Platone

PLATFORM FOR OPERATION OF DISTRIBUTION NETWORKS

Platone

PLATform for Operation of distribution NEtworks

D4.6

Report on lessons-learned from the customer engagement methodologies

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Abstract

The deliverable D4.6 “Report on lessons-learned from the customer engagement methodologies” focuses on Task 4.5 “Customer engagement methodologies” within Work Package 4 of the Platone project. This report provides valuable insights and lessons learned from the developed methodologies on customer engagement. It outlines the concept of a series of events and workshops aimed at fostering user interaction, and discusses the outcomes and findings related to stakeholder involvement. This document also includes a report on a questionnaire that was distributed to relevant stakeholders. The customer engagement activities yielded significant insights and knowledge. Stakeholders from the energy sector demonstrated strong interest, actively participating in workshops focused on innovative concepts for the future of distribution grids. Additionally, stakeholders showed keen interest in the technical implementation of Platone, particularly regarding Phasor Measurement Units (PMUs) and their grid advantages. The user engagement questionnaire revealed customers' willingness to engage in the flexibility market, especially with financial incentives. However, providing adequate information is vital to empower customers in responding to flexibility provision requests and adjusting consumption patterns confidently. Overall, these findings underscore the importance of transparent information and incentives for active customer participation in flexibility markets and can guide future projects like Platone while informing consultations on flexibility services and Variable Distribution Use of System (DUoS) tariffs design.

Keyword list

Customer engagement – stakeholder involvement – variable DUoS tariffs – flexibility services – PMU

Executive Summary

"Innovation for the customers, innovation for the grid" is the vision of the project Platone - Platform for Operation of distribution Networks. As part of the H2020 programme "A single, smart European electricity grid", Platone addresses the topic of "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 (RES). DSOs require new ways of managing the increased number of producers, end users and more volatile power distribution systems of the future.

To address these challenges, Platone utilizes 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 establish an open, secure and adaptable system that enables distribution grid flexibility and congestion management mechanisms, through innovative energy market models involving all the possible actors at many levels (DSOs, TSOs, customers, aggregators). The Platone Open Framework is an open source solution based on blockchain technology to ensure secure and shared data management. It allows for standard and flexible integration of external solutions (e.g. legacy solutions), and is open to integration of external services through standardized open Application Program 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 establish connections with traditional TSOs. The Platone Open Framework will be tested in three European demos and within the Canadian Distributed Energy Management Initiative (DEMI).

The focus of this deliverable is to present the customer engagement methodologies implemented by the Greek Demo and the lessons learned that were gained throughout the process. The approach favoured by the Greek Demo team was the organization of workshops, along with the composition and dissemination of a questionnaire in order to gauge public opinion about the solutions that Platone proposes, namely the variable Distribution Use of System (DUoS) tariffs.

A questionnaire was deemed necessary because there is not yet a provision for the procurement of flexibility services to the DSO from the customers as well as sandboxes for such approaches in the regulatory framework of Greece. The findings showed that customers are open to participating in flexibility markets, particularly when offered financial incentives. Nonetheless, it is crucial to provide customers with sufficient information to enable them to respond to flexibility provision requests and adjust their consumption patterns confidently.

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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 more easily become flexibility market players. 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 demos (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”.

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 [4]. The Platone project solution within the Greek demo in specific, envisages a variable DUoS tariff scheme policy as the means for the customers’ participation in flexibility provision. However, at the moment in Greece there is no regulatory framework in effect that defines details of flexibility services procurement and there are no sandboxes that would allow the testing of such schemes. Therefore, the development of a user-centric approach in this case could only be realised in a proactive manner, based in a future scenario that these flexibility markets will evolve at some point, focusing mainly in informing the potential customers about them via a series of workshops and events.

1.1 Task 4.5

This deliverable presents the outcomes of Task 4.5 “Customer engagement methodologies” within the Platone project. The customer engagement activities for the Greek Demo consisted of engagement workshops (virtual due to Covid-19 restrictions) and a study tour (with physical attendance). Additionally, a questionnaire was sent out to gauge customer willingness to participate in flexibility schemes should these get formulated by a relevant framework in Greece in the future.

1.2 Objectives of the Work Reported in this Deliverable

This deliverable provides an overview of the activities related to customer engagement for the Greek Demo and reports on the lessons learned from this process.

1.3 Outline of the Deliverable

Chapter 2 outlines the methodologies developed to follow a user-centric approach referring to customer involvement actions.

Chapter 3 provides insights into the user engagement workshops that were held and highlights the outcomes for relevant stakeholders.

Chapter 4 presents the main takeaways from the user engagement questionnaire.

Chapter 5 focuses on the lessons learned from the customer engagement questionnaire, which was prepared by the Greek demo team and was circulated to a diverse audience including individuals from the energy and academia sectors, as well as people from the general public.

The detailed customer engagement questionnaire and the results of the questionnaire data processing are included in the Annex for reference.

1.4 How to Read this Document

This deliverable reports on lessons learned from the customer engagement methodologies as part of Task 4.5.

For an in-depth understanding of the project work that contributed to the organisation and the content of engagement actions described above, the following documents are referred to for further information in this deliverable: D8.4 [2], D8.10 [3], and D1.5 [4], which respectively provide information about the dissemination and exploitation methodologies developed (D8.4) and applied (D8.10), as well as the customer engagement reports for each demo (D1.5).

2 Methodology & Strategic Approach

The increasing penetration of renewable energy sources has widen the role of customers in energy systems. Before this rapid energy transition, customers were purely consumers of electricity, but nowadays they have become more like energy sector stakeholders, since they can be not only consumers in the traditional way, but also aggregators, prosumers, flexibility services providers, playing a novel significant role in power systems operation. To this end, when it comes to evaluate new ideas for network operation, the assessment of the actual needs and expectations of the stakeholders is essential to develop an efficient user-centric approach, leveraging effective communication techniques to attract their interest and incentivise their participation in the proposed solution. By gaining insights into the stakeholders' needs, the project can tailor its approach accordingly and form solutions that address their specific concerns. This involves understanding their perspectives, challenges, and requirements to ensure that the proposed solutions align with their interests.

