called Open Days and Study Tours.

Above that this deliverable is associated to task 1.4 "Coordination with similar/twin projects" within WP1, within WP3 "Italian demo" to task 3.4 "Solutions to enable Aggregators to provide flexibility: Aggregator platform and customer involvement", to task 4.5 "Customer engagement methodologies" within WP4 Greek Demo and to tasks within WP8 particularly related to knowledge exchange to enhance and refine customer engagement approaches and strategies in European joint activities with focus on stakeholder engagement.

The following deliverables and milestones addressing the topic customer involvement or associated topics have been submitted so far:

- D1.6 "Report on twin projects coordination Workshops", April 2023 [2]
- D3.7 "Italian Demo: Report of customer involvement", January 2021 [3]
- D8.4 "Intermediate report on the stakeholder engagement, exploitation, dissemination, communication and standardization activities", August 2021 [4]
- D8.10 "Exploitation and Marketing Plan for the involvement of partners and future customers v2)", December 2022 [5]
- MS2 "Kick-off Workshop on customer engagement", November 2019.
- MS6 "Well accepted Open Days at all 3 trial sites presenting and discussing prototype solutions", due February 2021, achieved December 2021
- MS15 "Last coordination workshop executed", December 2022

This deliverable D1.5 "Report on Workshops on customer engagement" covers mainly task 1.5 and task 8.3, reporting on the conduct of the workshops on customer engagement, identifying the main outcomes of the discussions as well as the impact to other tasks of the project up to those related to European joint activities with focus on stakeholder engagement.

The already mentioned Study Tours as part of task 8.3 and a crucial element of the workshops on customer engagement, were initially scheduled to take place in the final phase of the project. Consequently, they fell outside the time frame covered by this report. As no other deliverable was planned to document these Study Tours, the decision was made to include them in this deliverable to ensure a comprehensive overview of the workshops on customer engagement.

Due to organizational reasons, the Study Tours in Italy and Greece were scheduled until the end of June. This time schedule in conducting the study tours has impacted the finalization of the deliverable, resulting in its submission being moved from project month 44 to project month 47.

1.2 Objectives of the Work Reported in this Deliverable

The deliverable provides an overview of the workshops on customer engagement and their complementary events as part of task 1.5 and associated tasks. It describes the concept and the conduction of workshops and complementary events, the lessons learned and how the findings have impacted the activities of other tasks of the project.

The main objective of this document is to analyse the implementation as well as the results of the workshops and complementary events on customer engagement and to share the lessons learned, thus effectively promoting scientific, economic, political, or societal exploitation. In this way, research and innovation activities can be transformed into concrete value for society.

1.3 Outline of the Deliverable

Chapter 1 contains the introduction of the deliverable.

Chapter 2 introduces the concept for the workshops on customer engagement and the complementary events.

Chapter 3 gives an overview of the conduction of the workshops and the complementary events.

Chapter 4 concludes the preceding chapters on concept and conduction of the workshops and the complementary events with the lessons learned.

Chapter 5 takes a look at the impact of the findings of the workshops on customer engagement activities on other tasks of the project related to European joint activities with focus on customer engagement.

Chapter 6 draws conclusions from the results of the work done.

1.4 How to Read this Document

This deliverable reports on the workshops on customer engagement and particularly on the series of co-creation events on user interaction and complementary events as part of task 1.5.

Most of these activities have been accompanied by further activities being reported in other deliverables and documents. For an in-depth understanding of the project work that contributed to the organisation and content of the workshops and where appropriate, these documents are referred to for further information in this deliverable.

2 Concept for the Workshops on Customer Engagement

2.1 The Role of the Customer Engagement in the Platone Project

The concept of customer engagement can vary in meaning and application across different contexts. Most attention to date regarding customer engagement in the electricity sector have received in areas such as the adoption of environmentally friendly behaviour, switching energy tariffs, participating in energy conservation programmes, or e.g., engaging in demand response programmes. But the role of customers is evolving in response to changes in the energy system, particularly with the proliferation of renewable energy generation and the increasing need for flexibility. These changes create new opportunities for customers to participate in flexibility markets, which, in turn, represents a new form of customer engagement in the energy system. The Platone project aims to address the challenge of harnessing flexibility from customers in the distribution grid. At the heart of the Platone architecture is a platform that facilitates transparent multi-party data sharing. This platform enables the integration of services by third parties, with a particular focus on incorporating customers' appliances as a valuable source of flexibility. The project implementation includes trial sites in three countries: In the Italian trial site, both retail and business customers actively participate as key players, engaging with aggregators and the DSOs. In Greece, the trial site involves a mix of several customers like households and small, medium, and large industries. In the German case, residential customers have been equipped with smart metering and control devices, allowing for the effective utilization of flexibility within households. By leveraging the project´s data sharing platform and engaging customers as active participants, the Platone project aims to enhance the involvement of end customers in providing flexibility, ultimately contributing to the stability and efficiency of the energy system.

Understanding which key factors influence customers' behaviour regarding energy usage up to engaging in the energy system is crucial to help tailoring engagement strategies to address customer's needs. For Platone, the idea of elaborating customer engagement strategies was not only to look at factors influencing customers' behaviour, but to bring customer engagement to the level of user-centred design in a very early stage of the development of solutions. For Platone´s strategies on customer engagement developed in task 1.5 of WP1, task 3.4 of WP3 and task 4.5 of WP4 the partners defined approaches on harmonisation with stakeholders' needs and expectations, which should lay the ground for the development and assessment of Platone solution models. Core of this approach was the so-called series of co-creation events on user interaction. Above that, methodologies should have been developed that assist in engaging customers to voluntarily participate in the proposed demonstration solutions. The next chapter describes the concept for the series of co-creation events on user interaction.

2.2 Series of Co-Creation Events

Looking at the origin concept for the series of co-creation events on user interaction proposed in the General Agreement of Platone the series encompasses:

- A workshop on capacity building for project partners only to introduce user-centric design and prepare specific innovation activities to learn the basics of Design Thinking methods and mindset [6], brainstorming methods and to get insights into user comprehension, rapid prototyping, testing of ideas, sustainable innovation with economic, environmental, and social impact.
- Innovation workshops at each Demo in preparation of the Platone field trials to identify user´s needs and expectations. Participants envisaged were solution developers, potential participants of the trials and other typical users or representatives of consumer organizations.
- A series of workshops for continuous user interaction with prototypes and advanced methods with representatives of consumer associations to identify their concerns, catch their expectations and develop them as partners for communication and dissemination.

The focus of the Design Thinking method was on understanding the end users, i.e., identifying their needs, expectations, and concerns. The original idea was to utilise this approach through direct interactions in the early phases of the project in WP1 and together with third party suppliers and customers in the design phase of each field trial. The solutions should have been developed in a serious

of co-creation sessions using agile methodologies. Design thinking is a problem-solving and innovation approach that emphasizes a human-centred and iterative process to generate creative and practical solutions. It is a mindset and a set of methods used by designers and non-designers alike to tackle complex problems and develop innovative solutions. For that reason, this methodology should have been introduced to the entire Platone consortium to improve teamwork and, at the same time, develop valuable solutions in an appealing working environment. Design Thinking is highly user- and target group-oriented and involves users at well-defined points in the development process. The methodology secures a high level of acceptance and transparency of the project results as it starts testing with a minimal functionality component and regularly re-testing after incrementally adding new functionality to the working system. In the technical work packages, each task should be executed in short work cycles with sequential phases, which include analysis, specification, and implementation. The short work cycles enable new requirements coming from the simulations or the trial sites to be processed at all stages of the development.

However, it became clear early in the project, with the detailed design of the first events of the series, that the concept could not be implemented as originally intended - see a detailed consideration in the chapter 4 on the lessons learned.

To summarize, the concept of the co-creation processes was too ambitious. The idea of early-stage user interactive workshops to test prototypes could not be realized, due to internal and framework conditions. E.g., the Demos did not have prototypes or similar solutions/products ready for being tested at user level at that early stage. Above that, regarding the Greek Demo, direct customer engagement was not feasible due to the current regulatory framework in Greece, that does not allow for procurement of flexibility services by the DSO. The situation was further aggravated by the onset of the COVID-19 pandemic just six months after the start of the project.

To approach the topic of customer engagement in the best possible way, the concept was therefore adapted according to the opportunities, challenges, and framework conditions of the Demos. In the end, the focus was less on the co-creation process with potential users and further relevant stakeholders for the development phase and more on the involvement of customers who should participate in the Demos. Above that the activities include actions aimed at engaging key stakeholders who have a relevant influence on customer engagement and can therefore support the engagement process, such as local authorities e.g., for the basic setting, installers with direct customer contact, etc. Several of these stakeholders play an important intermediary role in engaging customers and can be therefore seen as key stakeholders for customer engagement processes. In the end, the selection of the customers and key stakeholders with impact on the customer engagement processes addressed with the events on customer engagement was tailored to the needs and conditions of each Demo. In addition, there were the special requirements of the pandemic: The events, which until then had been designed for physical presence, were initially only postponed, as the only way to engage customers seemed to be through physical presence. As the pandemic progressed, it became clear that alternatives to physical events had to be found as the complete lifting of restrictions on physical meetings as well as travel activities were not foreseeable. As a result, the event concepts that had been based on physical presence until then were completely revised and new innovative tools for virtual collaboration were used. Thus, in many cases, the formats that had been common until then were very successfully replaced by completely virtual formats.

