




The PARITY project has received funding from the  Ref. Ares(2022)6994378 - 10/10/2022
EU's Horizon 2020
research and innovation programme under grant agreement No 864319



P A R I T Y

Project Acronym: **PARITY**
Project Full Title: **Pro-sumer AwaRe, Transactive Markets for Valorization of Distributed flexibility enabled by Smart Energy Contracts**
Grant Agreement: **846319**
Project Duration: **42 months (01/10/2019 – 31/03/2023)**

DELIVERABLE D9.8

Dissemination and Communication Plan & Activities v4

Work Package: **WP9 - Dissemination, Communication & Stakeholder Engagement**
Task: **T9.2 Dissemination and communication plan**
T9.3 Dissemination and communication activities
Document Status: **Final**
File Name: **PARITY_D9.8_Dissemination and Communication Plan & Activities v4**
Due Date: **September 2022**
Submission Date: **October 2022**
Lead Beneficiary: **MERIT Consulting House**

Dissemination Level

Public

X

Confidential, only for members of the Consortium (including the Commission Services)



The PARITY project has received funding from the EU's Horizon 2020 research and innovation programme under grant agreement No 864319

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Version History

Version	Author	Date	Status
0.1	MERITCH	10.04.2022	ToC
0.5	MERITCH	22.09.2022	First Draft Finalized submitted for internal review
1.0	MERITCH	03.10.2022	Review comments addressed, ready for submission

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Executive Summary

The main aim of this report is to present and evaluate the dissemination and communication actions implemented up to month 36 of the project, and to update the initial dissemination and communication plan, considering the impact assessment of the performed actions on the specified target audiences.

To this end, it contains the overall Dissemination and Communication Strategy of the PARITY project, the updated Dissemination and Communication implementation Plan, the details about the activities carried out up to September 2022 (month 36 of the project) and the progress towards the specified dissemination and communication targets.

More in detail, the general definitions of the dissemination and communication concepts are provided, as in the first version of the dissemination and communication plan, to clarify the distinction between those two terms and set up a comprehensive plan. Following that, the target groups' enrolment in dissemination and communication activities is identified for the target audiences of the project. In addition, the updated timeline that needs to be followed according to the project needs and the assessment of the performed actions is also resented. Then the target messages and communication channels definitions and descriptions are given, as in the first version of this report. Moreover, the updated activities that should take place are identified and the channels that will be used for dissemination events are presented along with the dissemination material of the project.

The presented in this report activities are and will be evaluated constantly towards the specified Key Performance Indicators and should reach the semi-annual targets and milestones as identified. This procedure will provide the opportunity to securely reach the final dissemination and communication targets of the project and support the raising of public awareness of the project results.



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List of Acronyms and Abbreviations

Term	Description
D	Deliverable
DCA	Dissemination and communication activities
DCP	Dissemination and Communication Plan
DCS	Dissemination and Communication Strategy
DER	Distributed Energy Resources
DG	Distribution Grid
DoA	Description of Action
DSO	Distribution system operators
IoT	Internet of Things
KPI	Key Performance Indicators.
LEM	Local Electricity Market
LFM	Local Flexibility Market
LL	Living Labs
P2P	Peer to Peer
RES	Renewable Energy Resources
SE	Stakeholder Ecosystem
UG	User Group



1. INTRODUCTION



The PARITY project addresses the “structural inertia” of distribution grids (DGs) by delivering a transactive flexibility framework that will increase durability and efficiency of the electrical grid, while simultaneously enabling the adoption of more Renewable Energy Sources (RES) through enhanced real time control of Distributed Energy Resources (DER) flexibility combined with novel Active Network Management functionalities. PARITY will go beyond the traditional “top-down” grid management practices by delivering a unique local flexibility management platform through the seamless integration of IoT and Blockchain technologies. By delivering a smart-contract enabled market platform based on blockchain technology, PARITY will facilitate the efficient deployment of local micro-transactions and reward flexibility in a cost-reflective and symmetric manner, through price signals of higher spatio-temporal granularity based on real-time grid operational conditions. Finally, by deploying advanced IoT technology PARITY will offer distributed intelligence (DER profiling) and self-learning/self-organisation capabilities (automated real-time distributed control), orchestrated by cost reflective flexibility market signals generated by the blockchain local flexibility and electricity market platform (LFM/LEM platform). Within PARITY, DER will form dynamic clusters that essentially comprise self-organised networks of active DER nodes, engaging in real-time aggregated & P2P energy/flexibility transactions.

More in detail, the PARITY project aims to enable the set-up and operation of local flexibility markets at the distribution network level via a holistic offering encompassing:

-  A smart contract enabled, blockchain based LFM/LEM platform which will facilitate both peer-to-peer energy/flexibility transactions as well as the sell/purchase of flexibility to Smart Grid actors.
-  IoT enabled DER Flexibility management tools - both in a peer-to-peer distributed fashion, but also through a centralised aggregator.
-  Smart Grid monitoring and management tools to enable the distribution system operator (DSO) to optimally manage the low voltage distribution network in the presence of increasing intermittent RES penetration and with the aim to contain the problems they create to grid stability.

In parallel to the technology solutions that will be created and demonstrated in the project, PARITY will also deliver all the necessary additional elements that are critical for the effective deployment, replication and proliferation of the PARITY solution. These include:

-  The investigation of market coupling mechanisms that will enable to bundle and trade local flexibility potential in the national energy and ancillary service markets when it exceeds the needs of the local market and it can be monetised at higher levels of the grid,
-  The definition of local market actors and the associate business models that will ensure seamless LFM/LEM operation,








-  The innovative retail energy commercial arrangements and contracts which will enable the automated provision and trading of flexibility in the LFM that will ensure grid stability,
-  The policy reform recommendations to shape the regulatory frameworks that will enable LFM/LEM creation in a financially sustainable manner.

PARITY will demonstrate all its results in four demonstration sites with varying characteristics in terms of climatic zones, proliferation of RES and demand device types, regulatory frameworks and market codes as well as culture and environmental consciousness. The sites are located in Granada and Zaragoza, Spain; Athens, Greece, South Sweden and Lugaggia, Switzerland.





1.1 Scope and objectives of the deliverable



In this Dissemination and Communication Plan (DCP) the overall PARITY Dissemination and Communication Strategy (DCS) will be analysed, while the different communication strategies, means and materials to address dissemination and communication will be described and the designed dissemination material will be presented.

More in detail, the main scope of this deliverable is to clearly define:

-  The communication and dissemination objectives in comparison with the project's objectives
-  The interdependencies between other project WPs and outcomes with the dissemination and communication activities
-  The initial time plan for the communication and dissemination actions anticipated
-  The specific segments of communication and dissemination target groups and which partners are involved in each activity
-  The content and message that needs to be produced through the project and communicated at each activity, during the project's deployment phase
-  The description of the selected dissemination and communication means and the time plan for multiplying the expected effect to the described anticipated audiences during but also after the end of the PARITY project
-  The responsibilities between partners for the implementation of the designed communication and dissemination activities.

Moreover, the main questions that this deliverable will answer are:

-  What kind of information must be communicated through this plan?
-  What is the most efficient approach and method to engage the PARITY end users and stakeholders during the different phases of the project?
-  What should the project disseminate and communicate at each phase?
-  When should the project disseminate and communicate each message?

-  Which partner, will be responsible to disseminate and communicate, at each phase and with what actions?
-  Where and to who should the project communicate and disseminate at each phase?

Finally, in the content of this deliverable a monitoring methodology for all communication and dissemination activities will be described, by using specific metrics and KPIs.

1.2 Structure of the deliverable

In the first part of this deliverable, the general definitions of the dissemination and communication concepts are given and the dissemination and communication strategy is presented. More in detail, in this part a clear distinction between those two terms is pointed out, followed by the separate dissemination and communication objectives that are recognised and by the main strategy that needs to be followed. Moreover, in the same part, the target groups' enrolment in dissemination and communication activities is presented for the target audiences with an identification of the groups of special importance for that the project needs to focus. In addition, the timeline that needs to be followed, according to the Description of Action, is presented and finally, the target messages and communication channels definitions and descriptions are given.

After the definition of terms, methodology and strategy identification, in the next part of this deliverable, the updated implementation plan for dissemination and communication activities is deployed. Firstly, in this part, the updated detailed plan of the dissemination and communication activities that should be executed within the framework of the project is presented. This plan will be constantly updated in the different versions of this deliverable. Following that, the specific target audiences and key stakeholder groups for the PARITY project are recognised among the corresponding actions and awareness raising. Then the engagement activities to stimulate those key target groups are pointed out. Finally, in this part, the relevant channels and tools used for dissemination and communication activities of the project are highlighted and presented followed by a presentation of the dissemination material.

In the next part, the detailed dissemination and communication activities of each project period are discussed. Initially the activities of the first six months are analysed, as already presented in the first version of this deliverable. Then, the activities from month six to twelve are provided and analysed, per category. Finally in a separate section, the activities that were implemented from month 25 and up to month 36 are being reported.

In the last part of this deliverable, the monitoring, evaluation and impact assessment of dissemination and communication activities are revisited. Here, the impact assessment methodology and the Key Performance Indicators (KPIs) are provided. Next, the results of the assessment are presented up to month 24 of the project. Then, the dissemination and communication performance is evaluated towards the quantified targets of the plan, while actions to mitigate any future risks are identified.

Finally, as described in the PARITY DoA [3], this deliverable will be updated during the project duration, as presented in the following Figure 1.

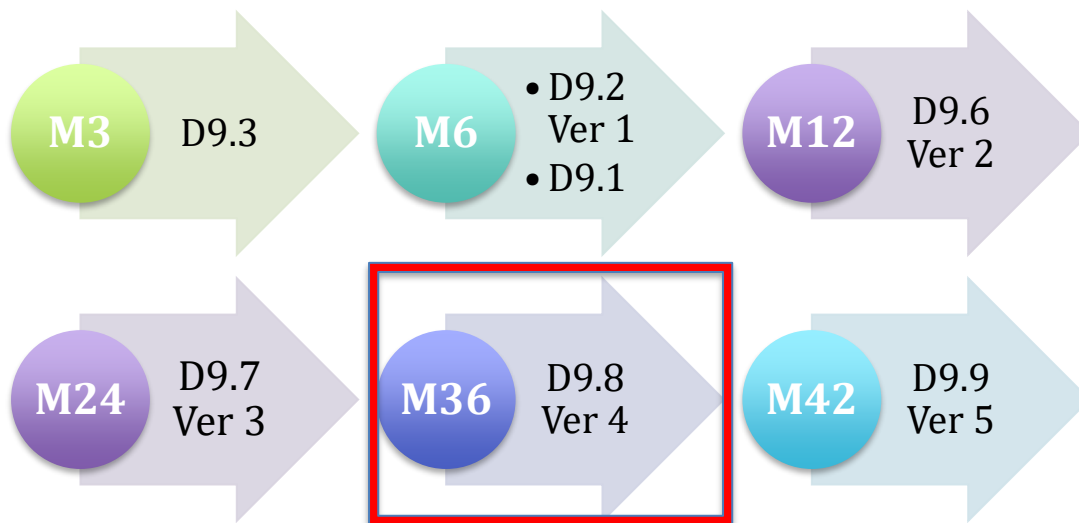


Figure 1. Updated roadmap of the related deliverables under dissemination and communication.

During the first six months of the project, the first version of the dissemination and communication activities plan was presented. In parallel, the initial Living Lab (LL) activities planning has been presented in D9.1 “Living Lab Setup and Activities Planning”. After the second semester of the project this initial plan was updated, along with the executed activities during that period, presented in the second version of the deliverable, namely D9.6. In this present 3rd version of the deliverable (D9.7), the activities carried out between month 13 and up to month 24 are being reported. Until the end of the project, two more versions are expected to be drafted covering the implemented activities of the respective periods until the project ends. Moreover, any adaptation or redesign in the initial plan is going to be also analysed. The schematic illustration timeline of the updated versions is presented in Figure 1, while the process and interconnections between deliverables is illustrated in the following Figure 2.