A core proposal developed by the Greek demo within Platone to be tested in the pilot site of Mesogeia was the use of algorithmically designed variable DUoS tariffs that would activate flexible loads' shifting for an efficient distribution network operation. However, DUoS by their nature are regulated by the National Regulatory Authority (NRA) of Greece, hence a real-life environment test of the solution with active customer participation was not feasible [7]. Also, there is no provision for regulatory sandboxes which would enable the testing of the variable DUoS tariffs scheme in small scale. Therefore, the Greek demo taking into account such restrictions, focused on developing various methods to raise awareness about their innovative proposal and to provide the customers with deeper knowledge of distribution network operation and flexibility services themselves. That would remain a valuable investment for the future, considering that well-informed customers are expected to be keener to participate in any future electricity markets. The customer engagement strategy for the Greek demo comprised the engagement of different stakeholders via series of workshops as detailed in Chapter 3 and the collection of feedback on Greek demo solutions via a questionnaire as analysed in Chapter 4.

The typical customer for the Greek demo is not an actual participant who tests the solution since this was not achievable, but he/she is any stakeholder or electricity end-user, who in the future could become the customer acting under a variable DUoS tariffs scheme. Hence, for the purposes of the customer engagement strategy of the Greek demo, the terms stakeholder, end-user and customer are used interchangeably and sit under the same umbrella. The series of workshops organised by the Greek demo had a clear focus on developing methods that effectively convey the benefits and value of the Platone concept as whole as well as the innovative solutions developed by the Greek demo in specific. The workshops were attended by representatives from various sectors such as industry, academia, research, energy sector, local municipality, as well as the Greek DSO (HEDNO) and TSO (IPTO).

It should be noted that the events organised by the Greek demo became a great opportunity for them to present and discuss apart from the variable DUoS tariffs model [6], some more technical, DSO related aspects of the project like the advanced grid observability achieved by the State Estimation tool developed within Platone as well as its potential benefits in distribution network monitoring in the future.

Last but not least, it was decided to share an appropriately designed questionnaire aiming to inform the respondents about the innovative approach of the variable DUoS tariffs and providing them with a clear understanding of its principles and advantages. In essence, this questionnaire was designed and shared in order to gather information about the public's willingness to modify their energy consumption patterns in a hypothetical scenario where the variable DUoS tariffs offer an economic incentive. The feedback of this questionnaire can be exploited in the future for any open consultation on flexibility markets, flexibility services, DUoS tariffs design.

3 User-Engagement Workshops

In the following sections, the series of user-engagement workshops that Platone Greek demo hosted and participated in is presented. Due to the Covid-19 pandemic most of the engagement activities that took place under the auspices of the Greek Demo were conducted virtually, via Zoom or Microsoft Teams, with the exception of the study tour that was held physically in 2023.

3.1 Platone Engagement Workshop

The first innovation workshop, which marked the beginning of the co-creation events on user interaction for the Greek demo, had to be rescheduled due to COVID-19 restrictions. It finally took place on February 18th 2021, in a virtual format. Approximately 30 representatives from the energy sector participated in a three-hour session, engaging in a professional exchange of ideas and insights regarding the Platone solution proposed by the Greek demo, which includes enhanced grid observability and optimized grid operation by harnessing the available flexibility of the network, see Figure 1.

Figure 1: Event on user interaction for the Greek demonstration.

The event was attended by representatives from various sectors including industry, energy regulatory authority, academia, DSO and TSO. The purpose of the workshop was to inform these stakeholders about the importance of enhanced grid observability and gather feedback from them. By engaging with the stakeholders, the Platone project aimed to identify potential challenges that could arise during the installation and commissioning of the Phasor Measurement Units (PMUs) and ensure their successful integration into the Platone architecture. Additionally, the workshop aimed to identify any gaps or obstacles that would need to be addressed for the future implementation of a proposed variable DUoS tariffs scheme. The insights and feedback gathered from the stakeholders during the workshop were valuable in understanding potential issues of a future variable DUoS tariffs framework, like for example the public acceptance of DUoS that vary from one location/ time of the day to another and the necessity of country-wide smart meters installations so that the electricity consumption is measured in high granularity to enable the respective billing.

3.2 Platone Open Day

On November 24th 2021, the Platone Open Day was held as a virtual event on the Zoom platform. The decision to host the event online was made in response to the Covid-19 restrictions that were in place at that time in Greece. The purpose of the event was to showcase the solutions developed as part of the Greek Demo within the Platone project. The session was attended by approximately 40 participants from HEDNO and NTUA who had the opportunity to learn about the innovative solutions and advancements made within the Greek Demo.

Furthermore, to emphasize the importance of flexibility and digitalization of the grid, the following H2020 projects were also presented by projects' representatives:

1. X-FLEX (integrated energy solutions and new market mechanisms for an eXtended FLEXibility for the European grid).

2. Parity (Prosumer AwaRe, Transactive Markets for Valorization of Distributed flexibilitY enabled by Smart Energy Contracts).
3. Smart4RES (Next Generation Modelling and Forecasting of Variable Renewable Generation for Large-scale Integration in Energy Systems and Markets).
4. SYNERGY (Big Energy Data Value Creation within SYNergetic enERGY-as-a-service Applications through trusted multi-party data sharing over an AI big data analytics marketplace).

Two parallel interactive sessions took place, concerning:

1. Flexibility mechanisms: Market and Tariffs (Figure 2).
2. Data and flexibility: Needs and Challenges (Figure 3).

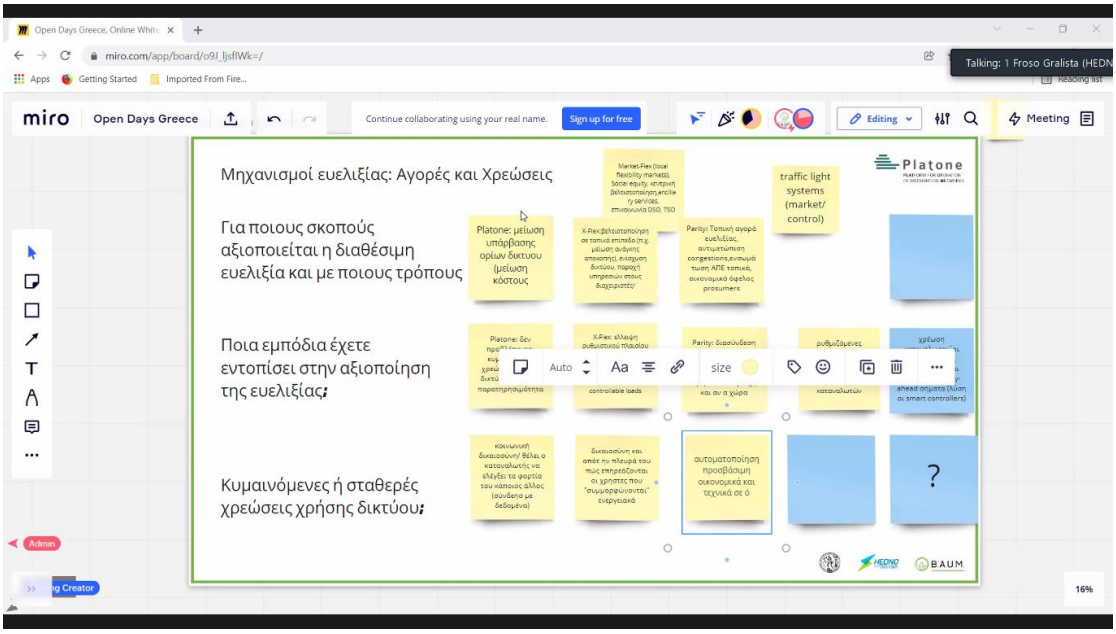

Figure 2: Parallel session of Flexibility Mechanisms (Miro Board).