2.3 Complementary Events with Focus on Customer Engagement

Complementing the series of co-creation events on user interaction, two additional types of events with focus on customer engagement have been proposed with the Platone Grant Agreement: The Open Days were suggested as events in which stakeholders interested in the Platone outcomes" could test and discuss developments and products with specific functionalities at the demonstration sites at an early stage of the project while the Study Tours were suggested to provide guided demonstrations of the functionality of selected services of the Demos at a later stage of the project.

2.3.1 Open Days

The format of Open Day was developed to create events at the demonstration sites at an early stage for stakeholder groups interested in the Platone outcomes, among them customers, to present and discuss prototype solutions. Important feedback from users and involved stakeholders was expected to

be gathered through the Open Days, which helps in adapting the presented solutions and fostering an increased exploitation level. The organization of the Open Days was related to a milestone MS6 “Well accepted Open Days at all 3 trial sites presenting and discussing prototype solutions” which was due until February 2021.

The changing framework conditions due to the COVID-19 pandemic limited the options for effective stakeholder engagement, as physical contacts were limited or prohibited and the planning and holding of physical workshops was not possible from March 2020 onward, as the rules in Germany, Italy and Greece severely restricted physical events. According to the discussions within the consortium (especially trial sites responsible partners), virtual events could not replace physical events appropriately, in terms of the Open Days. Therefore, all Open Day events were postponed accordingly and with respect to the COVID-19 restriction relaxations taking place in different countries.

But as it became clear that alternatives to physical events had to be found – like with the co-creation events on user interaction – the concept of the Open Day was revised in favor of a virtual format. Thus, the Italian and Greece Open Days were very successfully replaced by a completely virtual event.

Ultimately, all Open Days were successfully carried out and made a valuable contribution in terms of customer integration. The corresponding milestone MS6 “Well accepted Open Days at all 3 trial sites presenting and discussing prototype solutions” was achieved by end of 2021 with 10 months of delay.

In chapter 3, the conduction of the Open Days at the Demos in Italy, Germany and Greece are described in detail.

2.3.2 Study Tours

The format of the Study Tours has been proposed for interested customers, key stakeholders who support the customer engagement process as well as further stakeholders interested in the Platone outcomes as soon as prototypes of solutions are implemented.

In total, four Study Tours were tentatively planned until the end of the project to take place at the Demos in Europe featuring guided demonstration of the functionality of selected result and in collaboration with the Canadian cooperation partners. The tours are an important step for the exploitation of the Platone solution after the conclusion of its activities in August 2023.

Individual events with selected stakeholders for each of the Demo have been planned as seen below:

- The Study Tour at the German Demo took place in the context of a regional event “Day of Regions”, 2 October 2022 as a live event (see chapter 3.3.2.2)
- The Study Tour at the Italian Demo took place on 20 June 2023 as a hybrid live event (see chapter 3.2.2.2).
- The Study Tour at the Greek Demo took place on 30 June 2023 as a live event (see chapter 3.4.2.2).
- The Study Tour at the Canadian Demo was planned in July 2023 in a hybrid format. Due to organisational aspects at the Canadian partners sides, a Study Tour cannot take place until the end of the project. Instead, a survey targeting Canadian stakeholders, especially representatives of regulators, DSOs, TSOs and system operators was sent around (see chapter. 5.2).

In chapter 3, the conduction of the Open Days at the Demos in Italy, Germany and Greece are described in detail. The collaboration with Canada is described in chapter 5.4.

3 Conduction of the Workshops on Customer Engagement

The process with the events on customer engagement was initialised with the workshop on capacity building in November 2019 with all project partners to introduce user centric design and to prepare specific innovation activities.

The continuation of the event series, already under an adapted concept (see chapter 2.2) was then heavily affected by the COVID-19 pandemic spread from spring 2020 onward. With the consequent restrictions applied on the identified physical workshops with customers and key stakeholders with influence on the customer engagement process, not all of the planned workshops and complementary events like the Open Days could take place in the first year of the Platone project. Alternatively, several virtual workshops substituted physical meetings to address different topics relevant for the customer engagement activities.

Although with some delay in the beginning, the adapted series of co-creation events on user interaction eventually took place and put end customers as well as selected key stakeholders with influence on the customer engagement process at the centre to investigate their needs and expectations with demo-related workshops in Greece, Germany and Italy and has been completed with the organisation of a session dedicated to customer engagement during the last coordination workshop for the projects funded in the LC-SC3-ES-1-2019 call “Flexibility and retail market options for the distribution grid” (ES-1-2019) by the end of 2022 [7][8] (see chapter 5.2). Above that, with some delay in the beginning, all Open Days have been successfully organized in the late first phase of the project as well as the Study Tours in the last phase of the project.

3.1 Introductory Workshop on Capacity Building

The customer engagement process was initialised with a kick-off workshop with all project partners to introduce user-centric design and prepare specific innovation activities. This “Capacity Building Workshop” was conducted in Berlin on 4 and 5 November 2019. The main objective of the workshop was to introduce the consortium partners to software development methods for user-centred design as a prerequisite to bring customer engagement to the level of user-centred design in a very early stage of the development of solutions. The partners were introduced to the most-recent method and mindset of Design Thinking. Moreover, specific innovation and interactive stakeholder engagement activities were prepared to demonstrate user-centric design and the importance for developing solutions, which will be accepted by the users because they were developed together with them. Above that, a common understanding of “Platone users” was created by defining stakeholder groups and their role in the energy system as well as in Platone.

Figure 1: Workshop on capacity building, November 2019

Additionally, the opportunities and challenges of user-centric development process were firstly discussed for each trial site. With the continuation of the event series in form of the innovation workshops

at each Demo in preparation of the Platone field trials, these discussions have been deepened and Demo specific concepts for the engagement processes have been elaborated. The conduction of the event series at Demo level is described in the following chapters.

3.2 Italian Demo

The solution proposed by Platone project and specifically by the Italian Demo, aims to test local flexibility mechanisms where the customer as end-user has a central role. In the project concept, the customer gets an active role as a "partner" who can make her/his flexibility available to the market. By modulating her/his energy consumption, the customer can help the DSO to efficiently manage its distribution grid. This supports the DSO when facing criticalities that can affect the stability and security of the network, caused by the increasing penetration of volatile renewable energy sources and by the enhanced electrification. As a pivotal player of the future energy market, the customer needs to be made aware of this new role and its related benefits to enable active participation and conscious involvement in helping the energy system to be more secure, stable and sustainable.

The aim of the Italian demonstration within WP3 is to realize a fully functional system that enables distributed resources connected in medium and low voltage to provide grid services in different flexibility market models which include all the stakeholders (TSO, DSO, aggregators and customers). Specifically, the Italian Demo objectives are:

- Use of Blockchain technology for an efficient, democratic and non-discriminatory market model for exploitation of local flexibility;
- To improve and promote the customer access thanks to the Blockchain-based infrastructure;
- Use of local flexibility to solve the grid issue;
- To Increase the grid observability for improving the network management;
- Engaging customers to be informed about the Italian Demo and involved in the pilot testing execution phase.

Within WP3, customer engagement is covered by task 3.4 under the subtask "Customers engagement techniques", led by Acea Energia in cooperation with B.A.U.M. and with support of WP1 in charge of this topic, to involve the customers to make available their flexibility power. It includes different activities aimed at developing a local flexibility market in which customers can be considered as market actors of the DSO, thanks also to the role of the aggregator. The customer engagement techniques subtask in particular has the objective to involve end users to make available their flexibility power within the trial, laying a stable ground for effective strategies and engaging partners (customers but also local stakeholder groups, etc.). The subtask foresees the realization of a series of workshops with the participation of different groups of stakeholders, among them customers), to jointly develop customer engagement models and solutions with a deliverable D3.7 "Italian Demo: Report of customer involvement" of January 2021 [3].

In preparation of the launch of the Italian trial operation by the third quarter of 2021, after the release of the complete system architecture, its test and entry into operation, specific activities and strategies have been implemented within the Italian Demo for the purpose of customer involvement, also including actions aimed at engaging key stakeholders who can support the customer engagement process.

For the customer involvement of the Italian Demo the deliverable D3.7 describes in detail the methodology applied, specific activities carried out and results achieved for customer involvement within the Italian Demo. For the present report the focus is on the workshops conducted.

3.2.1 Series of Co-creation Events on User Interaction

A co-creation preparatory path, realized by Acea Energia in synergy with B.A.U.M. and Areti, led to the identification of a blended strategy for customer involvement, based on principles of both the participatory process and the interdisciplinary approach.

According to this view and considering the different clusters of customers identified as to be reached, two concatenated customer engagement workshops were planned with different linked aims, respectively addressing: 1) local key stakeholders and large commercial prosumers; 2) residential customers (prosumers and consumers). This clustering of stakeholders in two groups and the corresponding workshops with them were identified as easier and more effective for

setting the ground for starting discussion forums to collect field needs and define together an effective customer involvement strategy, while obtaining first expressions of interest for taking part in the trial.