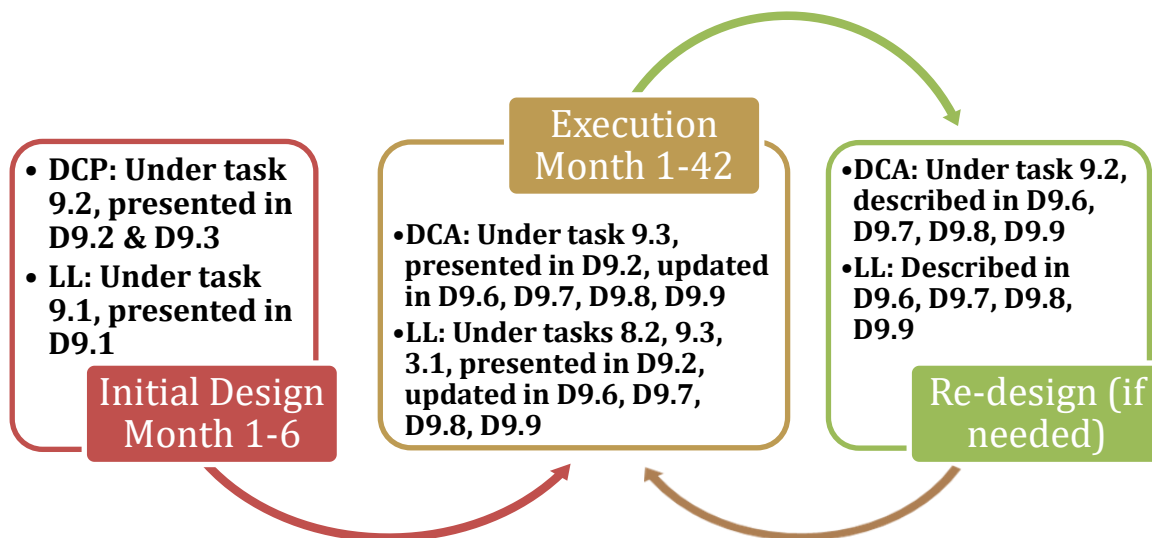




Figure 2. Design, re-design and execution of Dissemination, communication and living labs in the framework of PARITY tasks.

1.3 Relation to other tasks and deliverables

Naturally, the dissemination and communication activities have a horizontal relation with all work packages and tasks in the framework of a project, as its aspects are part of almost every other project activity. In addition to that, there are some interdependencies with tasks of great interest for dissemination and communication activities, which needs to be described in more detail:

 As described in the PARITY DoA, [3], this deliverable relates to both T9.2 “Dissemination and communication plan” and T9.3 “Dissemination and communication activities”. Thus, the initial plan and material will be presented in deliverable 9.2: “Dissemination and Communication Plan & Activities version 1” and Deliverable 9.3 “Dissemination and communication package”. As a result, those two deliverables are closely interconnected and constitute together the dissemination plan of the project. Finally, in the updated versions of Deliverable 9.2, all the dissemination action reports, the updated dissemination material and the changes in the initial plan, will be described.

 As already presented in Figure 1 and Figure 2, Deliverable 9.2 is closely connected with task 9.1: “Living Lab Setup and Activities Planning”. The actions anticipated in this task and described in D9.1: “Living Lab setup activities” will take place under the framework of task 9.3, between others and will be described in the updated versions of this deliverable. Moreover, any changes or redesigns in the initial plan of the Living Lab activities, will be also presented in the updated versions of this deliverable.

- Another task closely connected with the living lab activities and as a result connected also to this deliverable, is Task 8.2 “Community engagement, pilot participant recruitment and integration into the local flexibility market”. Under the framework of task 8.2 a part of the target audience, described in this deliverable, will be recruited.
- Moreover, as in Horizon 2020 projects the exchange of knowledge and establishment of synergies with similar projects is of great importance, the dissemination and communication task is connected with T9.4 “Establishment of synergies and coordination with BRIDGE and similar projects for policy and research relevant issues”.
- In addition, the dissemination and communication activities are closely linked to the project’s exploitation activities. Thus, this task is connected to WP10 “Exploitation and Business Innovation” and will be in close cooperation during the project implementation.

The interdependencies and interconnections described above are also illustrated in Figure 3:

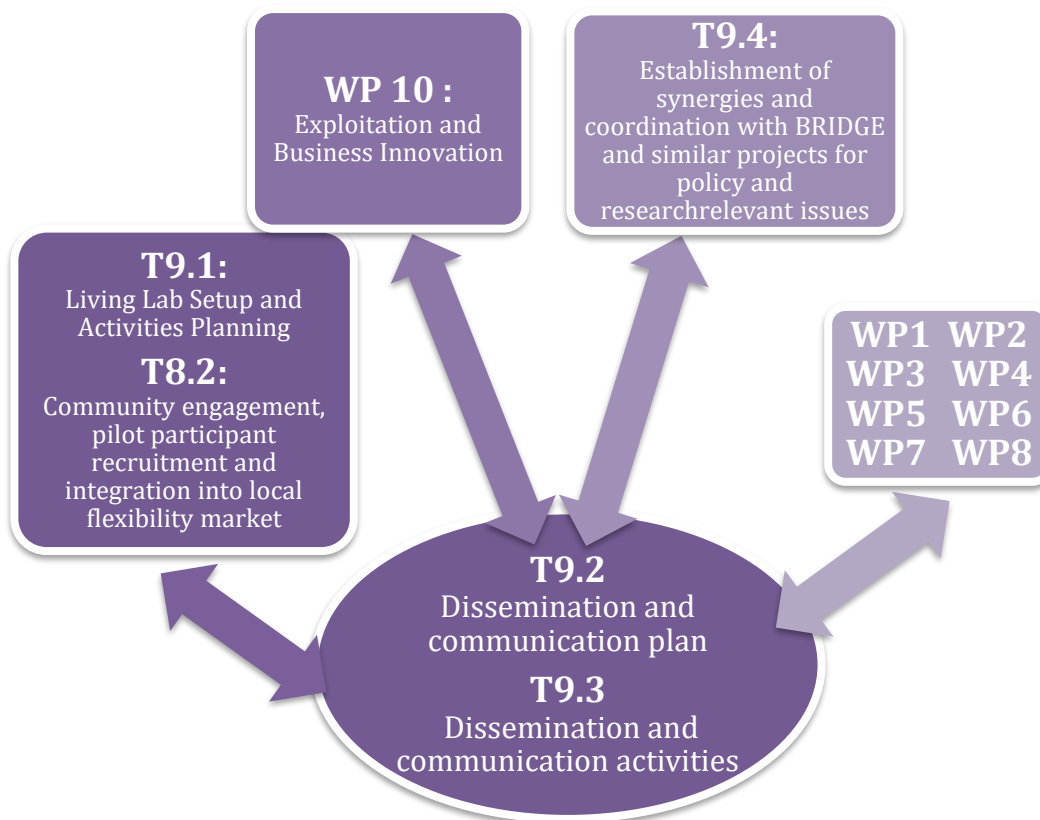


Figure 3. Interrelations with other tasks and work packages.

It should be noted that parts of sections 2 and 3 of the present deliverable are provided for coherency reasons and they include information already presented in paragraphs 2 and 3 of the deliverables D9.6 and D9.7 “Dissemination and Communication Plan Activities v2” and v3, respectively.

2. PROJECT DISSEMINATION AND COMMUNICATION OBJECTIVES AND STRATEGY

This section will present the structure and content of PARITY's project dissemination & communication activities, which precedes a more in-depth description of the communication activities implemented. The PARITY project draft "Dissemination & Communication plan" includes a variety of activities directed to ensure the highest project impact. Among them, Task 9.2 involves the development, execution and continuous improvement of the PARITY Dissemination & Communication plan. Its major focus is to ensure that the project activities and outcomes are widely spread among the appropriate target groups, at appropriate times and via appropriate methods as well as to identify potential contributors to the development, evaluation, uptake and exploitation of PARITY outcomes, encouraging their participation on a systematic and regular basis. The PARITY Dissemination & Communication supports, and channels described are intrinsically linked to the exploitation of the project results; the efficient publicity and the wide exposure of the project activities and/or results to targeted stakeholders and media would facilitate the use of these results beyond the project's lifetime and thus, increase the project's impact.

To this end, horizontal activities will be implemented in the framework of this task, with the scope to increase the outreach of the project results and improve its visibility. Such communication activities will be implemented supporting the dissemination activities and result in a maximised impact for the project, while attempting to make EU citizens more familiar with the Horizon 2020 program and its impact in reinforcing the EU economy. Thus, the PARITY consortium had designed an integrated communication campaign, along with the project's dissemination activities attempting to utilise a variety of tools and means to communicate the project's results and instruments, making the project results more understandable to stakeholders and the wider public audience.

2.1 Definitions

Before attempting to draft the dissemination, communication and stakeholder engagement strategy, it is important to have a clear picture of the basic definitions from which the development will start and the approach that it should follow. The PARITY Dissemination and Communication Plan (DCP), will be in a process of constant development, being updated every 6 months throughout the project duration, while it is important to be constantly monitored, re-evaluated and – if needed - readopted. With the scope to fulfil the defined Key Performance Indicators (KPIs), this procedure is presented in Figure 4.

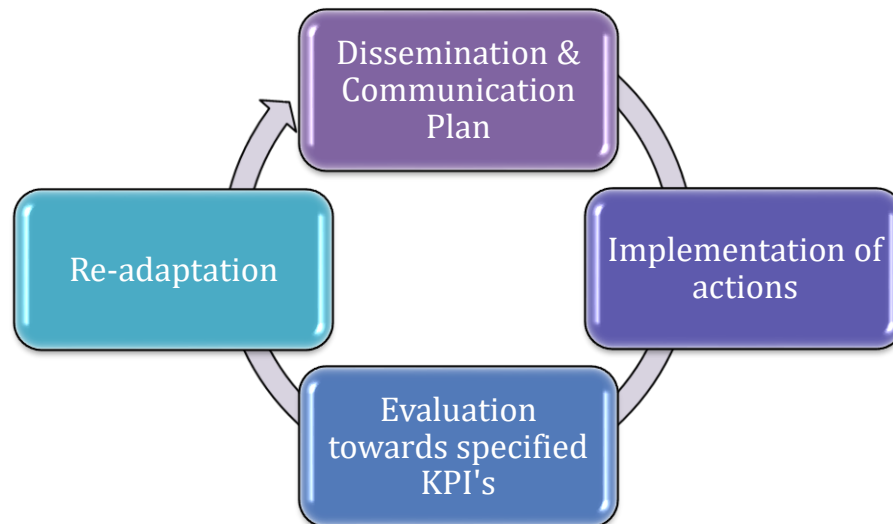




Figure 4. The PARITY DCP constant development procedure.

Another important aspect that needs to be distinct before the deployment of the project's DCP, is the difference between the definitions of communication and dissemination. A clear distinction of these two terms is of special importance for the success of any DCP, as several strategic elements and relative actions are influenced by this difference.

According to [1] they can be defined as follows:

-  **Communication** “on projects is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about the action and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange.”
-  **Dissemination** is “the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.”







In the following Table 1 a summary of the distinction between those two terms is presented, with a focus on target audiences and objectives [2].

Table 1. Distinction between communication and dissemination.







Communication	Dissemination
About the project and results	About results only
Multiple audiences Beyond the project's own community (including the media and the public)	Audiences that may use the results in their own work e.g., peers (scientific or the project's own community), industry and other commercial actors, professional organisations, policymakers
Inform and reach out to society, show the benefits of research	Enable use and uptake of results

2.2 Dissemination objectives and main strategy

Following this distinction between dissemination and communication, an initial task towards the definition of the strategy is the identification of objectives behind dissemination associated activities. The dissemination activities, as predicted in this plan, deal with the diffusion of knowledge generated within the project's context, having as a scope to ensure a mid-term but also a long-term impact of project results by informing the specified target audiences. Thus, the dissemination strategy set to be applied in the framework of this project should be aligned with those objectives:






-  **Dissemination objective 1:** To diffuse beyond the project's consortium, the technological and the scientific knowledge generated by the project.
-  **Dissemination objective 2:** To maximise the project visibility in the specified target audiences through the appropriate defined key messages.
-  **Dissemination objective 3:** The establishment of synergies, coordination or liaisons with BRIDGE and similar projects for knowledge transfer, innovation exchange and policy relevant issues.
-  **Dissemination objective 4:** To engage the defined targeted audiences and to get feedback to validate the project's results, through the living labs methodology.
-  **Dissemination objective 5:** To attract potential users, stakeholders and urge the appropriate market segments.
-  **Dissemination objective 6:** To initiate the development of further research on the domain and develop outcomes in new initiatives.