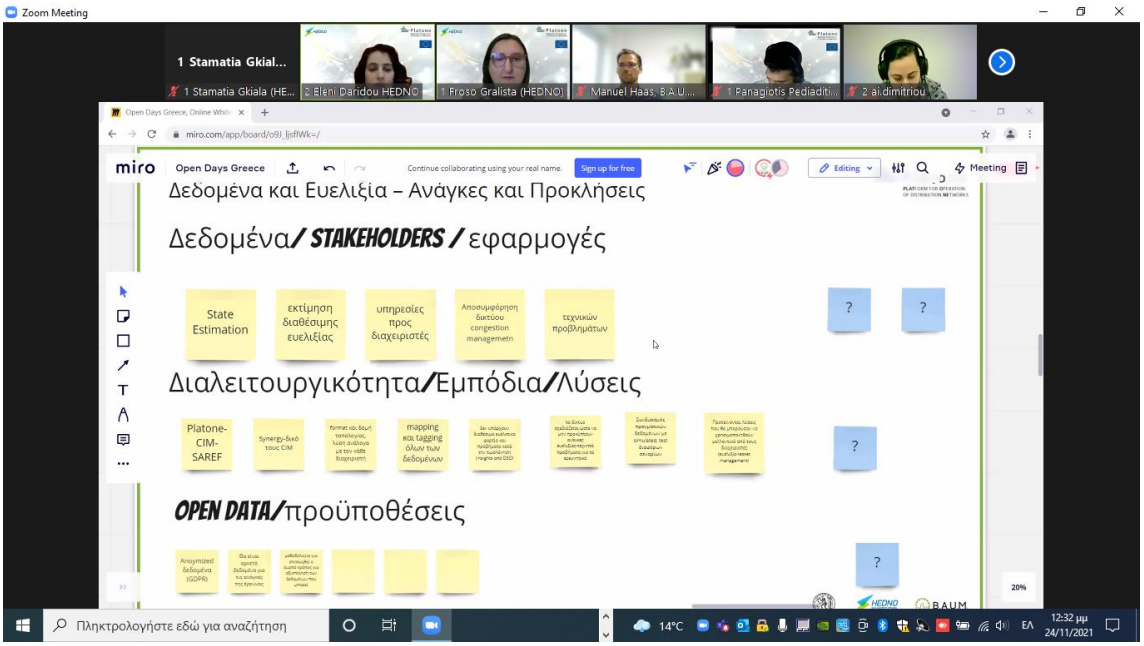

Figure 3: Parallel Session on Data and Flexibility (Miro Board).

What became apparent from the day was that the energy data management and systems' interoperability are common challenges for the problems that the H2020 projects are looking to address and they need to be resolved effectively before flexibility markets are considered ready for actual

participants. Also, a fruitful discussion took place regarding the socioeconomic effect that a variable DUoS tariffs scheme would have as well as technical aspects of its implementation in the future (e.g. how the customers would be notified about the DUoS, how it would affect technically the actual billing, etc).

3.3 First Research Projects Dissemination Event

On December 21st, 2022, the Greek Demo of the Platone project participated in the 1st Research Projects Dissemination Event organized by the Research and Innovation Department of HEDNO (Hellenic Electricity Distribution Network Operator). The online workshop focused on flexibility and aimed to showcase the benefits and added value that relevant research projects and their proposed solutions hold for HEDNO. The event was attended by 80 people across the company.

The workshop began with opening remarks from the Director of the Research and Innovation Department, followed by an introductory presentation by the Deputy Assistant Director of the Strategy, Operational Planning & Transformation Department, highlighting the significance of flexibility in modern distribution systems. Subsequently, several projects including CoordiNet, OneNet, X-Flex, TILOS, and Platone were presented.

On behalf of Platone, researcher Effrosyni Maria Gralista provided a detailed overview of the Platone project with a specific focus on the three demo sites in Italy, Germany, and Greece. Emphasis was placed on the Greek Demo and the implementation of the developed platforms, tools and advanced metering systems (Platone Open Framework, State Estimation Tool, Variable DUoS Tariffs, PMUs), highlighting their potential benefits for HEDNO, considering its complex operational environment. In the discussion that ensued there was 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 critical role of flexibility in the future of power grids, facilitating the energy transition and the integration of renewable energy sources as well as ensuring the reliability and continuity of the supply of electricity.

3.4 Study Tour for the Greek Demo

On June 30th, 2023, the Study Tour for the Greek Demo of Platone took place in the HEDNO Regional Office of Mesogeia. It was the first physically attended event on engagement that the Greek Demo hosted, after Covid-19 restrictions were eased. The scope of the event was to reach a wider audience and effectively communicate the message of Platone and the innovative solutions it offers to HEDNO. The event was attended by more than 50 employees, most of whom had a non-technical background. The event consisted of presentations delivered by members of the Greek Demo team.

Stavroula Tzioka, the Project Manager of the Platone Greek Demo for HEDNO, opened the event with an introductory presentation on the Platone project as a whole, focusing on the Platone Open Framework as the key outcome of the project. Also, she set the scene for the Greek Demo in specific by presenting the demo objectives, core activities, implementation, etc.

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

Themis Xygkis from NTUA introduced the State Estimation Tool. This presentation drew a lot of attention from the audience as grid observability plays a vital role in improving the operation of the distribution network.

Finally, Panagiotis Pediaditis, the Project Manager for NTUA for the purposes of Platone, presented the variable DUoS Tariffs tool, an innovative tool capable of designing appropriate DUoS tariffs that effectively stimulate flexibility provision. Panagiotis demonstrated how the tool's functionality was validated within the Greek Demo. He also made an introductory presentation for the EV4EU Horizon project, whose pilot site will also be located in the Mesogeia area.