Innovation workshop "Optimized grid management and flexibility market: the prosumer's role"

The virtually held innovation workshop on customer engagement of the series of co-creation events on user interaction under the title "Optimized grid management and flexibility market: the prosumer's role", was divided in two parts and held on 18 and 25 June 2020.

The first part was an informational workshop for stakeholder groups (except end customers), interested and relevant for Platone project. The second part had systemic character and discussed actual and future roles in the energy system with relevant stakeholder groups (except end customers) in an interactive format.

The remote meeting was a great opportunity to introduce the project and its Italian Demo to a variegated audience composed of external representatives of research centres, technical and sector experts from companies operating in the energy production field, electrical storage providers, local administrators and organizations operating in the energy renewables sector. Over 30 attendees joined the event. This virtual event ended with two thematic focus groups dedicated to "The transition towards greater energy awareness" and to the "Ways for remunerating flexibility", during which all the participants shared their valuable feedback and experiences. The discussion mainly focused on possible levers to stimulate customers to adopt more responsible energy behaviours and to be more aware of their energy consumption. This was considered as a fundamental building-block for discussing the the fact that customers provide flexibility for the grid services: The opportunity that can be offered by flexibility as a mean of exchange for additional services, favouring circular and sharing economy-based logics, was one of the main highlights shared by attendees together with the need to minimize the impact on customers' daily life through smart and home devices.

The insights gained during the first workshop guided the preparation of informative materials for the workshop for customers and key stakeholders supporting customer engagement from Centocelle and Tor di Valle district areas.

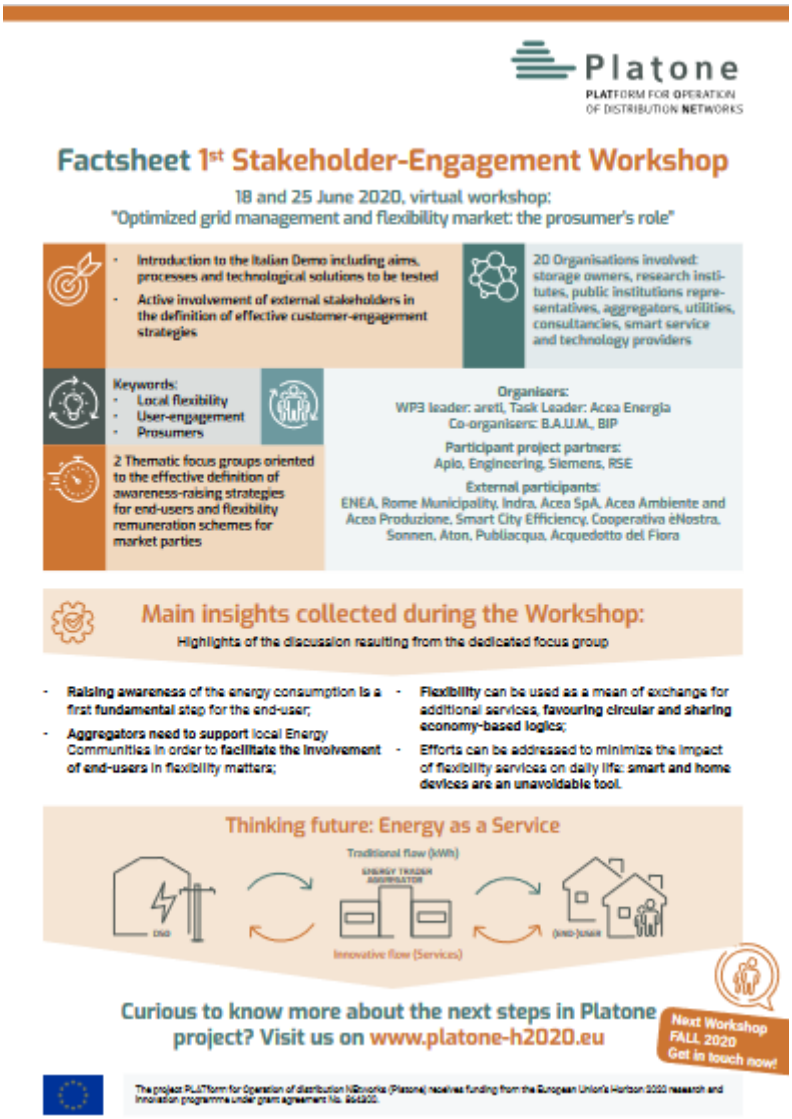

Figure 2: Factsheet: comprehensive overview on this 1st workshop on stakeholder engagement for the Italian Demo

Workshop for stakeholders from Centocelle and Tor di Valle district areas

On 2 March 2021, the first workshop on customer engagement of the series of co-creation events on user interaction was held virtually with over 10 residential customers and building managers representing additional end-users actually interested in taking part in the Italian Demo from the Centocelle and Tor di Valle district areas.

The title of the virtual Workshop was “Participating in the Platone project and supporting the network in becoming Greener”. The aim was to involve residential customers in the Platone project and in the Italian trial, representing its challenges, objectives and expected results. The workshop was organized and coordinated by Acea Energia, in synergy with Areti, engaging ENEA as speaker, and with the cooperation of B.A.U.M. and BIP. The workshop concept was based on the analysis of the portion of the grid underlying the target areas covered by the project. The secondary substations in the Centocelle district were identified and portions of the Tor di Valle grid were analysed. A first group of about 150 grid residential customers were identified based on this analysis and introduced to the project through an informative campaign launched at the end of 2020 in the Centocelle area (where an energy community composed of 10 low voltage residential users already involved in an active training and awareness-raising process for the sustainable use of energy is located) and in the Tor di Valle area in the south of Rome. The workshop was addressed to those residential customers who had showed great interest in receiving more information following the informative campaign.

By means of a user-friendly presentation, attendees were guided through the local flexibility processes that guarantee the DSO optimal network management. The new role of the end user was particularly stressed as a partner of the DSO in solving grid congestion with benefits for the end user like e.g., saving energy and therefore costs. The final purpose of the event was also to invite interested customers to join the Italian Demo starting from the second semester of 2021, explaining modalities, advantages and impacts on daily life. A special focus was dedicated to the installation of smart equipment such as the Light Node apparatus, the possibility to become prosumers and the use of a dedicated mobile App called “Flessibili” [9] allowing to monitor their consumption and flexibility requests based on the system needs.

The workshop reached residential customers and building managers representing additional end-users interested in taking part in the Italian Demo from the Centocelle and Tor di Valle district areas. The participants, having acquired more knowledge about the Platone project and their role in the local flexibility market, had the opportunity to directly ask questions and make considerations during the Q&A session at the end of the workshop. Most of the information requests regarded the possibility for customers to obtain savings on their bills even after the end of the trial, by keeping the equipment provided through the Platone project. Questions formulated by attendees were collected to be duly analysed and considered for driving the strategy. During the event, the participants showed great interest in the "Flessibili” mobile app. The app is the tool through which customers involved in the trial are able to monitor their energy consumption in real time and view their flexibility requests. The app is the gateway to the local flexibility market, allowing the user to accept or reject scheduled flexibility requests from the distributor.

After the Workshop, all presented materials were sent to attendees by Areti, together with the participation form for customers and the privacy policy informative document. The collection of formal participations signed by the first group of target customers ended by April 2021. Further follow-up actions were taken in order to continue establishing contact with all the interested customers and to trace the path for enlarging the audience and the target customers to inform and involve them in the trial. Areti is the focal point for the implementation of the abovementioned activities. Results related to the ongoing field trial implementations are shared with the involved customers every six months until the end of the project by means of dedicated newsletters. According to this approach, the informative letter will be progressively sent in the following months to new groups of target customers, who will be provided with information materials and invited to join new events, with the aim to enlarge the number of possible participants in the trial and reach a wider audience to be made aware of project topics.

Figure 3: Event on user interaction for the Italian Demo

Workshop for stakeholders from Capannelle area

On 2 February 2022, another virtual workshop was held with stakeholders identified in the Capannelle area for the involvement of further customers. 10 participants, 5 of them potential users in the Capannelle area, provided valuable feedback and showed interest in participating in the Demo.

Testing demo call with Platone users

On 23 November 2022, Areti held an online testing demo call with the team leaders and the users involved in the project to test the activation of the platforms in order to solve a case of voltage congestion. Out of the 25 participants involved in the call, 9 were users already involved in the project, 2 of them were involved in the activation of the flexible devices in their home. The meeting focus was on 4 different points:

- Acquisition of resources;
- Market participation;
- Service provision;
- Results evaluation.

From these above-mentioned points, the third one, i.e., the service provision was of crucial importance as it was the first time that the process was shown to the users and therefore laid the foundation to enable the activation of the user residential flexible devices. The event was held completely remotely.