Those high-level objectives are to ensure that the project outcomes will be promoted in different target groups, diffusing that way the PARITY outcomes by following the specified steps of the dissemination strategy:






-  **Dissemination strategy step 1:** Definition of the project key results and outcomes
-  **Dissemination strategy step 2:** Definition of the key messages to be disseminated by PARITY partners
-  **Dissemination strategy step 3:** Identification of appropriate dissemination channels
-  **Dissemination strategy step 4:** Categorization of identified dissemination channels
-  **Dissemination strategy step 5:** Prioritization of identified channels and proposed activities according to their expected impact
-  **Dissemination strategy step 6:** Definition of objectives, goals and indicators to measure the potential impact of each activity to each target audience or dissemination channel.


2.3 Communication objectives and main strategy

Following the same procedure for the communication objectives of the project, one can identify that communication strategy is driven by the following:

-  **Communication objective 1:** To create awareness of the project and its results among the potential users and the public.
-  **Communication objective 2:** To prepare the communication material with scope to provide the public with a clear view of the project concept and proposed PARITY solutions.
-  **Communication objective 3:** To prepare the ground for the project results be exploit.
-  **Communication objective 4:** To support the dissemination activities of the project.
-  **Communication objective 5:** Familiarize the public with Horizon 2020 projects and their impact to the EU economy and society.

As a result, and with the scope to meet those high-level communication objectives, the PARITY project communication approach bears the following steps:

-  **Communication strategy step 1:** Definition of the key messages and the branding of the PARITY project.
-  **Communication strategy step 2:** Identification of the communication pillars and project strengths, identifying indicatively the unique core values or unique selling points.
-  **Communication strategy step 3:** Identification of appropriate communication channels and ways to leverage them.
-  **Communication strategy step 4:** Prioritization of identified channels and proposed activities according to their expected impact.
-  **Communication strategy step 5:** Test the identified communication channels estimating the cost or effort needed in comparison with the audience acquired and monitor the results.

 **Communication strategy step 6:** Focus on the most successful communication channels that produced the most promising results in terms of resources consumption cost to benefit.

2.4 Target audience

Another very important aspect in the creation of a coherent and effective dissemination and communication plan, is the proper identification of the target audience, since it is more than obvious that it will make no sense to setup a plan without knowing who is addressed. So, after defining the objectives and main steps for dissemination and communication (what?), the potential targeted audience (who?) needs to be specified, along with their specific interest in the project. Thus, considering the range of solutions and technologies that the PARITY project offers, different types of end users linked with the Dissemination and Communication Activities (DCA) and project objectives have been identified. The identified target audience and stakeholders can be sorted according to their interest/relevance to the project and as a result be divided in target audiences and stakeholder groups that are highly interested in the project and its results, to those with medium interest to the project and to those who have a more generic interest for the project. The results of this mapping for the PARITY stakeholders are presented in the following Figure 5.



Figure 5. Target audience mapping.

2.4.1 Target groups enrolment in Dissemination and Communication Activities

Having identified the different stakeholder groups of the PARITY project and having defined the several objectives for the dissemination and communication activities, a cross matrix analysis for each stakeholder group is provided presenting the objective that the DCP should focus on. In the following tables this analysis is presented, for the dissemination objectives per stakeholder in Table 2 and for the communication objective per stakeholder in Table 3.



Table 2. Dissemination Objectives vs. stakeholders' cross matrix.

Dissemination objective Stakeholder group	Diss. Objective 1	Diss. Objective 2	Diss. Objective 3	Diss. Objective 4	Diss. Objective 5	Diss. Objective 6
General public						
Press						
European Union bodies	✓	✓	✓		✓	✓
Standardization bodies		✓			✓	
Technological platforms	✓	✓	✓			
Scientific community		✓	✓	✓		
Prosumers		✓			✓	
Policy makers			✓			
Associations	✓	✓	✓			
Living lab participants		✓		✓		✓
Technology providers	✓	✓		✓	✓	✓
Network operators				✓	✓	✓
Energy market regulators		✓			✓	✓
Flexibility aggregators		✓			✓	✓

Table 3. Communication Objectives vs. stakeholders' cross matrix.

Communication objective Stakeholder group	Comm. Objective 1	Comm. Objective 2	Comm. Objective 3	Comm. Objective 4	Comm. Objective 5
General public	✓	✓			✓
Press	✓	✓	✓		✓
European Union bodies	✓	✓	✓	✓	✓
Standardization bodies			✓		
Technological platforms	✓	✓	✓	✓	
Scientific community	✓		✓		
Prosumers	✓	✓	✓		
Policy makers		✓			



Associations	✓				
Living lab participants		✓	✓	✓	
Technology providers	✓	✓	✓	✓	
Network operators	✓	✓	✓	✓	
Energy market regulators	✓	✓	✓	✓	
Flexibility aggregators	✓	✓	✓	✓	

The aforementioned analysis presents the impact of PARITY project to each specific stakeholder group and moreover to which of those groups each dissemination and communication objective should focus. Those tables are being constantly revised throughout the project duration and will be updated in different versions of this report, if needed.

2.5 Focus groups of special importance - User-Driven Innovation Approach

End-Users and main project beneficiaries (DSOs, Prosumers, Aggregators, Retailers) are collectively placed at the centre of all research, innovation, demonstration and communication activities of the PARITY project, which will adopt a User-Driven Innovation Approach towards addressing emerging end-user and market needs, critical for the successful project implementation and the realisation of its anticipated impacts. The User-Driven Innovation Approach aims to involve beneficiaries and buildings occupants throughout all stages of the project life cycle, as key enablers of the PARITY innovation process, towards encouraging active and collaborative contributions in the development of a unique flexibility market ecosystem. Agile ICT implementation methodologies in conjunction with Continuous Validation and Verification processes will be incorporated in the overall User-Driven Innovation Approach to manage cross-functional teams and ensure the establishment of an effective Local Energy System Optimization Framework using innovative integrated ICT solutions. Continuous interactions between beneficiaries, end-users and project team members will be encouraged to minimise deviations between expectations and final outcomes, as well as to divide the project outcome into intermediate marketable results.

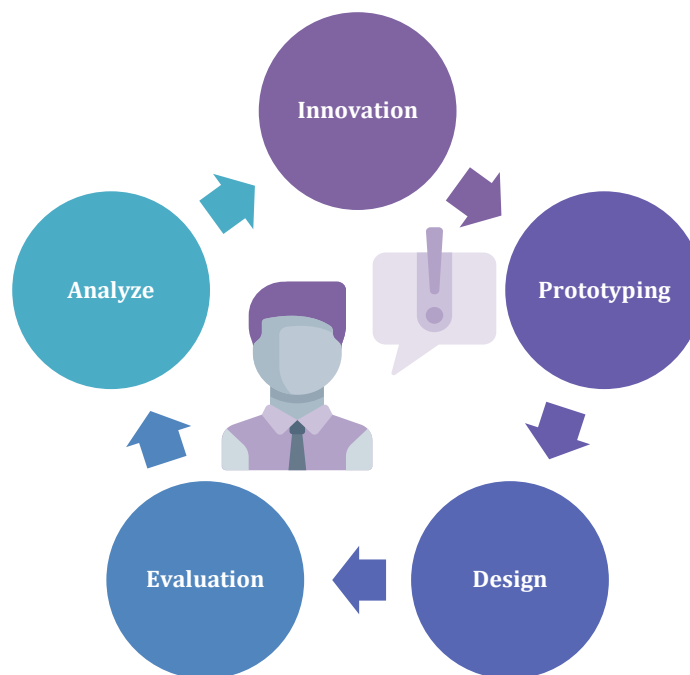






Figure 6. The PARITY User-Driven Innovation Approach.

2.5.1 Living Lab activities

As described in the PARITY DoA [3], the User-Driven Innovation Methodology and Approach and Agile Development of PARITY will be supported by the establishment of the PARITY Living Lab. Its creation is motivated by the understanding that a Living Lab can provide an excellent network for

experience sharing and exchange towards user and business-driven open innovation. The PARITY Living Lab activities will be oriented towards fulfilling the following objectives:

-  Widely disseminate the project outcomes towards end-users, beneficiaries and energy stakeholders to generate a broad awareness and engagement/ involvement in the various project activities.
-  Create opportunities for further exploitation and replication of the project results after completion.
-  Obtain feedback from major stakeholders, end-users and targeted beneficiaries throughout project duration to optimise all project developments, so as to directly address critical needs of stakeholders involved in the operation of the PARITY framework.
-  Support knowledge and experience sharing with international partners together with other selected stakeholders.

To achieve this degree of collaboration, PARITY will establish a complete awareness and communication framework with all stakeholders, either involved in or affected by project activities, as presented in Figure 7. The Living Lab methodology involves end-users and beneficiaries from the very beginning of a new idea, creating the motivation to share and discuss their experiences and requirements. This collaborative environment, where all stakeholders evaluate, appraise and disseminate solutions and learnings, will lead to a natural acceptance by users who will be empowered not only to test, evaluate and report their own experience with the PARITY solutions, but also to live with it, smoothly accept and incorporate PARITY in their everyday lives and operations. All the above-mentioned activities and plan of actions under the Living Lab activities are in detail described in D9.1 “Living Lab setup activities”.

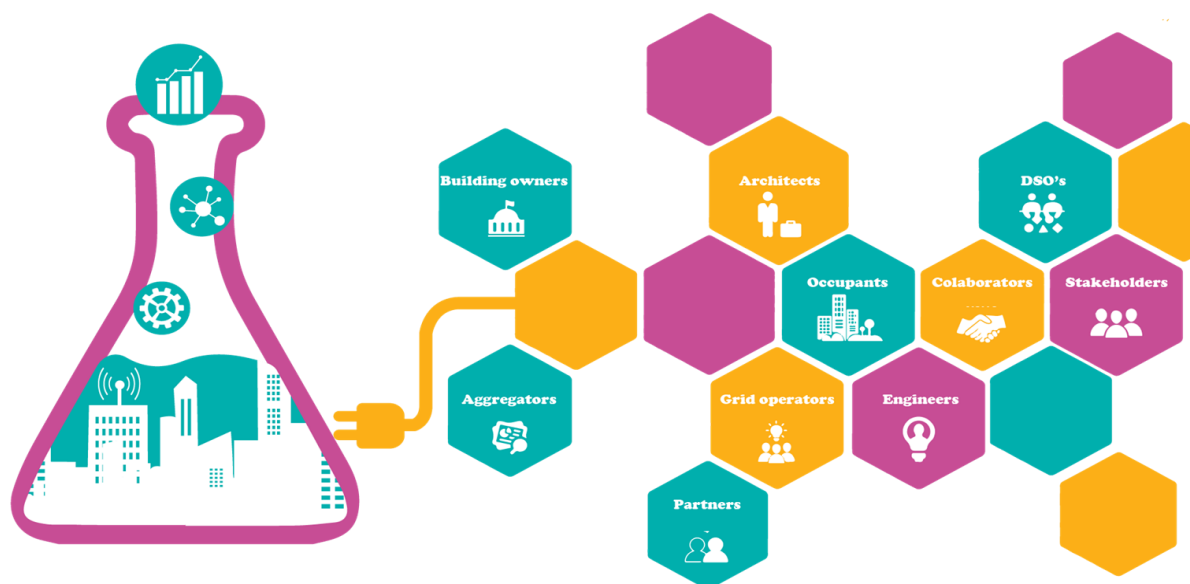





Figure 7. PARITY living labs operation principle.

2.5.2 Coordination with similar projects and the BRIDGE initiative

A primary goal of the PARITY project is to bring together, interconnect and promote synergies among projects which are active in the domain of Smart Grids, Storage, Demand Response and Energy Vector. This section constitutes a brief overview of the PARITY strategic plan to fill the gaps among Energy ICT, Interoperability Business Innovation and Energy markets knowledge areas and promote, as well as establish collaboration in the aforementioned domains, closely connected to BRIDGE and other initiatives.