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 (LV) 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 organized by the Greek Demo, providing an opportunity for participants to be further involved. Also, Theodoros-Panagiotis Stathakopoulos and Thomas Mitsopoulos, members of the Greek Demo team, were there to answer further questions from the audience and engage with the participants. Finally, the Research and Innovation Division of HEDNO was also represented at the event (for the pictures of the event see Figure 4).

Figure 4: Presentations for the Study Tour of the Greek Demo.

4 Questionnaire on user-engagement

As analysed in Chapter 2, the user engagement questionnaire was designed with the intention to gauge public interest in flexibility schemes based on variable DUoS tariffs. In particular, the questionnaire focused on assessing the stakeholder's willingness to shift their energy consumption and modify their electricity consumption patterns driven by signals of variable DUoS tariffs.

The questionnaire was shared among 45 participants and it included 11 questions regarding a potential future employment of a flexibility market policy. The results are demonstrated below in Figure 5 to Figure 15.

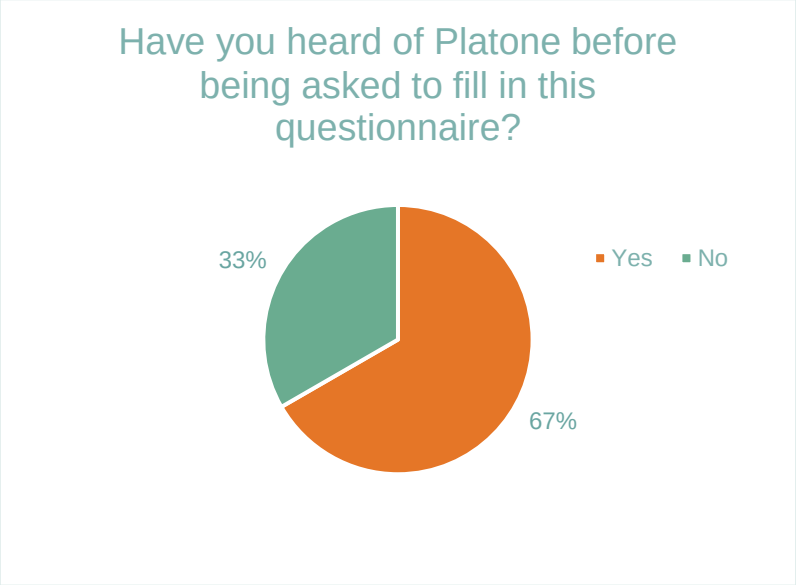

Figure 5: Have you heard of Platone before being asked to fill in this questionnaire?

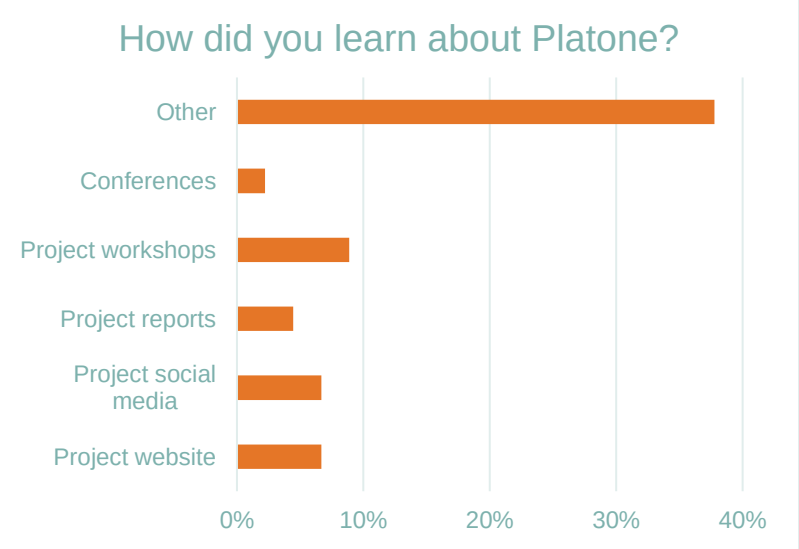

Figure 6: How did you learn about Platone?

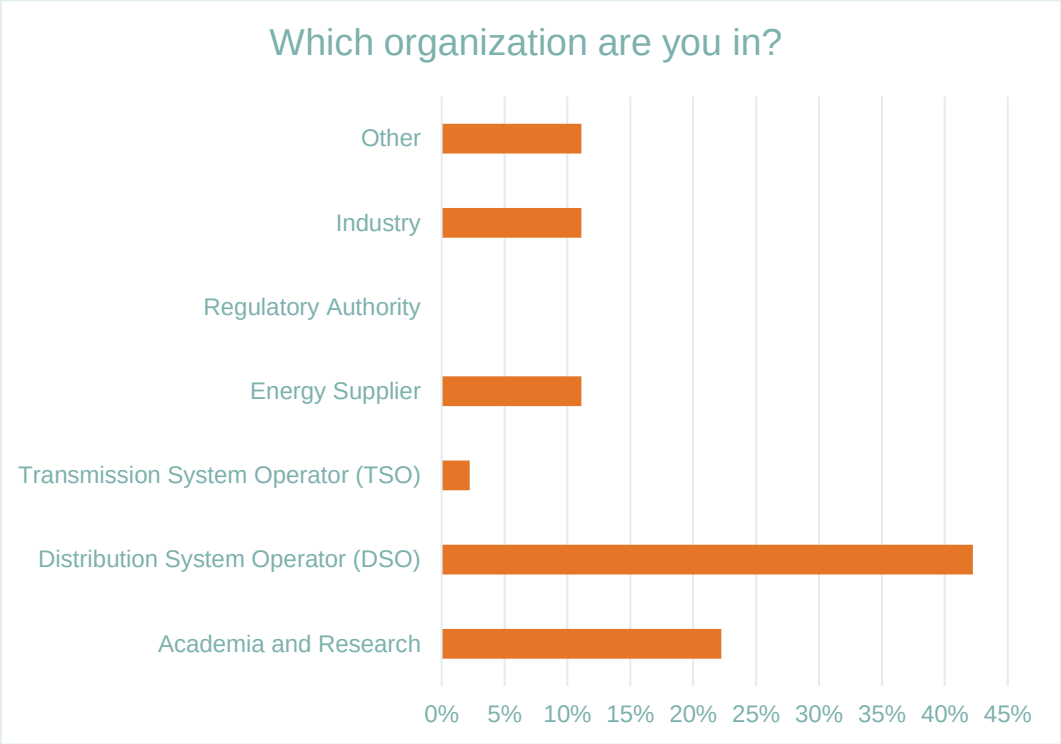

Figure 7: Which organization are you in?