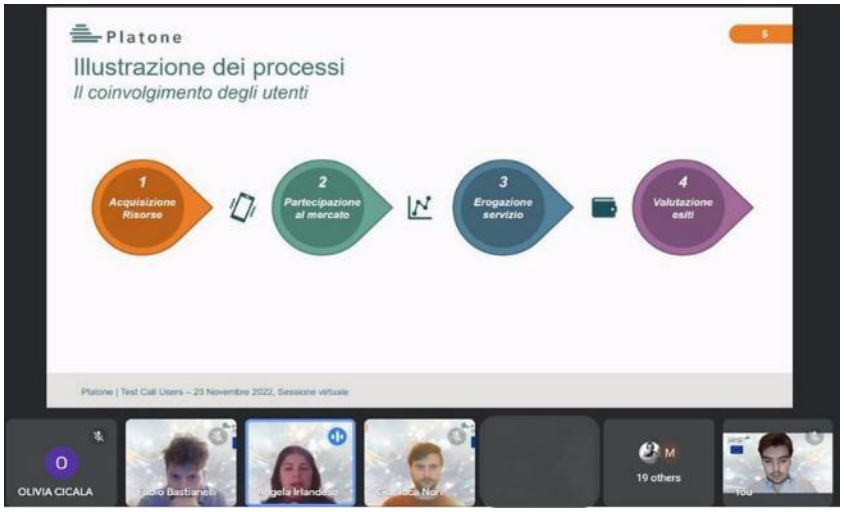

Figure 4: Virtual Testing Call with the users of the Italian Demo

3.2.2 Complementary Events with Focus on Customer Engagement

3.2.2.1 Open Day

On 20 December 2021, Platone partner Areti successfully hosted the virtual Open Day of the Italian Demo. Thanks to the collaboration among the responsible Platone partners for the Italian Demo, 25 participants of the virtual Open Day event gained an insight into the activities and the implementation of the Italian trial. Moreover, consortium partners Areti and Apio showed the first results achieved thanks to users' participation. 9 out of 25 participants were users who are actively involved in the trial. With the Open Day, they were invited to get an update on the work status and the next activities that they will be involved in. The users participating in the event actively took part in the discussion and raised very interesting questions. Particular attention was given to the energy transition and how the Platone project and the partner Areti as provider of electricity distribution services for residential, commercial, and industrial customers in Italy contributes to this. The event was held completely in remote mode due to the COVID-19 pandemic.

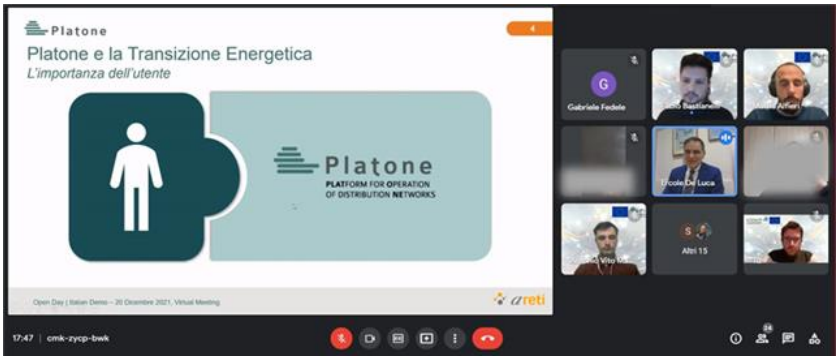

Figure 5: Virtual Open Day of the Italian Demo

3.2.2.2 Study Tour

The Italian Study Tour took place on 20 June 2023 as a hybrid event in the Talent Garden Ostiense, a co-working space located in Rome and was broadcasted live [10]. Within the participants of the event, Platone consortium partner Areti involved stakeholders coming from start-ups and associations located inside the co-working space. The Study Tour focused on how the Platone project has been able to lay the foundations for the digitalisation of the distribution network in Rome over the past four years, in order to adapt it to the new European and national functional and regulatory requirements and to enable flexibility and demand response.

Massimo Bonato, Chief Executive Officer (CEO) of Areti and other colleagues and partners reported on the innovative results of the project and the importance for the development of the local flexibility markets in Rome. The event was hosted by Ercole De Luca, Head of Electricity System Development for Areti. After a brief introduction, De Luca moderated an engaging debate on the new role of the DSOs. In this way, the speakers were engaged in an inspirational discussion of the future energy scenarios and how the power system is changing due to the energy transition and how the role of DSOs will meet these challenges. Moreover, the results achieved so far in the project were shared with the audience.

The event was held in a hybrid version with the physical participation of different technical experts coming from entities that are part of the consortium (Areti, Acea Energia, Engineering, Apio and Siemens) and virtual participation of multiple stakeholders coming from the energy sector, start-ups that are part of the Talent Garden and a group of students enrolled in the course of Law Digital Innovation and Sustainability at LUISS Guido Carli University with more than 200 participants in the YouTube streaming.

3.3 German Demo

In WP5, the German Demo of Platone, led by the German DSO Avacon develops, implements and tests a local balancing mechanism integrated into the Platone architecture framework that enables the advanced usage of small-scaled flexible assets located in distribution networks. Avacon implements an energy management solution named Avacon Local Flex Controller (ALF-C) that allows to monitor and control local small-scaled flexibilities. The ALF-C makes use of next level algorithms to predict generation and consumption, balance the local network and determine optimal schedules for the activation of flexibility.

The system provides technical requirements for customers to be steered as part of an energy community that aims at practising collective self-consumption, to participate on markets (e.g., flexibility markets) and creates required conditions to bring DSO, TSO, market participants and aggregators together for a more efficient allocation of DER, more efficient grid operation and promotion of the Energy Transition. Furthermore, the ALF-C enables customers and privately-owned flexible assets to be merged in an energy community and aggregates them to a single source of flexibility, able to contribute to mechanisms for stabilization and safe operation of the grid. The installation and operation of field test equipment is covered by task 5.5 of WP5. Within this task, customer engagement plays an important role. For the field test, customers have to be equipped with smart meters and control devices to integrate domestic flexibility. Avacon is responsible for either handling the installation activities with their own personnel or pick suitable subcontractors to support the task. Potential customers as subcontractors

have to be reached and motivated to participate in the project and to implement a field test setup. Therefore, the series of co-creation events on user interaction aims at supporting the involvement of end-users like households and service providers like subcontractors to participate in the project as well as raising awareness and support of stakeholders like decision makers (e.g., representatives from the municipality), multipliers and the citizens themselves.

3.3.1 Series of Co-creation Events on User Interaction

The following events have been successfully organized within the series of co-creation events on user interaction:

Innovation workshop

The innovation workshop for the German Demo took place in combination with the first official General Assembly in Rome on 1 January 2020 internally with the responsible project partners. Possible scenarios for engaging the customers and other key stakeholders supporting customer engagement were discussed and an implementation strategy was elaborated. Based on the outcomes of the innovation workshop, Avacon has implemented a multi-step approach for a successful customer integration that motivates customers to participate in the project and to implement a field test setup that reflects future communities in distribution grids and that provides a full technical and functional scope for use case testing and evaluation. A concept for private customer technical equipment and integration into the demonstrator, consisting of a battery storage system and inverters have been developed. Private households were offered incentives to participate in the project by providing a service for the design, installation and commissioning of battery storage systems and inverters for households that can be operated with a rooftop photovoltaic system. Contacts to local installers and vendors of flexible assets have been established in order to find additional sources of flexibility, e.g., heat pumps to be installed in customer households and integrated into the measurement and control mechanism of the ALF-C. Furthermore, the training department of Avacon has been involved to support the installation and adapt the solution to customer's needs.

Events on the engagement of customers and key stakeholders with influence on customer engagement

On 18 August 2020, a stakeholder workshop was held in Syke, Germany with installers, i.e., the regional service providers who sell technical systems such as photovoltaic systems, heat pumps and night storage heaters from large manufacturers. (e.g., Viessmann, E3DC, Sonnen). They are certified by manufacturers and local authorities to sell, install and commission the technical components as general contractors. In addition, some of them are commissioned by Avacon Netz for the installation of electricity meters at customers' premises. With this workshop, Avacon informed the 10 participants about the EU-funded project and the smart grid concept to be implemented and discussed the conceptual approach. Additionally, Avacon identified and investigated the ability of currently marketed flexible load and household storages for external control and measurement in order to evaluate the feasibility of the system for integration into the local balancing mechanisms by the ALF-C. The workshop provided valuable feedback for the further steps of the German Demo. The installers stated their general support for the project and providing information about systems and, if necessary, for building contact to manufacturers in case open questions arise.

In 2023, Avacon has participated in public events, e.g., "Bürgerinformationsveranstaltung in Twistringen – Unsere zukünftige Energieversorgung" on 7 March 2023, organized by the Federal Ministry of Economics and Climate Protection in the field test region. Focus of these events have been the challenges of the energy transition, the transition of the customers from consumers to prosumers. Avacon presented the transition in the grid and the concept of Platone and the German Demo. The public events have been visited by approximately 80 citizens who were interested in the future role of wind power and photovoltaics as well as smart gird solution and its potentials on the example of results that have been generated in the German Demo of Platone.

Involvement of municipal representatives

Several small meetings for the involvement of municipal representatives were organized, i.a. on 08.05.2020, 20.05.2020 and 30.09.2020 in Twistringen with the Mayor of Twistringen at Townhall Twistringen, Germany. In order to select a suitable field test area, Avacon had to acquire sites for the

storage facility and obtain building permits. Workshops with the mayors to identify suitable plots of land owned by the city of Twistringen were held. Furthermore, requirements from the building permit process had to be discussed. Individual discussions were held with property owners on site (presentation of the project, inspection of the site to assess feasibility).