In summary, the overall plan includes the primary aim and benefits of PARITY, how PARITY will establish stable and continuous interlinks with other projects and initiatives, give and take insights by exchanging experiences and creating concrete Research and Innovation synergies. This strategy can be analysed into three main cooperation levels, including i) involvement in specific BRIDGE Working Groups (e.g., data management working group and others), ii) contribution to selected BRIDGE Task Forces and iii) Direct Project Synergies. The means that are expected to be utilised to achieve that, are mainly workshops, publications and any online tool capable of supporting the networking in a continuous manner.



In reference to the BRIDGE coordination meeting that took place in March 2019 in Brussels, the projects which PARITY can build a collaboration framework (Direct Project Synergies) and follow-up actions with, and whose planned activities run in parallel or are closely aligned with PARITY's working actions, are classified into three main categories, as follows:


-  Projects funded under the same call: Flexibility and retail market options for the distribution grid (ES1)
-  All projects which are closely aligned with PARITY objectives as described in the project's proposal.
-  Projects which are active in similar topics like: Smart Grids, Storage, Demand Response and Energy Vector interconnections domains

A more detailed plan is expected to be analysed and presented in D9.4 – Report on Synergies with external initiatives which is an output of T9.4, as described in the DoA [3].

2.6 Dissemination and communication timeline

As described in the PARITY DoA [3], with regards to timeline, the PARITY dissemination and communication strategy is structured in three main phases:






-  “Phase 1 – Initial awareness phase” (M1-M10) aims at:
 - Agreeing upon the communication strategy and future activities.
 - Creating initial awareness in the markets related to the Project's objectives and scope.
-  “Phase 2 – Targeted awareness market phase” (M10-M25) aims at:
 - Create more “targeted awareness” regarding PARITY technologies with key players and potential users.

- Inform the target market about the technological benefits of PARITY.
-  “Phase 3 – Strategic phase” (M26-M42) aims at:
- Maximizing target market awareness regarding the PARITY solution.
 - Thus, contributing to ensure the project sustainability and full exploitation

2.7 Target messages

Having identified the main objectives and core target groups in which the dissemination strategy of PARITY should focus, the core target messages that will be communicated should follow. The proper communication with stakeholders and target groups appears often to be challenging. To ensure that the main points of dissemination and communication strategy will get across, it is highly important to establish the proper key communication messages.

To identify the proper target messages, it is important to consider some crucial points:

-  Is the information we would like to communicate credible and supported by solid evidence?
-  Is the message easy to be understood by stakeholders and on point?
-  Is our main message using active language and formulated in a positive way?
-  Are our activities properly represented through our message?
-  What are the expected results of our main message?

In this sense, the PARITY target messages will be continuously reviewed and updated, to ensure their relevance, but also the continuous repetition is also important as it reinforces the key messages and can ensure the uptake from the target focus groups.

Finally, for our message to be delivered to the target audience in a way that it can be clearly understood, it must be produced in a way that considers the focus group needs and characteristics, as shown in the following Figure 8 illustration:

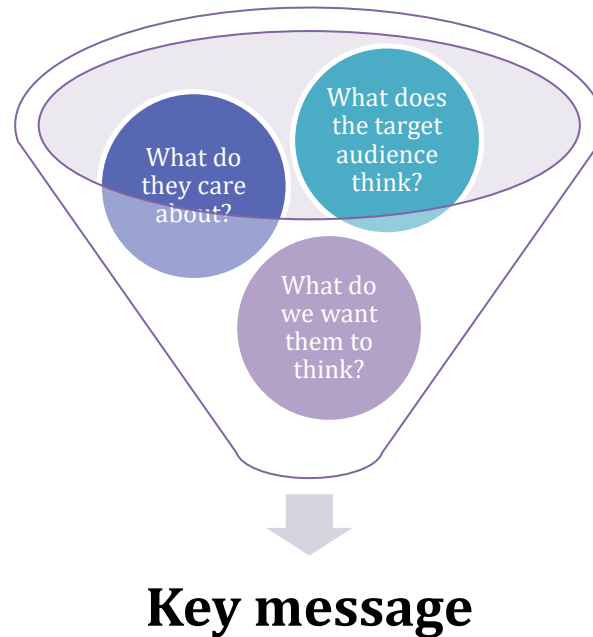





Figure 8. Creation of a comprehensive key message.

2.8 Communication channels

Nowadays, a variety of possible communication channels is available to be used for targeting different focus groups and stakeholders with different types of messages. To make the right choice between them and send the right message to the respective audience, the following questions must be answered:

-  To whom would we like to deliver the message?
-  What message would we like to deliver?
-  Which are our key goals forming the message delivery?

When answering those questions, we ultimately lead to answering the most important question, “how are we going to deliver the message”, which means using the most appropriate dissemination and communication channels.

2.9 Audience and channel matching

In the following Table 4, the identified target audience groups are linked with the respective proposed communication and dissemination channels. However, the presented link between them, does not mean that those channels will be strictly and exclusively linked only as presented throughout the project duration. These tools have been proven to be the most efficient to deliver the described key message to each target audience and will be updated periodically during the life cycle of the project through the constant development process of the PARITY DCP. Thus, this table will be updated in different versions of this report, if needed. For this second version, no updates have been applied.



Table 4. Target audience and proposed channels matching.

Target audiences	Proposed channels
General public	Website / social media / press releases / newsletter
Press	Website / social media / press releases / newsletter
European Union bodies	Website / policy briefs
Standardization bodies	Policy briefs / academic journals
Technological platforms	Social media / newsletter / workshops / fora & events
Scientific community	Academic journals / social media / fora & events / workshops
Prosumers	Website / social media / press releases / workshops
Policy makers	Policy briefs / workshops
Associations	Policy briefs / academic journals / workshops / fora & events
Living lab participants	Website / workshops / fora & events / newsletter
Technology providers	Website / workshops / fora & events / newsletter / academic journals
Network operators	Website / workshops / fora & events / newsletter / academic journals
Energy market regulators	Policy briefs / workshops
Flexibility aggregators	Website / workshops / fora & events / newsletter / academic journals

3. DISSEMINATION AND COMMUNICATION PLAN

In this section the detailed plan of how the dissemination and communication strategy will be carried out and the activities with their respective implementation will be described. This part will be updated periodically during the life cycle of the project through the constant development process of the PARITY DCP. The updates will be presented in the different versions of this report.

In the first chapter the dissemination and communication **activities** are described in detail, including the proposed communication channel to be used, an estimated schedule and the responsible for carrying it out. In the next chapter the presented target **audience** and stakeholder groups, are presented more in detail. Moreover, in the following chapter the proposed communication **channels** used within the project are presented in detail and finally, in the last section the proposed **target events** for the next period will be presented and updated periodically.

3.1 Dissemination and communication activities detailed plan

The following Table 5 shows the detailed plan of dissemination and communication activities, which are planned to be carried out within the framework of the project. This plan will constitute the basic guideline for all dissemination and communication activities during the project lifetime. It has been updated from the first version of this document and will be updated regularly, based on the performance estimation of the executed activities, the risks that might arise during the project implementation and the changes that might apply during the execution of the project's technical part. Any future changes will be presented in the next versions of this report.

Table 5. Dissemination and communication activities detailed plan.

Activity	Time plan	Partner
Project website	M1 – M3: Website initial design and launch	MERIT
	M4 – 42: Monthly update of website content	Coordination: MERIT Contribution: All partners
Social media	M1 – M3: Establishment of social media accounts in Twitter, LinkedIn, Facebook and YouTube	MERIT
	M4 – M42: At least 1 weekly update of Twitter content, and Facebook new posts. Monthly update of LinkedIn content.	Coordination: MERIT Posts: All partners



Activity	Time plan	Partner
Dissemination material	M1 – M12: One project leaflet One project poster One reference PPT presentation	MERIT
	M13 – M42: One update of project leaflet (target month of the update: M28) One update of project poster (target month of the update: M30) One update of the reference PPT presentation (target month of the update: M36)	MERIT with contribution from technology provider and pilot partners
Scientific publications	M1 – M12: At least 1 open access scientific publication	Coordination: CERTH Publications by: Technology providers and research institutes Contribution: All partners
	M13 – M24: At least 3 open access scientific publications (4 in total)	
	M25 – M36: At least 4 open access scientific publications	
	M36 – M42: At least 2 open access scientific publications	
Workshops	The first round of Living Lab workshops (one per pilot site) is to take place up to month 28 of the project. The workshops will be organised considering the health and safety of all participants and the restrictive measures applied in EU countries due to the COVID health crisis. The initial planning was altered due to the changes in the available pilots that were incorporated in the relevant GA amendment.	Coordination: Technical Manager Project coordinator Organized and moderated by: Pilot partners Contribution: All partners
	M29 – M42: 1 Living Lab Workshop per pilot Site as described in the Living Lab methodology.	





Activity	Time plan	Partner
Newsletters	One project newsletter every 6 months during project duration	Coordination: MERIT Input: All partners
Press releases	One press release for important milestones during project duration	Coordination: MERIT Input: All partners
External events	<p style="text-align: center;">By M12:</p> <p>Participation in at least 6 external events or scientific conferences, according to the availability and limitations due to the COVID restriction measures. If needed the consortium members will participate in online events only.</p>	Coordination: MERIT, CERTH Participation to events: All partners (following the specified internal procedure)
	<p style="text-align: center;">M13 – M24:</p> <p>Participation in at least 9 external events or scientific conferences according to the availability and limitations due to the COVID restriction measures. If needed the consortium members will participate in online events only.</p>	
	<p style="text-align: center;">M25 – M36:</p> <p>Participation in at least 10 external events or scientific conferences</p>	
	<p style="text-align: center;">M36– M42:</p> <p>Participation in at least 5 external events or scientific conferences</p>	
Project video / slideshow	<p style="text-align: center;">By M18:</p> <p>Initial version of project video presenting the core and the objectives of the project</p>	Creation: MERIT Contribution: All partners
	<p style="text-align: center;">By M42:</p> <p>Second version of project video presenting the results of the project (target month of the update: M42)</p>	
Trainings / webinars	<p style="text-align: center;">By M28:</p> <p>1 training session covering the core and the objectives of the project</p>	Coordination: CERTH Organized & moderated

Activity	Time plan	Partner
	By M42: 2 training sessions covering the project's results	by: PILOT PARTNERS

3.1.1 Changes from the initial plan

From the initial implementation plan presented in Deliverable 9.2, a few changes have been applied, as recognized in Table 5. Those changes are the outcome of the constant update procedure of the DCP and specify in more detail a series of future actions, while they redefine the weaknesses spotted in the initial plan. Those changes are:

- 
 Regarding the implementation of the first round of the Living Labs, the ongoing pandemic has resulted in considerable delays in identifying and finalizing the PARITY pilot sites. As a result, the PARITY user group to whom the Living Lab workshops are foreseen to be addressed to, has also not yet been finalized. To that end, the initial planning of the first round of workshops (which foresaw execution by M18) was changed. The first round of workshops according to the updated plan should be held by M28 of the project.
- 
 Regarding the delivery of the first training session (which was planned to take place by M18), the updated plan foresees its delivery by M28 of the project. The reasoning behind the change is the same as with the Living Lab workshop case. The training sessions will be delivered upon finalization of the PARITY user group linked with the pilot sites.

3.2 Audience

Following the overview of the most important target audience and stakeholder groups that was given in chapter 2.4 and the audience and channel matching in chapter 2.9 this part focuses on the most important target audience and stakeholder groups, specified by Table 6. This table could also be updated every 6 months in the framework of the constant update of the DCP. Nevertheless, in this third version of the document, no changes have been recognized for the dissemination and communication target groups.

Table 6. Dissemination and communication groups description.