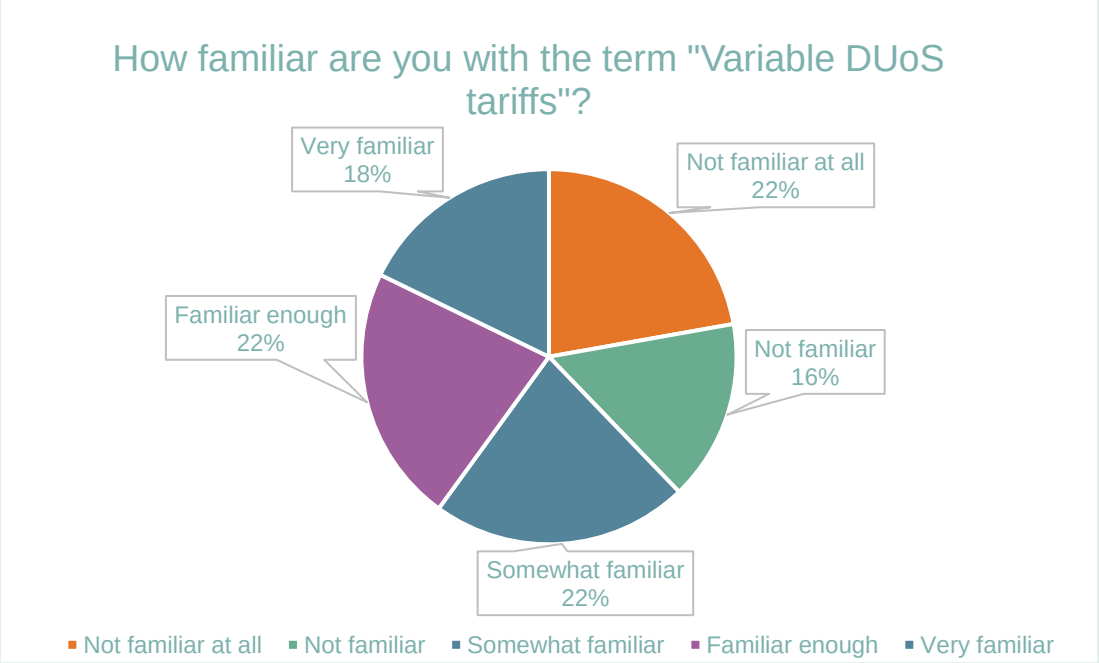

Figure 8 Familiarity with the term "Variable DUoS tariffs"

Figure 6 demonstrates that Platone project became known mainly through peer-to-peer communication among individuals ('Other'), as many HEDNO employees outside the project's workspace showed great interest in the innovative solution of the Greek demo. Also, Figure 6 verifies that efforts within the DSOs, like the Greek demo workshops which were indeed well-attended, can increase awareness of people in corporations who can potentially contact future customers and stakeholders. Then, DSO activities related to Platone inside social media can additionally help reaching out to more people in the future. As it can be noted in Figure 7, the majority of the respondents works for the Greek DSO or the Academia and Research sector. Regarding peoples' familiarity with the innovative Greek demo solution the fact

that only an 18% of the respondents stated that they were ‘very familiar’ with the term ‘variable DUoS tariffs’ reveals that the Greek demo customer-engagement strategy focusing on organizing all these raising awareness events was the right way forward, so that people get more and more informed, as most of them do not easily come across such new flexibility market concepts (Figure 8).

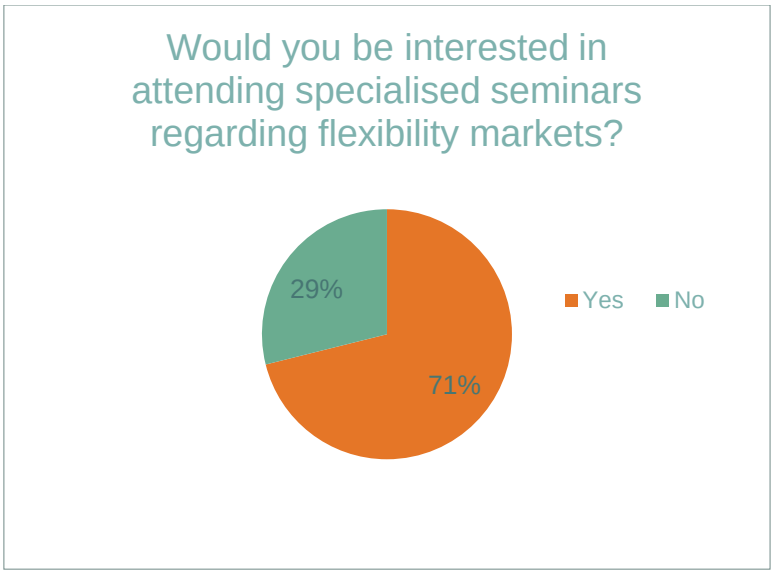

Figure 9: Interest in attending specialised seminars regarding flexibility markets

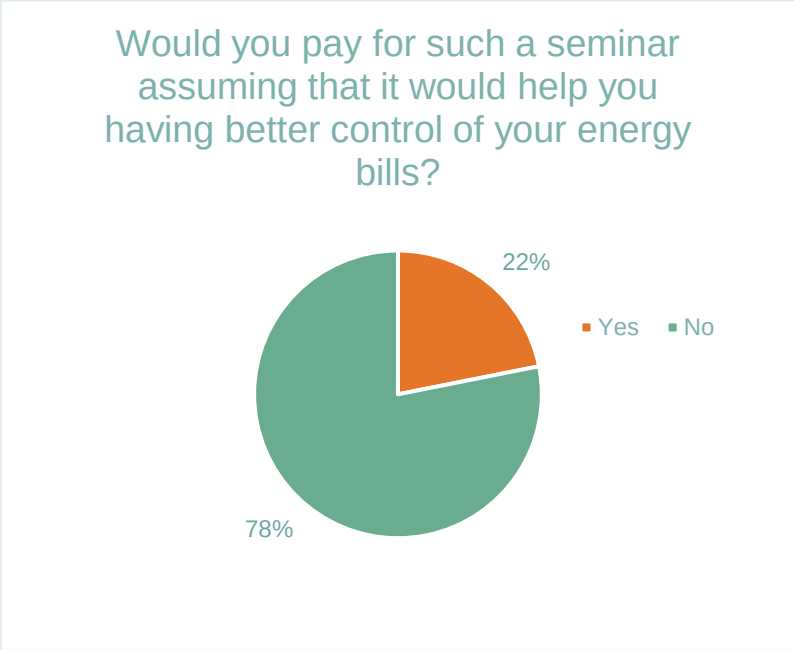

Figure 10: Would you pay for specialised seminars to better control your energy bills?