On 21st October 2020, a workshop was held with the Local Council of Abbenhausen, part of the municipality of Twistringen. These representatives speak and make decisions on behalf of the entire community. Avacon targets to acquire customers with flexibility (storage) for active participation in the project and to equip them with control and communication devices for integration into a local energy management system. With this workshop, Avacon created understanding for the targets of the project, of the way of customer recruitment and understanding of technical components to be implemented in the households. The five representatives who were present provided direct feedback after presentation and discussion about how to approach the households.

Involvement of politicians

During the project phase, different representatives from politics came to visit the German Demo of Platone to get insight into the grid operator challenges, the approach addressed in the field test trial and collected results.

1.) 3rd November 2022 visit of Axel Knörig Member of the Bundestag of the Christian Democratic Union of Germany (CDU)
2.) 6th December 2022 visit of the Chairman of the parliamentary group of the Free Democratic Party (FDP) in the German Bundestag - the German federal parliament.

Figure 6: Visit of Axel Knörig Member of the Bundestag of the CDU


Kreiszeitung Stuhr, Weyhe, Syke vom 06.12.2022

Kreiszeitung

Seite: 9
Ressort: Bassum / Twistringen
Rubrik: BASSUM
Ausgabe: Hauptausgabe

Mediengattung: Tageszeitung
Auflage: 8.572 (gedruckt) 10.421 (verkauft) 10.508 (verbreitet)
Reichweite: 0,023 (in Mio.)

Eigener Strom auch bei Schmuddelwetter

Wie weniger Energie verpufft: Bundestagspolitiker informiert sich über Forschungsprojekt

Figure 7: Christian Dürr (Chairman of the parliamentary group of the FDP), Rainer Schmittdiel (Chief Technology Officer (CTO) Avacon Netz GmbH), Jens Bley (Mayor of Twistringen)

3.3.2 Complementary Events with Focus on Customer Engagement

3.3.2.1 Open Day

With the Open Day at the German Demo, customers such as residential consumers, prosumers, electric vehicle owners and demo-relevant stakeholders such as public utilities, electrical distribution system operator have been involved. The Open Day as a first on-site event at the German Demo - still in the COVID-19 pandemic - could take place under strict hygiene measures. The event took place in several timeslots on the 25 and 26 May 2021 in small groups. Technical prototypes were presented to a broad audience and feedback was collected with appropriate forms. Among the participants, some household owners got also familiar with the scope of the project and the participation in it. With the comments and the feedback, Avacon could adapt the next steps in the project and collect more experience regarding the future stakeholder engagement process.

Figure 8: Open Day of the German Demo

3.3.2.2 Study Tour

On 2 October 2022, the German Demo organized a well-visited Study Tour in the context of the German Day of the Regions. The Day of the Regions is an annual project in Germany that has been calling on actors of the regional economic cycle to transport regions to the outside world since 1999. Core of the Study Tour was the large battery storage, the core of the Platone German Demo in a rural area in northwest Germany. Over 200 visitors came along and informed themselves about the project. People showed a high interest in the topic and achieved results. Part of the Study Tour was a general project and Demo presentation, a guided insight into the large-scaled battery storage and its component, a guided tour of the intelligent secondary substation, and a dashboard was presented on a screen with soft real-time measurements from the medium-voltage/low-voltage feeder compared to a baseline indicating the grid beneficial effects of steering.

Figure 9: Study Tour at the German Demo

3.4 Greek Demo

In WP4, the Greek Demo, led by the Greek DSO HEDNO (Hellenic Electricity Distribution Network Operator), adopts the Platone architecture in order to evaluate its benefits and potential. HEDNO aims to prove the Platone framework as a powerful data acquisition system, by integrating a large amount of data coming from heterogeneous sources. More specifically, measurement data from both legacy systems (Supervisory Control and Data Acquisition (SCADA), Automatic Meter Reading systems (AMR), and new metering systems like the Phasor Management Units (PMUs) that got installed as part of the Platone project becomes all available to the DSO in one place. Additionally, the Greek Demo envisages Platone as the ideal environment to utilise effectively this data by accommodating and testing novel tools and services for use of the DSOs, TSOs, customers and aggregators. For this purpose, algorithms that address issues ranging from improvement of grid observability and smart use of DERs to the provision of ancillary services to the TSO are developed.

Flexibility provision requires customer engagement. Therefore, a user-centric approach was planned to be developed to properly involve customer and further stakeholders with relevance for customer engagement and incentivize them to voluntarily participate in the proposed solution. Customer engagement tasks for the Greek Demo are covered by task 4.5 “Customer engagement methodologies” in WP4. But in the ongoing implementation of the project from 2019 on and other than proposed in the Grant Agreement within the context of the Greek Demo, there is currently no active participation of customers in the procurement of flexibility, due to regulatory obstacles. There is no framework that defines whether the DSO can procure flexibility services from the customers via market processes. The Greek solution developed within the project employs flexible loads through network tariffs and the innovative approach that the Greek Demo proposes (use of network tariffs in the Day Ahead context with variable spatial, per node of the network, and temporal, per hour, granularity), cannot be applied and tested in a real-life environment since network tariffs are regulated by the National Regulatory Authority of Greece. Consequently, the innovative approach which the Greek Demo develops is tested in a simulated environment, even if historical data as well as real network data are going to be used.

Therefore, the customer engagement activities aim at making the Platone concept known, with a focus on the tools that are proposed by the Greek Demo solution (i.e., the variable network tariffs model). It is expected that in case of a future regulatory change, the Platone solution could be a basis to build on due to the events held, which familiarised the potential participants with the concepts developed in the Greek Demo. Also, so that we get as close as possible to a real customer engagement activity, a questionnaire has been shared with the general public to receive feedback on their willingness to participate in a flexibility market, in case the variable network tariffs model could be applied in the future. The questionnaire contains the variable Distribution Use of System Charges (DUoS) tariffs and the possibility of stakeholders to participate in flexibility market (future prospect). Analysing the answers received by this questionnaire will be key in understanding on what the acceptance of the Greek Demo solutions would be if the regulation allows for flexibility services based on DUoS in the future.

With respect to the above-mentioned task 4.5, a first introduction meeting was held on 21 January 2020 in combination with the General Assembly in Rome in which general approaches towards customer engagement were discussed. In a virtual workshop held on 10 February 2020, the responsible Platone project partners discussed the final approach of the origin concept for the series of co-creation events on user interaction.

3.4.1 Series of Co-creation Events on User Interaction

With the existing regulatory and legislative framework, customers in the sense of prosumers are not enabled to provide flexibility to the Greek DSO. Therefore, the origin concept of the series on user interaction of the Greek Demo was adapted and the focus was directed to the involvement of stakeholders, alongside DSO and TSO, mainly from industry, academia, and energy sector that have been identified being able to provide valuable feedback to the solutions that are developed.

The planned first innovation workshop as the start of the series of co-creation events on user interaction at the Greek Demo was postponed due to COVID-19 pandemic restrictions and finally took place on 18 February 2021. About 30 representatives of the energy sector met virtually in a three-hour session for a professional ideas’ exchange on the Platone solution that the Greek Demo proposes for increasing observability of the grid state and harvesting flexibilities for a more efficient operation of the grid.

Figure 10: Event on user interaction for the Greek Demo

The representatives of industry, energy regulatory authority, academia, DSO and TSO who attended gave positive feedback on the content and scope of the project in general and of the Greek Demo specifically. By informing the relevant stakeholders and receiving feedback on the need for enhanced grid observability, it was possible to anticipate possible challenges Platone might face especially during installation and commissioning of the PMUs so that they are successfully integrated in the Platone architecture, as well as possible gaps towards a future implementation of variable network tariffs schemes.

On 21 December 2022, the Greek Demo of the Platone project was invited to participate in the 1st Research Projects Dissemination Event organized by the Research and Innovation Department of HEDNO. The event was attended by 80 people across the company. The topic of this online workshop was flexibility, and the main focus was to present and investigate the benefits and the added value that relevant research projects and the solutions they present hold for HEDNO. The Director of the Research and Innovation Department opened the event, followed by an introductory presentation from the Deputy Assistant Director of the Strategy, Operational Planning & Transformation Department concerning the importance of flexibility in modern distribution systems. Afterwards, the projects CoordiNet, OneNet, X-Flex, TILOS, and Platone were presented. On behalf of Platone, researcher Effrosyni Maria Gralista presented the concept of the project in detail. The three Demos in Italy, Germany and Greece were the main focus with emphasis on the Greek Demo and how the tools developed (Platone Open Framework, State Estimation Tool, Variable Network Tariffs, PMUs) are implemented and how beneficial they can be for a DSO with the complexity of HEDNO. In the discussion that ensued, there was a particular interest concerning the PMUs and especially the placement sites, as well as the proposed installation method. The main takeaway message of the event was the importance that flexibility holds for the future of power grids in facilitating the energy transition and the integration of renewable energy sources as well as ensuring the reliability and continuity of supply of electricity.