Scientific community	This target group corresponds to all academic organizations, research institutes, scientific journals, fora, and other stakeholders in research fields related to project's content.
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Standardization bodies	<p>PARITY through the participation of its members in technical committees and local standardization bodies, will ensure the compatibility with existing and evolving standards in the project domain while, with actions described in T9.5 “Grid integration and standardization recommendations for LFMs”, the PARITY project will provide recommendation for new standards in the project’s fields of interest.</p>
Living Lab participants	<p>The living labs participants, are identified as one of the most crucial key target groups of the PARITY project, since they are involved in the project activities from the very beginning by providing their initial needs, but also throughout the duration of the project by providing constant feedback during the project implementation.</p>
Energy market participants and grid operators	<p>Market participants and grid operators are very important key players for the project, as their role is very important in the possible future exploitation of the project results and the realization of the long-term impact of the project.</p>
Flexibility aggregators and DERs	<p>Flexibility aggregators and DER owners are key beneficiary groups for the project, as they belong to the list of final users of the PARITY solutions and their role is very important in the live feedback loop during the project technologies implementation, but also in the final stages of the project as the main key players in exploiting the project results.</p>
Policy regulators	<p>Policy regulators are also considered to be important players for the exploitation potential of the project. Specific dissemination activities will be planned to be performed towards them to motivate them to act to change the status and try to overcome the critical barriers to innovation and legislative framework in Europe.</p>
Technological platforms and professional initiatives	<p>Targeting the technological platforms will provide the project with the opportunity to integrate several new technologies and ideas to produce multi-product systems, and transactions between distinct sets of market participants. Moreover, special attention will be given to the creation of synergies with the BRIDGE initiative as described in T9.4 “T9.4 Establishment of synergies and coordination with BRIDGE and similar projects for policy and research relevant issues” to further reinforce cooperation between projects in research, innovation, regulatory and market issues.</p>

Facility managers	<p>Facility managers are also considered to be key beneficiary groups for the project, as they belong to list of the final users of the PARITY solutions. Thus, their role is very important, providing feedback throughout the project implementation for the key functionalities of the PARITY solutions and by providing by the end of the project their opinion about the project’s final results.</p>
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Moreover, as described in the PARITY DoA [3], the PARITY target audience can be grouped according to occupation into several categories. As can be seen in Table 7, there are several target groups that have been defined and which include both high-level and low-level stakeholders:

Table 7. Key stakeholders grouped by occupation.

Energy sector	End users	Facilitators
Energy retailers	Building occupants	EU Institutions (EC, European science Foundation, MEPs)
Aggregators	Facility managers (e.g., EV charging facilities	National public authorities (industrial committees, national regulation authorities, ministry, and regional councils)
DSOs & TSOs	managers)	Related EU-funded projects
Market Operators	System operators	Organizations & EU Alliances in topics addressed by PARITY
ESCOs	Commercial and Residential	European Technology Platforms and respective clusters
Technology Providers	Customers	Public Bodies & Environmental Organizations
Scientific community	Stakeholders at the Pilot Sites	
	General Public	

The PARITY project will result in high value for end users, as solutions provided will be adapted to their needs, based on appropriate user requirements and evaluation procedures, to ensure a high level of user acceptance. However, the dissemination activities target audience will also go beyond end-users as the main potential customers of the PARITY solutions are also decision makers (site managers, CEO, board of directors, etc.) and the project scale-up will need facilitators. Special attention will be paid to disseminate the project results through:

-  National Level (i.e., National Exhibitions in Smart Grids/Energy storage/ Energy Efficiency)
-  European Union Level (European Business Council for Sustainable Energy (e5), Union of the Electricity Industry – Eurelectric, European Council for an Energy Efficient Economy (ECEE), European Energy Exchange Associations (e.g., Europex, etc.).

3.2.1 Awareness raising and engagement activities to stimulate key target groups

As described in the PARITY DoA [3], to better focus its dissemination effort and improve the effectiveness and reach of dissemination efforts, PARITY plans to create two groups with dedicated needs and objectives, in which the project target groups will be represented.

The first is the “User Group” (UG) which comprises the pool of participants in the project pilot demonstration and validation activities. The User Group participants are critical for successful validation and the generation of reliable, trustworthy conclusions. With the finalization of the PARITY pilot sites, the relevant users have been identified as physical persons. The created PARITY User Group will be the target of a comprehensive information, awareness raising and training campaign to ensure not only adequate participation in demonstration activities, but also that participants use the PARITY solution as independent, beta users that will generate impartial feedback and recommendations. This will help the consortium identify weaknesses in the user experience and interfaces which will lead to improvements for easier market penetration. The campaign will include both physical and digital engagement means/activities and will strive to maintain a constantly open communication channel with the users.

The second key group includes market stakeholders who can provide an independent viewpoint and enhance the exploitation potential of project outputs by contributing to their design and creation. For this purpose, PARITY will find a “Stakeholder Ecosystem” (SE), populate it, and actively involve it in project activities in a consultancy, advisory manner. It will include members that are direct stakeholders in the domains of PARITY interest and especially key market verticals, such as building energy management, flexibility management, energy market operation, retailing, etc. The SE will serve the purpose of an Advisory Board with emphasis on market and exploitation aspects, such as: a) to expand the consortium’s viewpoint beyond the mere interests of its members, b) to infuse the project with novel ideas regarding new exploitation opportunities and how to address them, c) to ensure alignment of project outcomes with the expectations of the market stakeholders, d) enhance the relevance of project outcomes for further national markets in the EU and beyond. The Advisory Board will also include technical experts from fields related with the project scope: these will include grid-related ones (experts on system operation), and market-related ones (electricity market operation experts). The main aim would be to include such experts’ recommendations early into the requirements’ engineering phases to prevent misdirection into the later-on implementation stages.

3.3 Tools

3.3.1 Project Website

The dedicated PARITY website – www.parity-h2020.eu – has been set up following websites best practices. The website will constitute a communication resource to promote the PARITY project, its objectives /tools, and its partners; a communication resource to inform all the interested stakeholder on results, outcomes, and future events of the project. Responsiveness is very crucial for the function of the website (displayed on PC, tablet, and smart phones).



www.parity-h2020.eu

3.3.2 Social Media

As also presented in D9.3, social media nowadays are a very powerful tool that can be used for both dissemination and communication activities. The great advantage of the social media is that they can reach a wide variety of audiences and of different targets, making them ubiquitous and instrumental for communication, networking and content sharing purposes and by that guaranteeing the best dissemination of the PARITY project- related news, events and results. As part of PARITY's communication and dissemination plan, a detailed social media strategy is created for communication of the project idea and outcomes as well as for interaction with target audiences Figure 9.

To that end, a variety of social media platforms relevant to the project are in place. Thus, in month 4 of the project, PARITY accounts in 3 most relevant social media, Twitter, LinkedIn and Facebook that will allow the project to reach an extremely wide and targeted audience, enlarging the impact and successful exploitation of the project results. Moreover, an account also in YouTube has been created, and will be filled with content as soon as relevant material is produced, e.g., Project Videos.

More information about the social media channels already set up, can be found in D9.3 "Dissemination and Communication Package"



Figure 9. Social media strategy steps.

3.3.3 Newsletters

As already presented in Table 5, a project newsletter will be issued every 6 months, thus in total 7 newsletters will be issued in the framework of the project. The responsibilities and workflow of the newsletter issue procedure, as presented in the following Table 8.

Table 8. Responsibilities and workflow of the newsletter issue procedure.

MERIT	All partners
MERIT will prepare the layout of the newsletter and the graphic content	All partners should provide feedback, suggest and write content
MERIT will consolidate all contributions and prepare the final issue	
MERIT will distribute the newsletter to all partners	All partners are responsible to disseminate the newsletter to their channels and mailing lists
MERIT will disseminate the newsletter to project newsletter subscribers	

3.3.4 Publications

Publications in scientific journals & conferences relevant to the research and innovation activities will target scientific communities directly or indirectly in the project scope. They reinforce the project image and brand, cross-fertilize PARITY concepts and solutions with state-of-the-art techniques, foster cross-project cooperation and provide a fundamental verification of soundness of project results via peer review. Complementary means, like organization/ participation in thematic panels, workshops, roundtables and conference sessions, poster presentations and specialized demonstrations at scientific events will also be utilized. The time plan and responsibilities for the scientific publications are already presented in Table 5.

3.3.5 Workshops and training

The most important workshops and training activities during the project duration are foreseen to be subsumed under the “living lab activities” of the project. Those activities are foreseen to be conducted in all pilot sites of PARITY, including training sessions for the Living Lab participants but also for wider local audience. More information regarding the workshops under the framework of the living lab activities, can be found in D 9.1 - Living Lab setup activities.

3.3.6 Thematic events and fora

To raise project awareness, to present the project results and to liaise with potential stakeholders, PARITY partners will participate in events like Concertation Meetings, industry and professional

initiatives, thematic working groups and “Info Days”. The PARITY partners will participate in at least 30 events during the project lifetime.

3.3.6.1 Target events

In the following Table 9 an indicative, non-binding list of candidate scientific conferences and industrial events is given for the period of focus M24-M36. This list is being constantly updated by all consortium members, through the project dissemination online monitoring tool.

Table 9. Proposed thematic events list from M24 to M36.

Event Name	Date	Place	Link
10th International Conference on Renewable Energy Research and Applications	26-29 September 2021	Istanbul, Turkey	Link
IEE Blockchain Research & Applications for Innovative Networks and Services	27-30 September 2021	Online	Link
BEHAVE 2022	tba	tba	Link
European Utility Week (EUW)	30 November-2 December 2021	Milan, Italy	Link
Energy Informatics 2020	13 – 17 September 2021	Sion, Switzerland	Link
Decentralized – The Premier Blockchain Conference in Europe	tbd	tbd	Link
European, Mediterranean and Middle Eastern Conference on Information Systems (EMCIS)	8-9 December 2021	Dubai, UAE	Link
Intersolar Europe (Munich, Germany)	6-8 October 2021	Munich, Germany	Link
2021 International Conference on Smart Cities and Smart Grid (CSCSG 2021)	19-21 November 2021	Hangzhou, China	Link
Enlit Europe	30 November–2 December 2021	Milan, Italy	Link
Splitech 2022	5-8 July 2022	Split & Bol, Croatia (Hybrid Event)	Link
Sustainable Places 2022	6-7 September 2022	Nice, France (Hybrid event)	Link

3.3.6.2 Events participation procedure

The following procedure has been established from the beginning of the project and has been followed for participation to events requiring attendance:

A partner should make his application as early as possible and not less than 4 weeks in advance of the event. The application shall be submitted to the Quality Assurance Commission and should be accompanied by a copy of the event program together with a rationale describing the event and explaining the relevance of attendance to the objectives of the project. The application must provide a clear breakdown of the attendance cost explaining the proposed claim for the EC contribution. The partner should also provide the information about the event to the Dissemination & Communication Manager.

Within two weeks after the event, the partner must provide to Quality Assurance Commission a concise written report (1-2 pages) about the event. If possible, the report should be accompanied by the event's proceedings.

The aforementioned rules will be monitored by the Quality Assurance Commission in order to:

- Avoid repetition of publication of the same work
- Avoid publication of confidential data
- Avoid misunderstandings between partners and publications without proper referencing
- Secure optimum use of dissemination resources of the project
- Ensure proper archiving of all dissemination material

4.DETAILED ACTIVITIES OF EACH PERIOD

4.1 Month 1-6

This section provides an overview of the communication and dissemination activities, during the first six months, as presented in deliverable 9.2 “Dissemination and Communication Plan Activities v1”.

4.1.1 Project Website

The website comprises 9 sub-sections, namely the “about” section, the “concept”, the PARITY “solutions”, the PARITY “pilots”, “partners”, “news”, “events”, “publications” and a contact form, as is shown in Figure 10. Moreover, the PARITY website is visually attractive and informative, as presented in the following Figure 11 and Figure 12. More information regarding the website can be found in D9.3 “Dissemination and Communication Package”

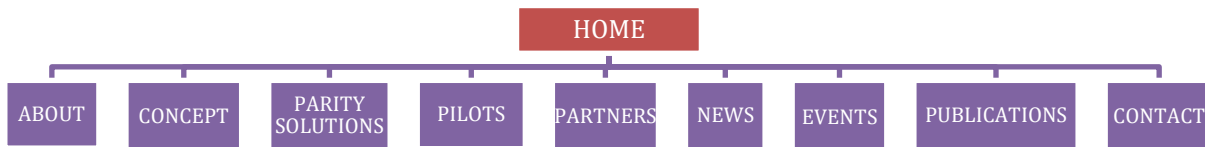


Figure 10. The PARITY website structure.