It is worth mentioning that positive feedback was received from the 45 participants, as 71% expressed high interest in participating in a flexibility market based on the variable DUoS tariff model policy (Figure 9). In fact, the majority of the stakeholders indicated that they would even be willing to participate in free seminars to get informed about the innovative solution proposed by the Greek demo (Figure 10).

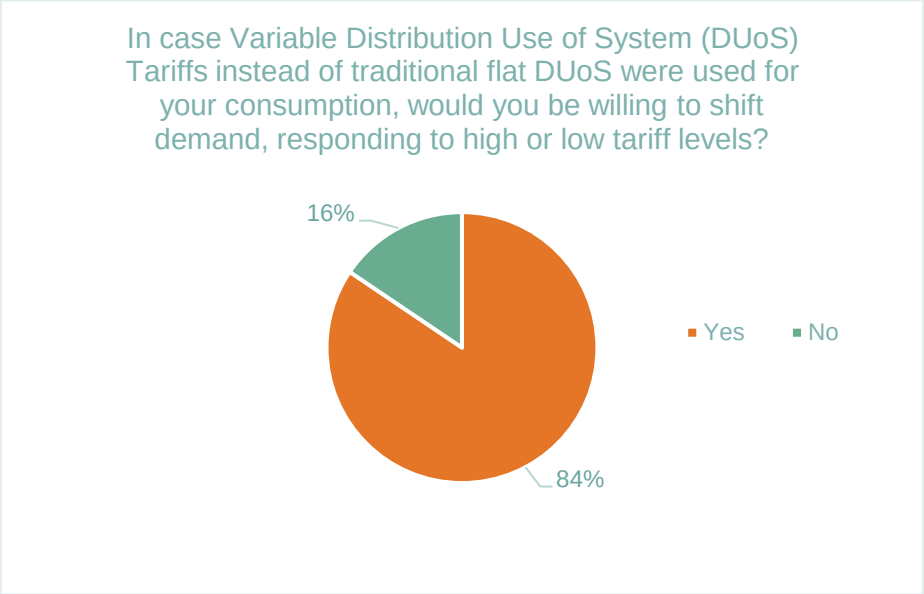

Figure 11: Intention to shift demand in response to Variable DUoS Tariffs

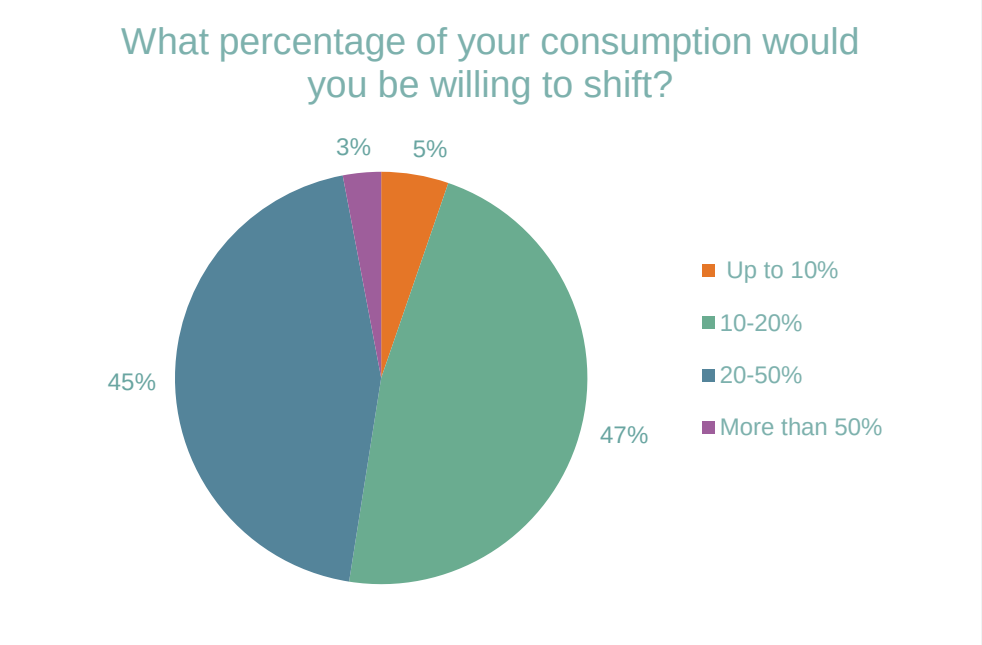

Figure 12: What percentage of your consumption would you be willing to shift?

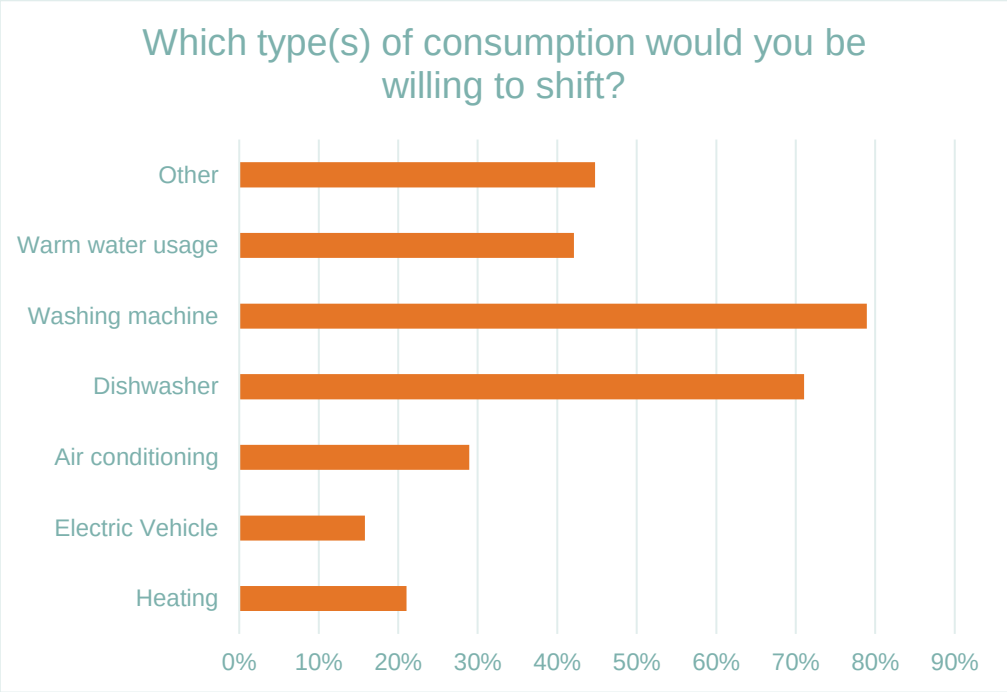

Figure 13: Which type(s) of consumption would you be willing to shift?