3.4.2 Complementary Events with Focus on Customer Engagement

3.4.2.1 Open Day

The kick-off event for the Greek Demo was part of the virtual Greek Platone Open Day "Innovation for flexibility" on 24 November 2021. Platone consortium partners HEDNO and NTUA, hosted the event. The Platone project and the solutions proposed as part of the Greek Demo were presented. Furthermore, four H2020 projects presented their interim results, namely X-FLEX, PARITY, Smart4RES, SYNERGY. Two parallel interactive sessions covered the topics “Flexibility mechanisms: Market and Tariffs” and “Data and flexibility: Needs and Challenges”.

During the event, the participants were informed about the flexibility schemes that are part of the Greek Demo and their feedback was gathered.

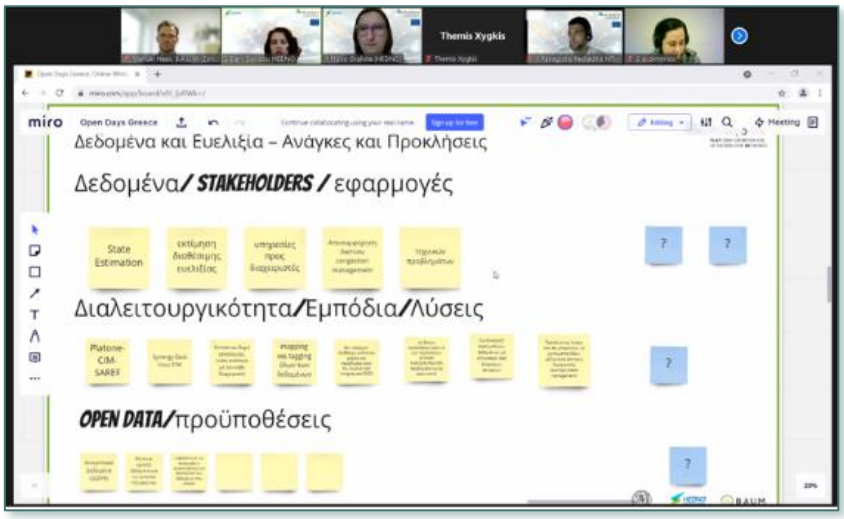

Figure 11: Virtual Open Day of the Greek Demo

3.4.2.2 Study Tour

The Study Tour for the Greek Demo took place on 30 June 2023 in the HEDNO Regional Office of Mesogeia. The scope of the event was to reach out a wider audience and communicate the message of Platone and the innovation that the Greek Demo offers to HEDNO. The event was attended by more than 50 employees, with most of them having a non-technical background. The Research and Innovation Division of HEDNO was represented as well. Members of the Greek Demo team from HEDNO and NTUA presented the key outcomes of the Greek Demo:

Stavroula Tzioka, project manager for the Platone Greek Demo (HEDNO) opened the event and made an introductory presentation concerning the Platone project as a whole and the Platone Open Framework as the key outcome of the project. Also, she set the scene for the Greek Demo in specific (objectives, core activities, implementation, etc.).

Effrosyni Maria Gralista (HEDNO) made a brief presentation on the PMUs and more specifically on the technical aspects of the PMUs installation. It was a great opportunity for the Greek Demo to highlight the fact that it is the first time that PMUs are installed for monitoring nodes of the distribution network in Greece.

Themis Xygkis (NTUA) presented the State Estimation Tool, a presentation that drew a lot of attention from the audience, since grid observability is a key enabler for improved distribution network operation.

Finally, Panagiotis Pediaditis, project manager for the purposes of Platone at NTUA, presented the DUoS tariffs tool, an innovative tool that can design appropriate DUoS tariffs that can effectively trigger flexibility provision. He showed how the tool's function was validated in the Greek Demo.

The event was very well received by the audience. Special interest was expressed for the PMUs implementation and data handling, as observability at the low voltage level is of great importance in the day-to-day maintenance and monitoring of the grid on a regional level. The discussions continued after the presentations at a working lunch. Members of the Greek Demo team were there to answer further questions of the audience and engage with the participants.

Figure 12: Study Tour Greek Demo, 30 June 2023

4 Lessons Learned

Valuable insights can be derived from both the design of the workshops on customer engagement, specifically looking at the series of co-creation events on user interaction, and the conduction of the workshops.

At the conceptual level, it became soon clear that the initial roadmap for the series of co-creation events on user interaction was too ambitious. The idea of early-stage user interactive workshops to test prototypes could not be realized, due to internal and framework conditions. Internally, trial site demos did not have prototypes or similar solutions/products ready for being tested at that early stage. Furthermore, feedback from the system relevant parties had to be collected first in order to define the framework and engagement options (active/passive) and their possible extends. Thus, the first customer engagement workshops in the Italian and the Greek Demo took place with system relevant stakeholders such as trials site integrated parties (DSO, aggregator, municipality operators, commercial prostormers). Accordingly, the following workshops took place with potential private and commercial end customers, to discuss their options to participate in the specific Platone demonstration. The German Demo, with Avacon leading the customer engagement process, started their engagement by contacting private households, informing of the local municipality about the project and field test setup, organizing press events with municipal members and informing of possible households and vendors of flexible assets and their possible chances to participate.

Regarding the Greek Demo, direct customer engagement was not feasible due to the current regulatory framework in Greece, that does not allow for procurement of flexibility services by the DSO. Thus, as a first step regarding the customer engagement a series of events with selected relevant stakeholders for the Greek Demo was held for raising awareness about the Greek Demo activities. More specifically, the Greek Demo investigated the effect of variable volumetric DUoS –instead of the current flat DUoS - that could happen in Greece at some point in the future. Hence, during the workshops on customer engagement held, the Greek Demo focused on familiarising the participants with this new narrative. Above that these events have been a great opportunity for the Greek Demo to highlight the fact that it is the first time that PMUs are installed for monitoring nodes of the distribution network in Greece. This was also reflected in the feedback from the participants: In each of the events they showed particular interest concerning the PMUs and especially the placement sites, as well as the proposed installation method. To compensate the lack of opportunities to engage customers directly, additionally a questionnaire was shared to the general public so that the Greek Demo receives feedback on the possibility of participation in a flexibility market based on variable DUoS in the future. The results from the analysis of the answers to the questionnaire that was share in project month 46 will be presented in D4.6., which will be submitted in project month 48 (August 2023).

By recognizing the mentioned problems early on, the concepts could be adapted according to the opportunities, challenges, and framework conditions of the Demos to approach the topic of customer engagement in the best possible way. With the adapted concept, the focus was less on the co-creation process with potential users and further relevant stakeholders for the development phase and more on the involvement of customers who should participate in the Demos. Above that the activities include actions aimed at engaging key stakeholders who have a relevant influence on the customer engagement processes within Platone. With the adapted concept and the implemented formats, very successful workshops could be held, which brought valuable feedback from the customers and further key stakeholders.

In the future, greater attention should be paid to ensuring that processes of the whole project are closely coordinated during development of the customer engagement concepts. The decision about which customers to involve in the user interaction workshop and when to engage them must fit the development plan of the project-specific solutions. In addition, more attention should be paid during concept development for customer engagement strategies to where the respective approaches, such as prototyping, really make sense and also which stakeholder can be meaningfully involved in these approaches.

In the future and from a legal perspective, it should also be clarified in advance to which extent customer engagement is possible. The example of the Greek Demo shows that the concept of customer engagement could not even be introduced there because customer engagement is not possible due to regulatory obstacles.

On the level of conduction of the workshops, the special challenges of the COVID-19 pandemic heavily affected the conduction of workshops on costumer engagement. It was originally planned to organize physical events where stakeholder interested in the Platone outcomes, can test and discuss functionalities of selected results. In-person interviews and workshops could have helped in gaining constructive feedbacks from customers and in fostering an increased exploitation level path. However, due to the COVID-19 pandemic, the conduction of physical workshops was restricted from March 2020 onward as physical contacts were either prohibited or limited. In detail, regulation of several companies in Germany, Italy and Greece highly regulated physical events. The events, which until then had been designed for physical presence, were initially only postponed, as the only way to engage customers seemed to be through physical presence, according to discussions with the consortium, especially with the responsible partners of the Demos. As the pandemic progressed, it was clear that physical events could only be implemented under very difficult conditions or not at all and alternatives to physical events had to be found, as the complete lifting of restrictions on physical meetings as well as travel activities was not foreseeable. As a result, the event concepts that had been based on physical presence until then were completely revised and virtual workshop formats were developed with innovative tools for virtual collaboration were used. Thus, in many cases, the formats based on physical meetings that had been common until then were very successfully replaced by completely virtual formats. They allowed to interact with customers and other key stakeholders supporting customer engagement in a feasible manner. Additionally, and as societies become more accustomed to virtual formats, it can be said in retrospect that the virtual formats did work well and offered numerous options for interactively engaging event participants. Nevertheless, the target group must always be kept in mind in this content: If the target group is not receptive to virtual formats, involvement is jeopardized from the outset. Therefore, and for future activities in this regard, explicit consideration should also be given to using event formats that are suitable for and accepted by the target group. Otherwise, the desired outcomes may not be accomplished. The Study Tours as a crucial element of the workshops on customer engagement, were initially scheduled to take place in the final phase of the project. Due to organizational reasons, the Study Tours in Italy and Greece were scheduled until the end of June. Consequently, they fell outside the time frame covered by this report. For the sake of completeness, the report on the Study Tours were included to ensure an overall view on all elements of the workshops on customer engagement. This has impacted the finalization of the deliverable, resulting in its submission being moved from project month 44 to project month 47.