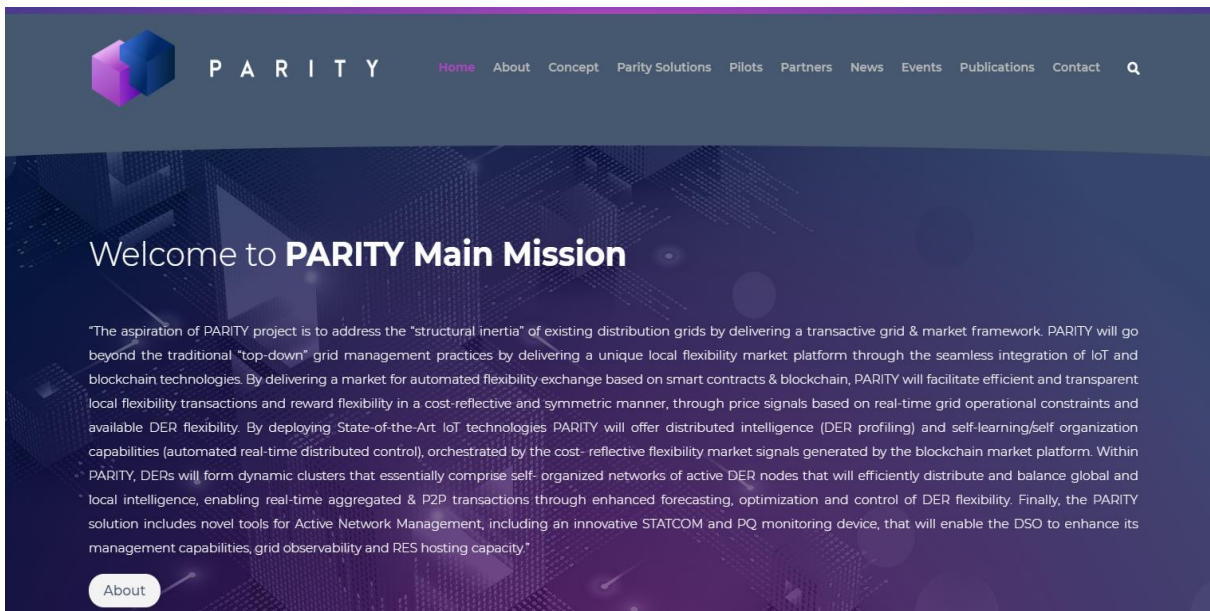


Figure 11. Home page screen capture with project mission.

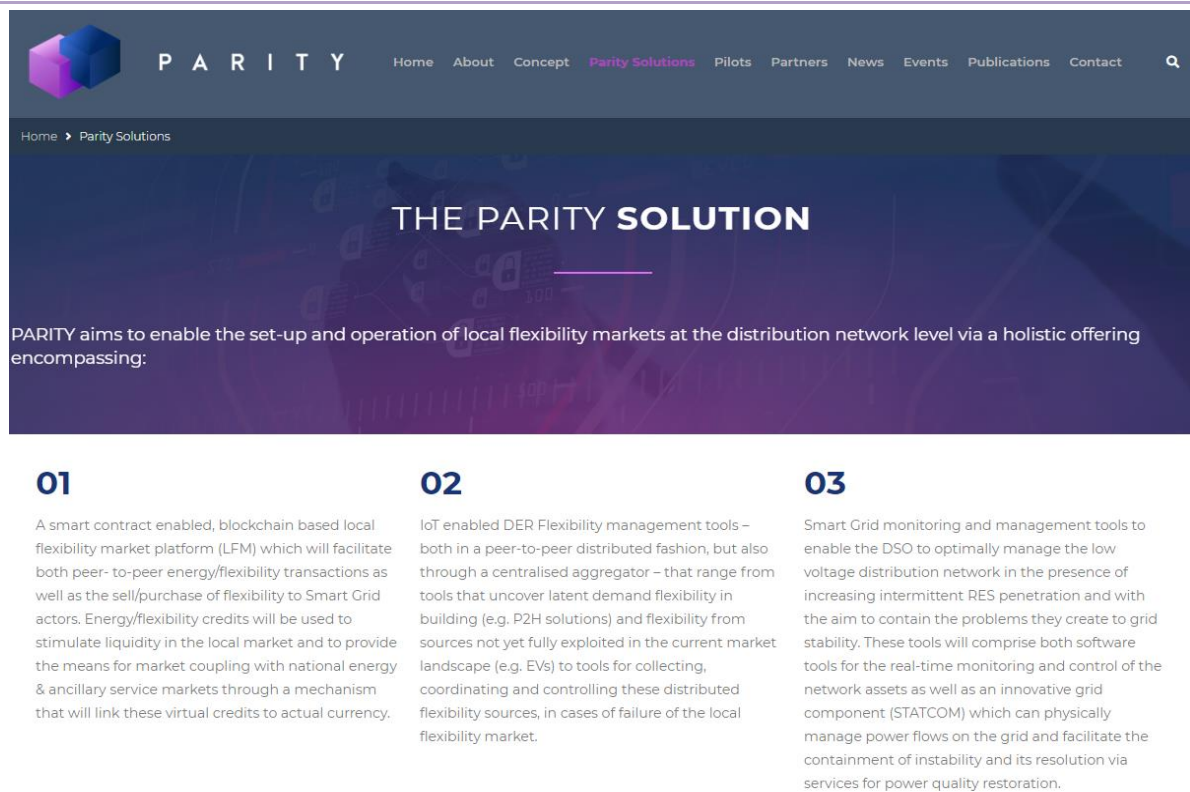


Figure 12. Screen capture of the “Solution” section.

4.1.2 Social Media

4.1.2.1 Twitter

The project’s Twitter account, as shown in Figure 13, will be used as one of the primary communication media, given its efficiency in terms of user engagement and visibility by momentarily reach a large audience or retweet relevant content.

The PARITY Twitter account can be followed in the following link:

https://twitter.com/Parity_H2020

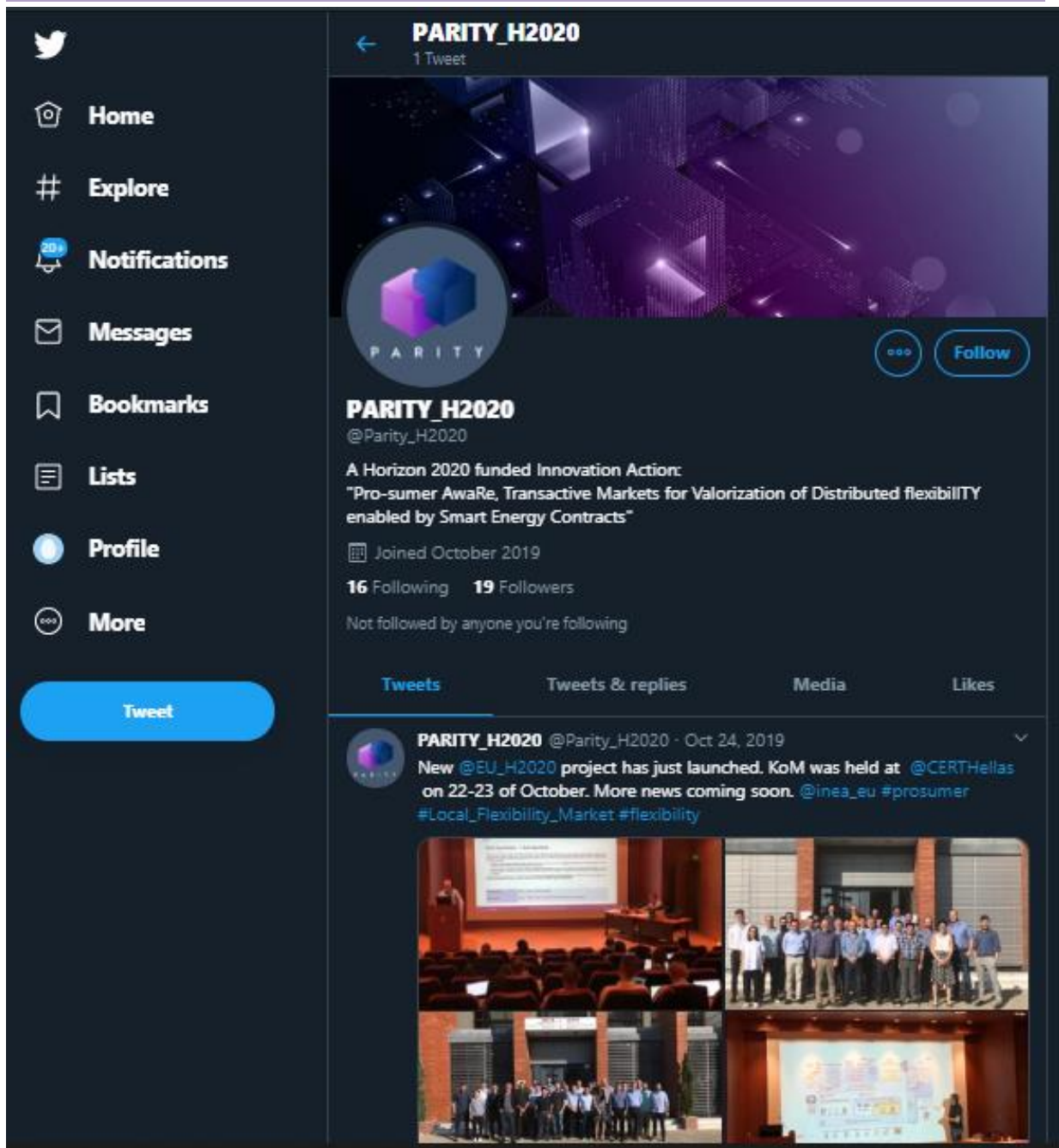


Figure 13. The PARITY Twitter page.

4.1.2.2 LinkedIn

The next social media channel that is chosen to be created in the framework of the project is LinkedIn. The LinkedIn platform is considered to be less popular than other social media platforms, however, it is the most relevant medium for professional use and business networking. As this networking site is targeting professionals, it can be used for reaching other business groups or professionals that might be interested in the scope, objectives, results or solutions of the PARITY project.

The PARITY LinkedIn account can be followed at the following link:

www.linkedin.com/company/parity-h2020

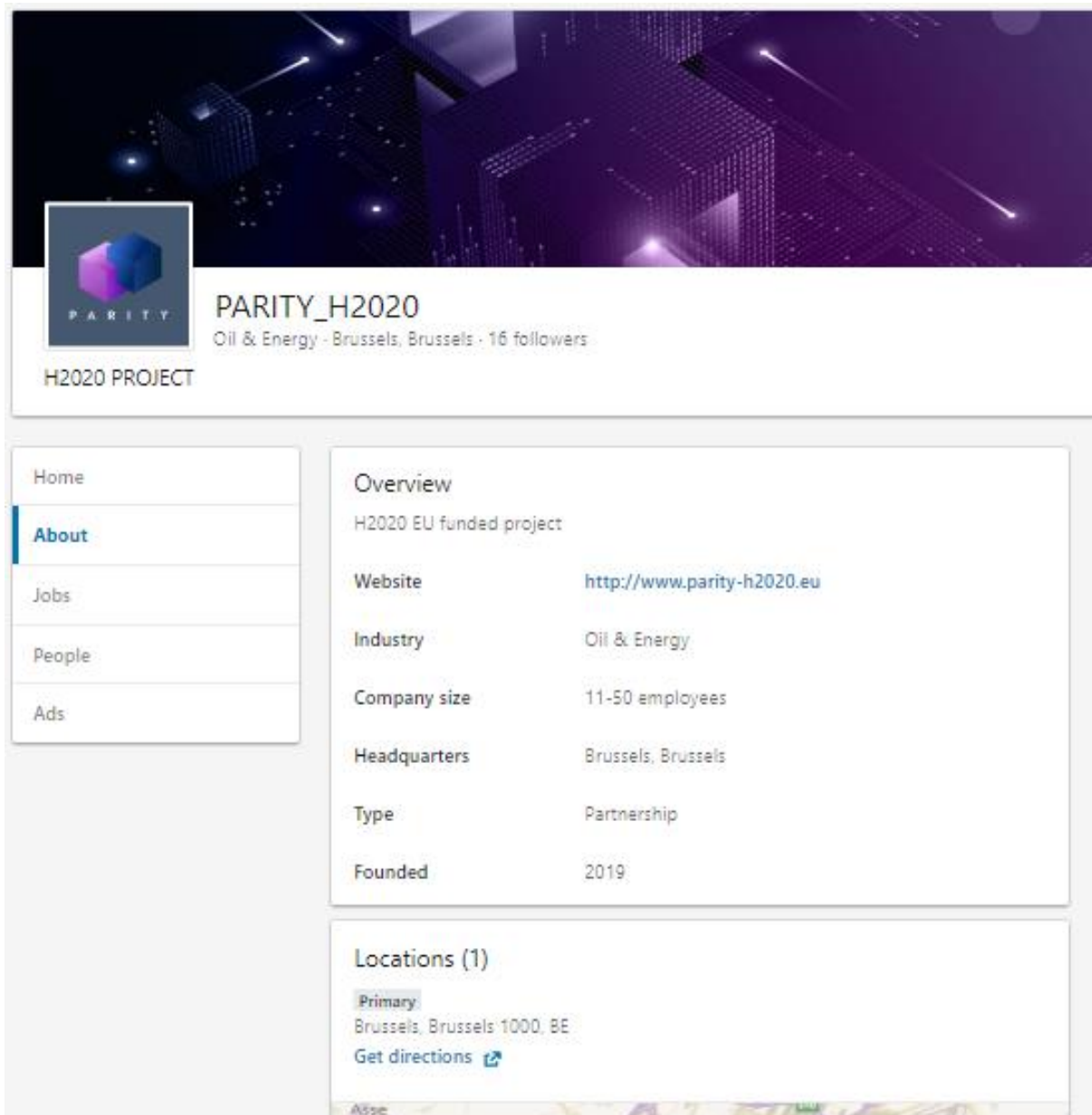


Figure 14. The PARITY LinkedIn page.

4.1.2.3 Facebook

In addition to Twitter and LinkedIn accounts, the PARITY project's third social media channel is Facebook. Facebook is the most popular and recognized social network. Therefore, it has the ability to reach a wide audience of multiple targets, guaranteeing the best results in disseminating the PARITY project, events, updates and results.

The PARITY Facebook page can be followed in the following link:

<https://www.facebook.com/PARITYH2020/>

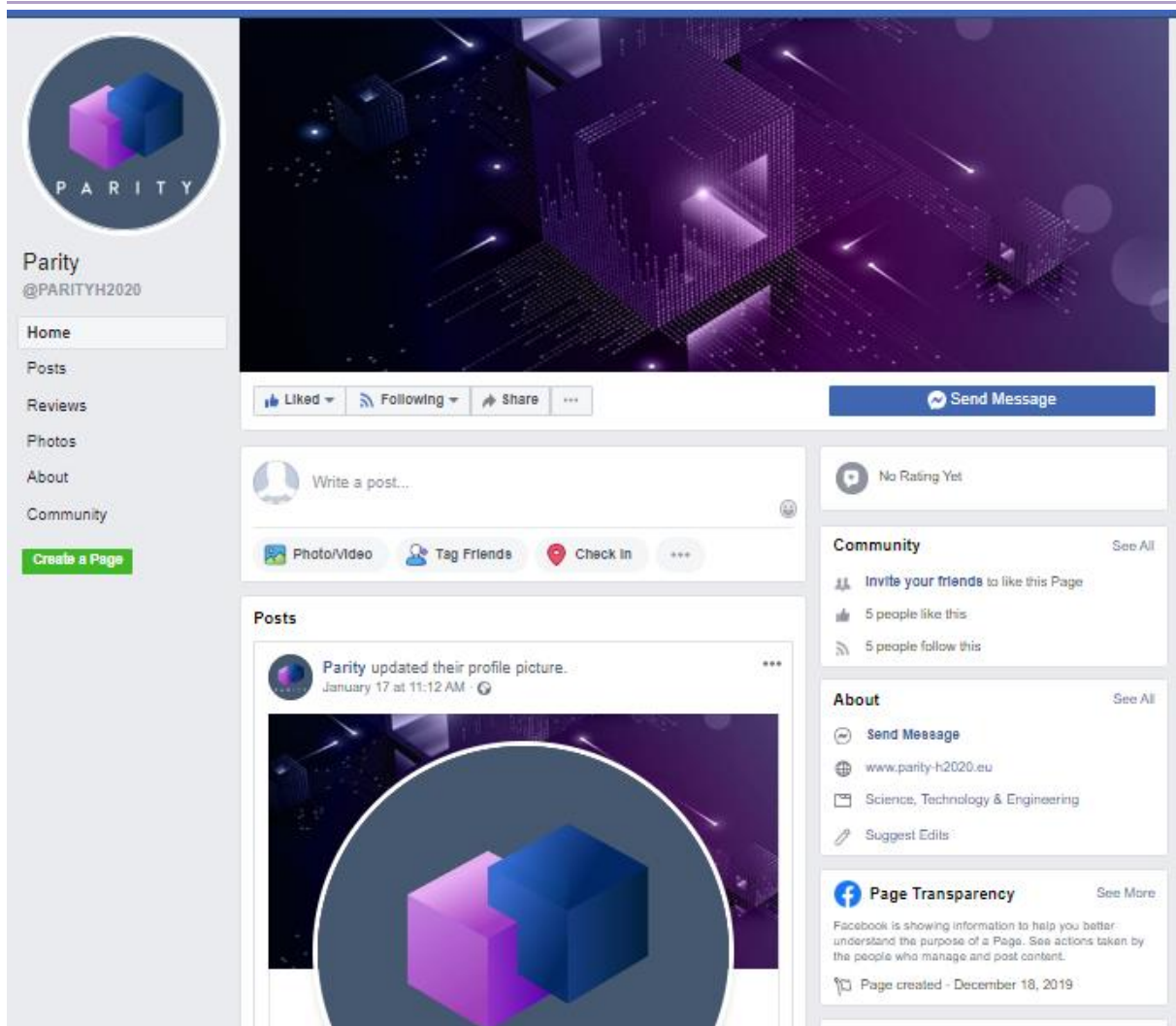


Figure 15. The PARITY Facebook page.

4.1.2.4 YouTube

YouTube will be the last social media account that is created for the PARITY project. It is a video sharing platform that allows users to upload, view, rate, share, comment on videos and subscribe to other users. Therefore, a YouTube page is created, which will be used as soon as relevant content is available.

The PARITY YouTube page can be followed in the following link:

https://www.youtube.com/channel/UCX_VKEf_LA_uNJ2wp75-OYQ

Finally, in the following Table 10, all project social media are presented in brief, with the account name and URL for each one.

Table 10. The PARITY social media in a brief.

Social Network	PARITY account	PARITY account URL
	PARITY_H2020	https://twitter.com/Parity_H2020
	PARITY_H2020	www.linkedin.com/company/parity-h2020
	PARITY	https://www.facebook.com/PARITYH2020/
	PARITY_H2020	https://www.youtube.com/channel/UCX_VKEf_LA_uNJ2wp75-OYQ

4.1.3 Newsletters


The first semesterly PARITY newsletter was released by the end of March 2020 and distributed to all partners to be disseminated through their channels. The main content of the first newsletter is the presentation of the project, its objectives and to present the results of the first two project meetings. Moreover, to increase the audience of the newsletter, a registration form has been added in the project website. An extract of the first project newsletter is available in the following Figure 16.











Figure 16. Page 1 of the first PARITY newsletter.

4.1.4 Publications

In the following list the most relevant scientific journals for the publications of PARITY are presented. This list shall be considered as an indicative, non-binding list.

-  Energies
 - Available at: <https://www.mdpi.com/journal/energies>
-  Elsevier Applied Energy,

- Available at: <https://www.journals.elsevier.com/applied-energy>
-  Elsevier Energy Policy,
 - Available at: <https://www.journals.elsevier.com/energy-policy>
-  Elsevier Energy,
 - Available at: <https://www.journals.elsevier.com/energy>
-  Elsevier Electric Power Systems Research,
 - Available at: <https://www.journals.elsevier.com/electric-power-systems-research>
-  IEEE Transactions on Power Systems,
 - Available at: <https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=59>
-  IEEE Transactions on Smart Grid,
 - Available at: <https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=5165411>
-  IEEE Access,
 - Available at:
<http://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=6287639#AimsScope>
-  MDPI Energies,
 - Available at: <https://www.mdpi.com/journal/energies>
-  Taylor & Francis Electric Power Components and Systems,
 - Available at:
<http://www.tandfonline.com/action/journalInformation?show=aimsScope&journalCode=uemp20>
-  Energy Informatics, Springer
 - Available at: <https://energyinformatics.springeropen.com>
-  Journal of Modern Power Systems and Clean Energy, Springer
 - Available at: <https://www.springer.com/journal/40565>
-  Renewable and sustainable energy reviews, Elsevier, ISBN: 1364-0321
 - Available at: <https://www.sciencedirect.com/journal/renewable-and-sustainable-energy-reviews>
-  Applied Energy, Elsevier
 - Available at: <https://www.sciencedirect.com/journal/applied-energy>
-  Sustainable Energy Grids and Networks, Elsevier
 - Available at: <https://www.sciencedirect.com/journal/sustainable-energy-grids-and-networks>
-  Energy and buildings, Elsevier
 - Available at: <https://www.sciencedirect.com/journal/energy-and-buildings>
-  Energy Procedia
 - Available at: <https://www.journals.elsevier.com/energy-procedia>
-  Future Generation Computer Systems
 - Available at: <https://www.journals.elsevier.com/future-generation-computer-systems>

-  Telematics and Informatics
 - Available at: <https://www.journals.elsevier.com/telematics-and-informatics>
-  Sustainable Computing: Informatics and Systems
 - Available at: <https://www.journals.elsevier.com/sustainable-computing-informatics-and-systems>
-  The Journal of British Blockchain Association
 - Available at: <https://jbba.scholasticahq.com/>
-  Special Issue on Emerging Blockchain Applications and Technology
 - Available at: <https://www.springer.com/journal/11280/updates/17528390>
-  Special Issue on Blockchain and Decentralization for Internet of Things
 - Available at: <https://www.journals.elsevier.com/future-generation-computer-systems/call-for-papers/special-issue-on-blockchain-and-decentralization-for-interne>

4.1.5 Workshops and trainings

The most important workshops and training activities during the project duration are expected to be subsumed under the “living lab activities” of the project. Those activities are foreseen to be conducted in all PARITY pilot sites, including training sessions for the Living Lab participants and also for a wider local audience. More information regarding the workshops under the framework of the living lab activities, can be found in D 9.1 - Living Lab setup activities.

4.1.6 Thematic events and forums

In Table 11, the thematic events and forums, that PARITY consortium members have already participated in, is presented:

Table 11. Participation list in thematic events and fora.

Event Name	Date	Place	Type	Partner	Short description & Comments	Audience
International Blockchain Forum Rotkreuz 2020	19/2/2020	Rotkreuz, Switzerland	Forum / conference	HIVE	Presentation of the project	Scientific

4.1.7 Dissemination material

This section provides an overview of the project’s graphic identity and branding strategy. For more information regarding the dissemination material, please refer to D9.3 “Dissemination and Communication Package”.

4.1.7.1 Project logo

A unique project logo has been developed for project identity, as shown in Figure 17. A logo can help the user to form the right impression about the project idea. A smart element arrangement is required as well as a thorough selection of colours, fonts, and icons.

The logo is consisted of a visual presentation of two interlinking cubes, representing the transactive grid and blockchain technologies. The use of these particular colours resembles to the dynamic of the technologies included in the project. The main principle followed throughout the project, is consistency with the branding design. The same colours will be used for templates, presentations and other materials.



Figure 17. The PARITY project logo.

4.1.7.2 Leaflets

During the first months of the PARITY project the first two-sided triptych leaflet has been produced, reflecting the vision of the project and for use with both printable and electronic versions. The main purpose of the leaflet is to present the project's objectives, scope, and anticipated impact. In parallel it presented the proposed by PARITY solutions and present all project partners with their logos.