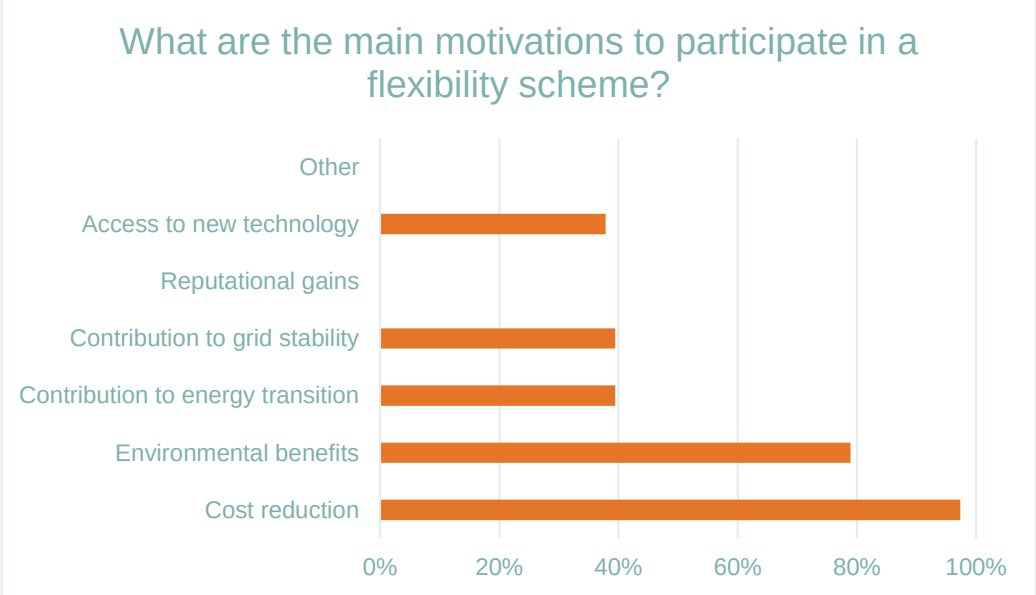

Figure 14: Motivations to participate in a flexibility scheme

Furthermore, regarding demand shifting actions, 84% of the total number of the respondents expressed their willingness to shift energy consumption (Figure 11), with 92% of them being ready in theory to shift 10%-50% of their consumption (Figure 12). The main demand shifting actions selected included the usage of housing appliances, such as dishwashers, washing machines, water heaters, and air-conditioning (Figure 13). The responders would shift their electricity demand to benefit from both financial and non-financial incentives, such as cost reduction, environmental benefits, and contribution to the energy transition, as well as grid stability (Figure 14).

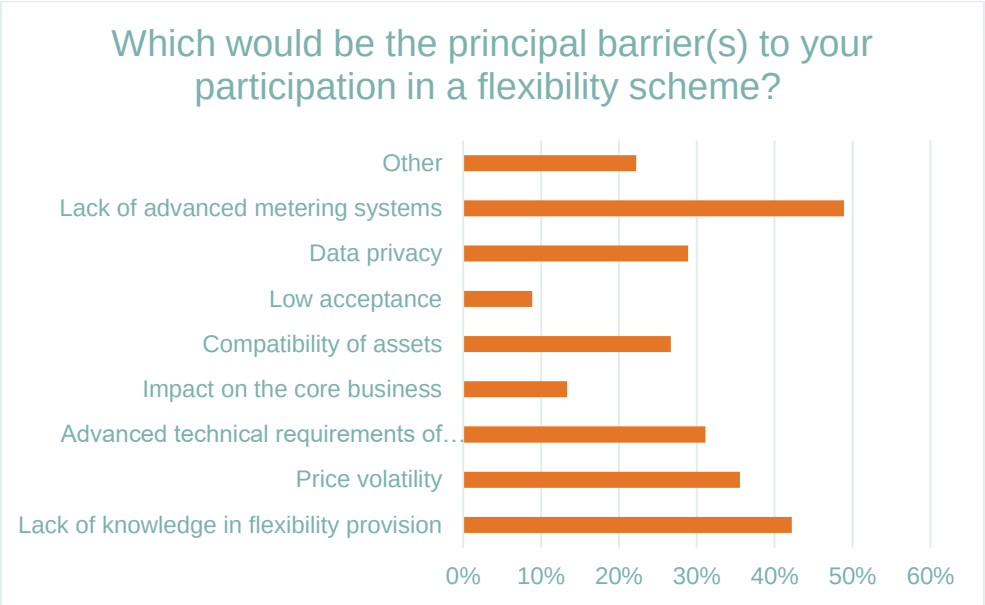

Figure 15: Barrier(s) to your participation in a flexibility scheme?

Finally, many participants expressed their concerns regarding their participation in flexibility markets since many principal barriers such as lack of knowledge in flexibility provision and advanced metering systems could hinder their ability to shift their energy consumption (Figure 15). However, the innovative solution developed within the context of the Greek demo could be a basis to build upon in the future.

A lesson learnt from this whole survey process was that in this type of questionnaire, 'other' could always be provided as an option, but it should be followed by a compulsory-to-fill-in box for free text so that the respondent can explain his/her choice. That would enable a more insightful assessment/analysis of the results.

For more information regarding the design of the questionnaire, please refer to the Annex of this report.

5 Conclusion

When considering the insights and knowledge gained from the customer engagement activities during the four-year duration of Platone, the following key points emerge:

- There is significant interest from all stakeholders in the energy sector as evidenced by the attendance at the workshops on the innovation that research projects like Platone propose for the future of distribution grids.
- There is also keen interest in the technical implementation of Platone, with particular focus on the PMUs and the advantages that they offer to the grid.
- The user-engagement questionnaire results indicate that customers are willing to participate in flexibility markets, especially when there is a financial incentive involved. However, it is important to provide adequate information to customers in order for them to confidently respond to requests for flexibility provision, and eventually modify their consumption patterns.