Fundamentally, the workshops are only one part of a comprehensive customer engagement strategy and therefore cannot stand alone. However, as part of such a strategy, they have been very successful for Platone. The activities at all three Demos have shown that they have reached numerous customers and further stakeholders relevant to the project outcome through these events and have been a starting point for several further stakeholder engagement activities. Even in Greece, where the direct involvement of customers was not possible, the events opened an opportunity to discuss this topic, arise awareness and probably moving something on this topic in the medium term.

Overall, the workshops provide valuable feedback on the respective solutions. Nevertheless, the quantity of customers involved and above that the specificity of the solutions tested here allow mainly qualitative statements and are not representative. It is therefore particularly important to share the experiences at project level with other projects and initiatives, to pool them and to evaluate them in a higher-level context. Chapter 5 describes how the customer engagement experiences from the Demos have been incorporated into project tasks aimed at collaboration with other projects and cooperations on the topic of customer engagement.

5 Impact of the Activities on other Tasks of the Project

The consortium has effectively integrated the insights gained from the customer engagement workshops into various project tasks related to customer engagement. Furthermore, they have actively fostered knowledge exchange to enhance and refine customer engagement approaches and strategies in European joint activities with focus on stakeholder engagement.

In particular the following tasks of the project have been impacted:

- The activities in the Topic Group 1 "Effective strategies for engagement" and Topic Group 2 "Stakeholder characterization" within the working group (WG) on Consumer and Citizen Engagement of BRIDGE, the European Commission´s initiative which unites Horizon 2020 and Horizon Europe Smart Grid, Energy Storage, Islands, and Digitalisation Projects, [11] as part of the task 8.5 "Contribution to European Joint RDI efforts":
- The activities on the exchange with the projects of the ES-1-2019 call "Flexibility and retail market options for the distribution grid" as part of task 1.4 "Coordination with similar/twin projects":
- The collaboration with Canada as part of the tasks 1.4 and 7.5 "Replicability at International level - application to Canada, qualitative assessment" in WP7 on Scalability, Replicability, CBA.
- The activities on the FlexCommunity as part of the tasks 8.1 "Designing and implementing communications tools" and 8.4 "Preparing long-term adoption of Platone solutions".

In addition, the topic was introduced at various events, such as the annual conferences of the FlexCommunity, the Platone Midterm Conference and the Platone Final Conference.

5.1 Contribution to European Joint RDI Efforts on Customer Engagement

In the BRIDGE WG on Consumer and Citizen Engagement [11], partner B.A.U.M. and further Platone representatives have been paving the path for a process developing a coherent and coordinated characterization of stakeholder types, investigating their possible roles and parameters for engagement. Since 2022, B.A.U.M. leads the Topic Group 2 "Stakeholder characterization" which is closely connected to the Topic Group 1 "Effective strategies for engagement" in which the learnings from the stakeholder characterization will help development, adapt, and align future strategies of engagement. In this context, B.A.U.M. led the development of a stakeholder characterisation survey [12].

In the series of co-creation events on user interaction and throughout stakeholder engagement activities in the project, the naming of stakeholders, such as "(end) user", "customer", "operator" and "supplier" has not been consistent. As this issue is also relevant for coordination and dissemination activities with e.g., other H2020 projects, a coherent and coordinated definition and description of stakeholder types, their possible roles and parameters for engagement (i.e. barriers, drivers, current and future tasks and means of communication) was being developed in coordination with subgroup on customer engagement within BRIDGE and projects within ETIP SNET, the European Technology and Innovation Platform Smart Networks for Energy Transition and inspired by BRIDGE action on the Harmonised Electricity Market Role Model (HEMRM). This activity in form of a survey was still ongoing at the time of writing of this document. All characterized stakeholders have a direct or indirect role in the future energy system. The interim results of the survey are expected to be published with D8.6 "Summary of Platone contribution to BRIDGE WGs" in project month 48 (August 2023). The results of the survey are designed to support a harmonized understanding and communication and additionally supported the scalability and replicability analysis within Platone and should help the development of future strategies of engagement with a high variety of stakeholders involved in the future flexible energy system.

5.2 Coordination with Similar/Twin Projects on the Topic of Customer Engagement

In response to the ES-1-2019 call [8], Platone actively engages in knowledge exchange and collaboration with other H2020 projects, particularly those with overlapping partners. By fostering this exchange, Platone ensures comparability and maximizes the collective value of the projects funded under the same call. Among the seven additional projects funded under the ES-1 call – ebalance-plus, EUniversal, FEVER, FLEXIGRID, FlexiGrid, PARITY, and X-FLEX – Platone incorporates the insights

and expertise gained to enhance its own project activities. Customer engagement strategies were one of the topics of exchange.

To ensure the collaboration among project participant of the above-mentioned projects, two workshops referred to as ES-1 projects Cooperation Workshops were organized to allow fruitful knowledge sharing between these projects. The deliverable D1.6 “Report on twin projects coordination workshops” [2] documents this cooperation activities in detail. In both workshops, the topic customer involvement was explicitly addressed.

The first ES-1 projects cooperation Workshop took place virtually on April 26th, 2021. The event saw the participation of 75 representatives of the eight projects funded under the ES-1 call and the DEMI initiative in Canada. The topics for the breakout room discussions were chosen starting from the challenges to innovation addressed by the ES-1 call [8] , the regulatory analysis performed as part of WP1 and the regular exchanges among Platone partners. One of the five sessions was on customer engagement. Moderated by partner B.A.U.M. in which it was discussed what the advantages and disadvantages of passive (inform) and active (involve and understand) engagement strategies are, what kind of stakeholders and users the projects integrate and how especially the end-users were engaged in the projects.

Figure 13: First ES-1 Projects Coordination Workshop

The second ES-1 Projects Coordination Workshop took place virtually on December 6th, 2022. Two of the five breakout sessions were dedicated to customers: Customer engagement strategies (moderator: Andreas Corusa, B.A.U.M. Consult) and Energy communities and active user participation (moderator: Gianluca Nori, Acea Energia). A presentation of the stakeholder characterisation survey which was conducted as part of the BRIDGE initiative activities was provided, too. In this presentation, some insights were provided about how lesson learnt from different research projects can support the development of future engagement strategies.

Figure 14: Second ES-1 Projects Coordination Workshop

Thematic breakout rooms dedicated to customer engagement strategies:

The discussion first looked at the obstacles to customer engagement in local flexibility markets and identified three main ones: the (perceived) impact on lifestyle, the change in costs and potential revenues, and the barriers posed by regulation. It should be noted that, while electricity has historically been a low involvement good, current developments have made the role of the user in the power system increasingly interactive and visible and involvement strategies should evolve according to this change. Based on these findings, the projects recognised four target areas for policy action and engagement strategies. First, the design of action plans for education and communication. Second, the provision of incentives to minorities and stakeholder segments that are harder to reach. Third, the management of conflicts of interest among market stakeholders and last, the application of behavioural research and methods. Later, participants discussed the interaction across user engagement strategies and Information and Communication Technology. While digital solutions can offer support and increase outreach, engagement activities should not solely rely on them. The establishment of an emotional connection represents an important factor to gain the attention of involved stakeholders. The creation of a physical space for interaction, managed by experienced moderators or mediators, has proved to be beneficial. At the same time, barriers connected to the acceptance of new technologies should be taken into account: information needs to be communicated in a simple, understandable and trustworthy way.

In thematic breakout rooms dedicated to energy communities and active user participation a variety of topics were addressed. The projects first discussed the needs to be addressed for the active participation of Citizen Energy Communities (CECs) and Renewable Energy Communities (RECs) in flexibility solutions. Firstly, establishing effective communication with community members is fundamental. Technical aspects should be explained easily and understandably while benefits from participation for the community should be made clear. In this respect, the involvement of CECs and RECs through bottom-up approaches that leverage on social responsibility has proved to be successful. Secondly, minimum characteristics of CECs and RECs should be defined to allow both DSOs and prosumers to benefit respectively from the procurement and offering of flexibility. Lastly, the projects looked at the opportunities stemming from the cooperation between DSOs and ECs. CECs and RECs are a valuable platform to investigate user participation and understand their behaviour in a context in which social responsibility emerges as an important driver besides economic return. At the same time, CECs and RECs allow testing the provision of bundles of services to and from its members and evaluate the efficacy of implemented tools at an aggregated level. To this end, a recommendation from the projects' experience is to organise workshops with the involved communities and further stakeholders that have an impact on the interaction with the communities at the beginning of pilot operations to understand the characteristics of the involved CECs and RECs and optimally design interactions among stakeholders.

5.3 The FlexCommunity

In the light of Platone consortium partners having an active role in other H2020 projects focusing on

energy market related flexibilities, the idea emerged to aim for a general flexibility community. This general flexibility community should be open for all stakeholders interested in flexibility creation, management and trading. The community created as a joint collaboration of various H2020 projects on the one hand makes use of synergies between the projects. On the other hand, the community itself and thereby its potential members benefit from an enlarged reach and a larger network.