In short, the customer engagement activities have highlighted the enthusiasm and interest among stakeholders in the energy sector, as well as the importance of providing clear information and incentives to customers for their active participation in any form of flexibility market. These insights can guide future developments and improvements in the implementation of projects similar to Platone, and also, they can be taken into consideration in any future consultations on flexibility markets, flexibility services, DUoS tariffs design.

Finally, it is crucial to acknowledge the project's dedication to engaging stakeholders in the flexible energy system and how this engagement has been perceived by those who interacted with them. This work was carried out as part of the BRIDGE initiative, and the significant outcomes are presented in Deliverable 8.6 [5] entitled as "Summary of Platone contribution to BRIDGE WGs." This deliverable serves as another important piece in understanding customers and stakeholders more comprehensively and contributing to a better overall perception of effective strategies for engaging customers.

6 List of Figures

7 List of References

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

[2] “D8.4 Intermediate report on the stakeholder engagement, exploitation, dissemination, communication and standardization activities”, Platone EU Horizon 2020 Project, 2021, [Online]. Available: https://platone-h2020.eu/

[3] “D8.10 Exploitation and Marketing Plan for the involvement of partners and future customers v2)”, Platone EU Horizon 2020 Project, 2023, [Online]. Available: https://platone-h2020.eu/

[4] “D1.5: Report on customer engagement methodologies”, Platone EU Horizon 2020 Project, 2023, [Online]. Available: https://platone-h2020.eu/

[5] “D8.6: Summary of PlatOne contribution to Bridge WPs”, Platone EU Horizon 2020 Project, 2023, [Online]. Available: https://platone-h2020.eu/

[6] P. Pediaditis, T. C. Xygkis, G. N. Korres, N. Hatziargyriou, "A ready-to-use framework for harvesting flexibility using state estimation and use-of-system tariffs: Insights from the H2020 Platone Project", accepted to be presented in the 6th International Conference on Smart Energy Systems and Technologies (SEST 2023), Mugla, Turkey, September 2023, pp. 1-6.

[7] “D4.5: Mesogeia demonstration: report”, Platone EU Horizon 2020 Project, 2023, [Online]. Available: https://platone-h2020.eu/

8 List of Abbreviations

Abbreviation	Term
DA	Day Ahead
DSO	Distribution System Operator
DUoS	Distribution Use of System
HEDNO	Hellenic Electricity Distribution Network Operator
IPTO	Independent Power Transmission Operator
NRA	National Regulatory Authority
PMU	Phasor Measurement Unit
TSO	Transmission System Operator

Annex Platone - User Engagement Questionnaire

Platone - User Engagement Questionnaire

Platone – PLATform for Operation of distribution NEtworks – is a four-year Horizon 2020 funded European project. The project's primary objective is to develop innovative strategies to increase observability of Renewable Energy Resources, while also exploiting their flexibility. A consortium of 12 partners from Belgium, Germany, Greece and Italy is developing advanced management platforms to unlock grid flexibility and to realize an open and non-discriminatory market, linking users, aggregators and operators.

1) Have you heard of Platone project before being asked to fill in this questionnaire? *

- ❑ Yes
- ❑ No

2) If yes, how did you learn about Platone? *

- ❑ Project website
- ❑ Project social media
- ❑ Project reports
- ❑ Project workshops
- ❑ Conferences
- ❑ Other...

3) Which organization are you in? *

- ❑ Academia and Research
- ❑ Distribution System Operator (DSO)
- ❑ Transmission System Operator (TSO)
- ❑ Energy Supplier
- ❑ Regulatory Authority
- ❑ Industry
- ❑ Other

Greek demo

The demonstration site in Greece is located in the area of Mesogeia, near Athens. The main objective of the trial is to enhance the observability of the Distribution System Operator, by incorporating new metering devices and leveraging specialized algorithms. The enhanced observability enables the optimal control of Distribution Energy Resources both in the day-ahead and real-time time frames for market participation, mitigation of congestions and voltage limit violations, minimization of losses, as well as provision of ancillary services to the Transmission System Operator.

Variable Distribution Use-of-System (DUoS) tariffs

Distribution Use of System (DUoS) charges are unbundled regulated tariffs charged to all distribution network users via their energy bills. DUoS charges are levied by the

Distribution System Operator and cover mainly the cost of distribution networks' maintenance. In Greece at the moment, the DUoS tariffs do not change throughout the day. In a future scenario, Variable DUoS tariffs could become a pricing mechanism that a DSO could utilise to trigger flexibility provision in their network. In contrary to the traditional flat DUoS tariffs, Variable DUoS tariffs would differ throughout the day, and also, they could potentially differ depending on the location of the network user.

4) How familiar are you with the term "Variable DUoS tariffs»? *

- ❑ Not familiar at all
- ❑ Not familiar
- ❑ Somewhat familiar
- ❑ Familiar enough
- ❑ Very familiar

5) Would you be interested in attending specialised seminars regarding flexibility markets? *

- ❑ Yes
- ❑ No

6) Would you pay for such seminar assuming that it would help you having better control of your energy bills? *

- ❑ Yes
- ❑ No

7) In case Variable Distribution Use of System (DUoS) Tariffs instead of traditional flat DUoS were used for your consumption, would you be willing to shift demand, responding to high or low tariff levels?

- ❑ Yes
- ❑ No

8) If yes, what percentage of your consumption would you be willing to shift?

- ❑ Up to 10%
- ❑ 10-20%
- ❑ 20-50%
- ❑ More than 50%

9) Which type(s) of consumption would you be willing to shift?

- ❑ Heating
- ❑ Electric Vehicle
- ❑ Air-conditioning
- ❑ Dishwasher
- ❑ Washing Machine
- ❑ Warm water usage(shower/bathing)
- ❑ Other

10) Which would be the main motivation(s) for your participation in a flexibility market? *

- ❑ Cost reduction
- ❑ Environmental benefits
- ❑ Contribution to energy transition
- ❑ Contribution to grid stability
- ❑ Reputational gains
- ❑ Access to new technology
- ❑ Other…

11) Which would be the principal barrier(s) to your participation in a flexibility market? *

- ❑ Lack of knowledge in flexibility provision
- ❑ Price volatility
- ❑ Advanced technical requirements of the prequalification process
- ❑ Impact on the core business
- ❑ Compatibility of assets
- ❑ Low acceptance
- ❑ Data privacy
- ❑ Lack of advanced metering systems
- ❑ Other

12) Please submit any additional comment here:

[Reply text]

Thank you for your time!!!