The FlexCommunity [13] was finally initiated by the projects FEVER, edgeFLEX and Platone and officially launched with an event in February 2022 which was joined by more than 150 participants. Project consortia from other H2020 or national research projects were invited as well as representatives from the European Commission and other relevant institutions and organisations. The WGs of the FlexCommunity referred to as the FlexGroups met regularly throughout 2022.

Since the official kick-off at the beginning of February 2022, the FlexCommunity has grown to more than 200 members, from academia to industry and policy. The founding projects are supported by other EU projects that are actively involved in the community. Partners and initiatives like E.DSO, ETIP SNET, OPEN DEI (Aligning Reference Architectures, Open Platforms and Large-Scale Pilots in Digitising European Industry) and the EC Directorate-General Energy (DG ENER) have shown their support by joining the official FlexCommunity events.

For the one-year anniversary of the FlexCommunity, a two-day online conference with a panel discussion, interactive workshops and FlexGroups meetings was organised on 22 and 23 February 2023 [14]. Representatives from Platone actively contributed to the panel discussion and sessions. The Platone related topic customer engagement was brought up in form of an interactive session presenting the stakeholder characterization survey and its preliminary results.

5.4 Customer Engagement Activities within the Collaboration with Canada

In addition to collaborations at the EU level, Platone has established a cooperation with the DEMI initiative in Canada. This initiative is a partnership between the Northern Alberta Institute of Technology (NAIT), ATCO, Siemens and the Future Energy Systems research programme at the University of Alberta. The Platone approach was brought by the University of Alberta to the “Towards future interconnected electric system” project funded under a Natural Sciences Engineering Research Council of Canada grant. The collaboration provided the potential of extending the Platone use cases to microgrid application and flexibility provision within this context, thanks to the testing and validation facilities of the Centre for Grid Innovation, built by DEMI in 2018 and located at NAIT.

As part of the collaboration with DEMI, two joint workshops were conducted in November 2020 and July 2022. The first workshop focused on the Platone Open Framework and the involvement of the University of Alberta in replicating the use of the platform on the Canadian site, networking with relevant stakeholders (particularly DSOs) for the adoption of the Platone solution and contributing to the Linux Foundation Energy WG in charge of supervising the long-term development of the platform. On the other hand, the second joint workshop focused on the insights from the scalability, replicability and Cost-Benefit-Analysis work conducted by Platone consortium partners RSE and NTUA in WP7 of Platone. The outcomes from the discussion led to the development of a questionnaire targeting Canadian stakeholders, especially representatives of regulators, DSOs, TSOs and system operators. The questionnaire will investigate regulatory conditions, technological state-of-the-art and stakeholder engagement levels to support the qualitative assessment of the replicability potential of Platone’s solutions to a set of new use cases. The outcomes of this evaluation will be elaborated in D7.5 (Replicability at International level -application to Canada), to be published at the conclusion of the Platone project.

6 Conclusion

Stakeholder engagement (which includes customer engagement) is a critical aspect of any project or decision-making process. It ensures that the concerns and interests of all stakeholders are considered and that decisions are made with the support and involvement of key stakeholders. The engagement strategies for different stakeholders may vary depending on their needs and interests and it's important to tailor the approach accordingly. Stakeholder engagement is essential to ensure that all parties involved are aligned and work together towards achieving a sustainable and secure energy system. Therefore, it is important how stakeholders and here especially the customers can be meaningfully and constructively involved in the design of the energy system.

With its stakeholder engagement approach, Platone fosters the growth and promotes integration of its solutions among not only DSOs, but also towards the other system and market operators involved in the energy system, unlocking new opportunities for a wider and more efficient flexibility market. To meet the strategic goals, the challenges and opportunities regarding addressable stakeholders, a strategic approach aims to inform and transfer knowledge to all stakeholder groups, to reduce barriers, e.g. for regulators or standardization bodies, to initiate, coordinate and manage the project´s stakeholder relationship, especially customer integration, e.g. within the Demos, active involvement of customers, for a FlexCommunity, harmonising with other projects responding to the same call and lateral project cooperation. To open options for actions, convince, gain synergy with and support the determining stakeholders are essential steps not only for a successful implementation and running of the Demos but also for later exploitations. Supported by several communication and dissemination activities, which have made the project highly visible, the consortium has a very good outreach.

With the stakeholder relationship activities focused on customer engagement, Platone has already initiated, coordinated, and established a strong relationship to a broad range of customers and key stakeholders with relevant influence on customer engagement processes as well as later target groups. With the idea of the series of co-creation events on user interaction – even in the adapted concept - and the complementary events on customer engagement, Platone has successfully managed to put customers and further key stakeholders with influence on customer engagement at the centre to investigate their needs and expectations. The Platone specific and not representative experiences on customer engagement were successfully applied onto other tasks of the project and incorporated in activities outside the project in European joint activities with focus on stakeholder engagement and in the cooperation with Canada to ensure that the results are shared and evaluated in a higher-level context.

In addition to the concrete lessons learned from the implemented activities, it becomes clear, that the overall data situation about customer engagement is still weak in certain areas. This is why the BRIDGE Stakeholder Characterization Survey is so interesting. While the Platone project ends in August 2023, the BRIDGE activities regarding customer engagement will continue to improve stakeholder engagement and develop future strategies. The large-scaled BRIDGE Stakeholder Characterization Survey paves the path for a process developing a coherent and coordinated description of all types of stakeholders in the energy system, investigating their possible roles and parameters for engagement. By creating a comprehensive stakeholder map, we can gain a better understanding of their needs and ultimately identify stakeholder clusters and helping project consortia understand themselves and the related or targeted stakeholders, among them the customers, better.

7 List of Figures

8 List of References

[1] European Commission, “2050 long-term strategy”, [Online]. Available: https://ec.europa.eu/clima/policies/strategies/2050_en

[2] Platone Deliverable D1.6 Report on twin projects coordination Workshops (2023). [Online] Available: https://www.platone-h2020.eu/Project/Deliverables

[3] Platone Deliverable D3.7 Italian Demo: Report of customer involvement (2021). [Online] Available: https://www.platone-h2020.eu/Project/Deliverables

[4] Platone Deliverable D8.4 Intermediate report on the stakeholder engagement, exploitation, dissemination, communication and standardization activities (2021). [Online] Available: https://www.platone-h2020.eu/Project/Deliverables

[5] Platone Deliverable D8.10 Exploitation and Marketing Plan for the involvement of partners and future customers (v2) (2022). [Online]. Available: https://www.platone-h2020.eu/Project/Deliverables

[6] Hasso Plattner Institute for Digital Engineering gGmbH, “What is Design Thinking?”, [Online]. Available: https://hpi.de/en/school-of-design-thinking/design-thinking/what-is-design-thinking.html

[7] Second interproject workshop [Online]. Available: https://www.platone-h2020.eu/Events/1046/Second-interproject-workshop

[8] European Commission, Call “Flexibility and retail market options for the distribution grid” (TOPIC ID: LC-SC3-ES-1-2019), [Online]. Available https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-sc3-es-1-2019

[9] Apio s.r.l. (2022). Flessibili (0.17) [Mobile app]. Google Play. https://play.google.com/store/apps/details?id=it.apio.flessibili

[10] Successful study tour of the Italian Demonstration, 20/06/2023. [Online]. Available: https://platone-h2020.eu/News/2280/Successful-study-tour-of-the-Italian-demonstration

[11] BRIDGE Working Group on Consumer and Citizen Engagement [Online]. Available: https://bridge-smart-grid-storage-systems-digital-projects.ec.europa.eu/working-groups/consumer-and-citizen-engagement

[12] Stakeholder Characterisation Survey [Online]. Available: https://s2survey.net/stakeholder/

[13] The FlexCommunity, [Online]. Available: https://flex-community.eu

[14] FlexCommunity Conference 2023. [Online]. Available: https://flex-community.eu/Events/14/FlexCommunity-Conference

9 List of Abbreviations

Abbreviation	Term
ALF-C	Avacon Local Flex Controller
AMR	Automatic Meter Reading systems
CDU	Christian Democratic Union of Germany
CBA	Cost-benefit analysis
CEC	Citizen Energy Community
CEO	Chief Executive Officer
COVID-19	Coronavirus disease 2019
CTO	Chief Technology Officer
DEMI	Canadian Distributed Energy Management Initiative
DER	Distributed Energy Resources
DG ENER	EC Directorate-General Energy
DSO	Distribution System Operator
DUoS	Distribution Use of System Charges
EC	European Commission
ES-1-2019	LC-SC3-ES-1-2019 call “Flexibility and retail market options for the distribution grid” (ES-1-2019)
ETIP SNET	European Technology and Innovation Platform Smart Networks for Energy Transition
EU	European Union
FDP	Free Democratic Party
HEDNO	Hellenic Electricity Distribution Network Operator
HEMRM	Harmonised Electricity Market Role Model
INEA	Innovation and Networks Executive Agency
NAIT	Northern Alberta Institute of Technology
PMU	Phasor Management Unit
RDI	Research, development and innovation
REC	Renewable Energy Community
SCADA	Supervisory Control and Data Acquisition
TSO	Transmission System Operator
WG	Working group
WP	Work package