The two sides of the first project leaflet in electronic version, appears in the following Figure 18 the first side and Figure 19 the second. The full version of the project leaflet is available for download in the project website.



Figure 18. First side of project leaflet.



Figure 19. Second side of project leaflet.

4.1.7.3 Posters and roll-ups

The first project roll-up was produced in a way that reflects its main vision, scope, approach, objectives and high-level characteristics of the PARITY solutions in a minimal but appealing manner. The roll-up is designed keeping the same graphic identity and aesthetics as the leaflet with the scope to serve the PARITY branding strategy, project profile and artistic homogeneity as presented in Figure 20: The full version of the project poster is available for download in the project website.



Figure 20. The PARITY project roll-up.

4.2 Month 6-12

This section provides an overview of the dissemination and communication activities, from month 6 to month 12.

4.2.1 Project Website

During this period, the project website was updated regularly, as its content was finalized with descriptions contributed from all partners.

Moreover, first analytics have become available for the website traffic. Those were reporting website activity such as unique visitors, session duration, pages per session and bounce rate. The results will contribute to the impact assessment of the actions and content shared through the website.

In the following Figure 21, the overview of the website analytics is available. The reference period website performance measurement is May 1st until September 15th, 2020. From those results one can see that a total number of 341 unique users have visited the PARITY website, with an average session

duration of one minute and thirty-nine seconds. The total sessions in this period are 457, with an average of 1.34 sessions per user. The total pageviews are 1056, with an average of 2.31 pageviews per session.

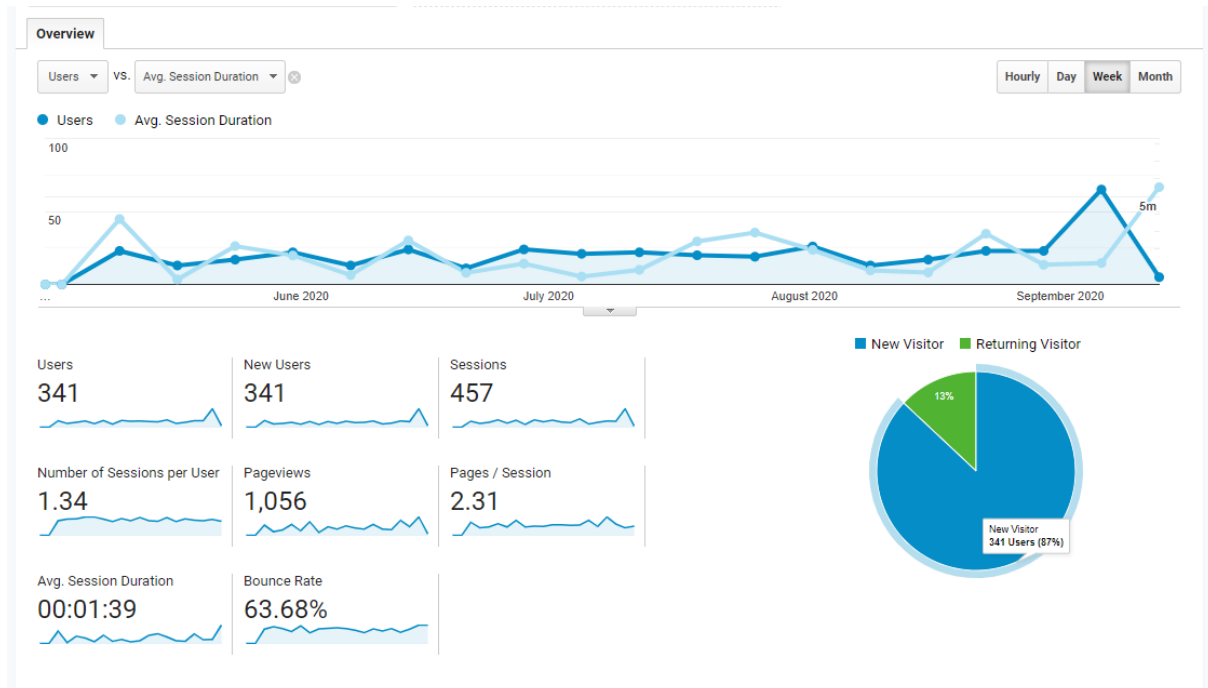


Figure 21. Google analytics results for PARITY website.

Analysing the results, one can conclude that the number of visitors is steadily increasing, as can be better seen in the following Figure 22, where the results are presented per month. Apart from August (due to summer vacation) and considering that September has been counted only up to 15th, the number of website visitors is steadily increasing, as the content is finalized, and the project increases its impact.

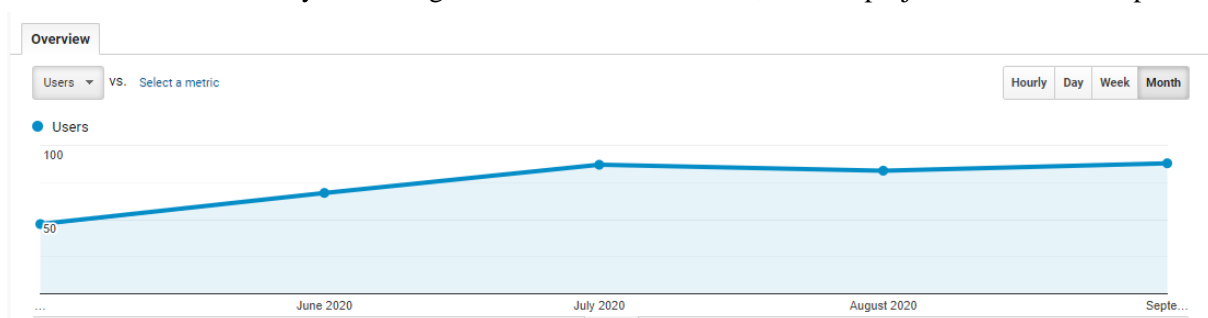


Figure 22. Google analytics results for visitors per month.

Regarding the demographics (Figure 23) of the audience, PARITY website attracts mainly younger visitors, while it maintains a balanced gender profile, with slightly more male visitors.

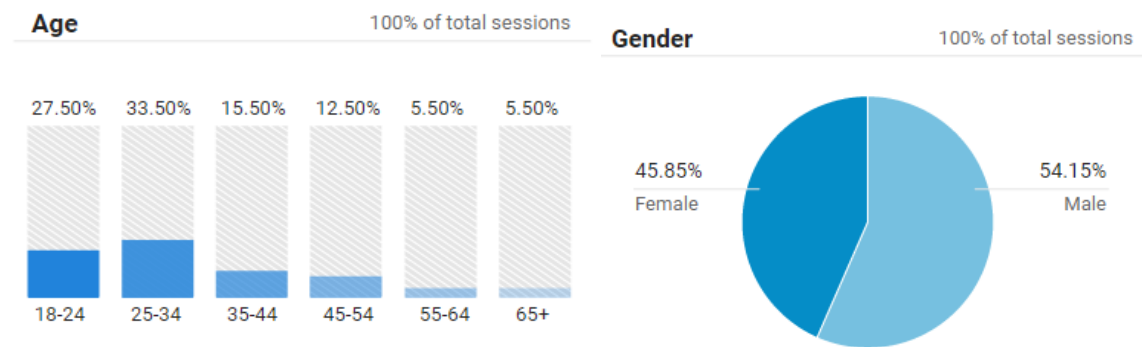


Figure 23. Demographics of PARITY website visitors.

Finally, as can be seen in Figure 24, the geographic data indicates that the website attracts visitors from all over the world. Due to the nature of the consortium, most visitors are from Spain and Greece.

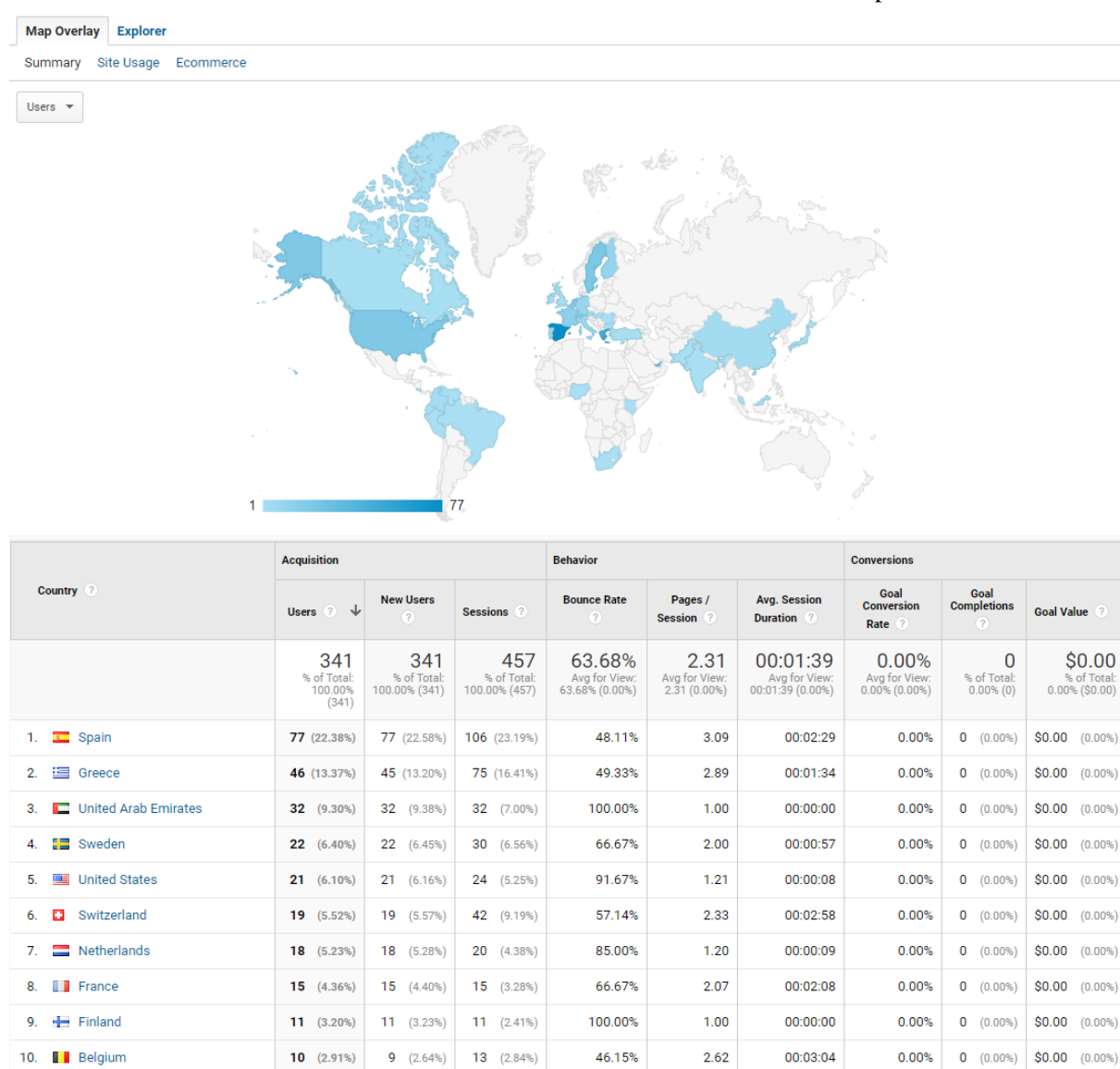


Figure 24. Google analytics geographic data for PARITY website.

4.2.2 Social Media

During the first six months of the project, PARITY social media accounts were created: LinkedIn, Twitter, Facebook and YouTube. During the second semester the Twitter account was updated weekly, following the “post of the week” timeline, as agreed with partners. With this procedure, one member of the consortium is responsible for providing the post of the week. In the same way posts were provided for the Facebook account, while the LinkedIn account was updated regularly. The YouTube account will be updated as soon as the first project video will be prepared

In total the PARITY accounts in social media have 110 followers. Regarding the activity there have been 53 posts in total, which led to 196 reactions (likes, shares, and comments) increasing the project’s impact significantly. In Figure 25, screenshots of the PARITY Twitter account from September 2020 are available.

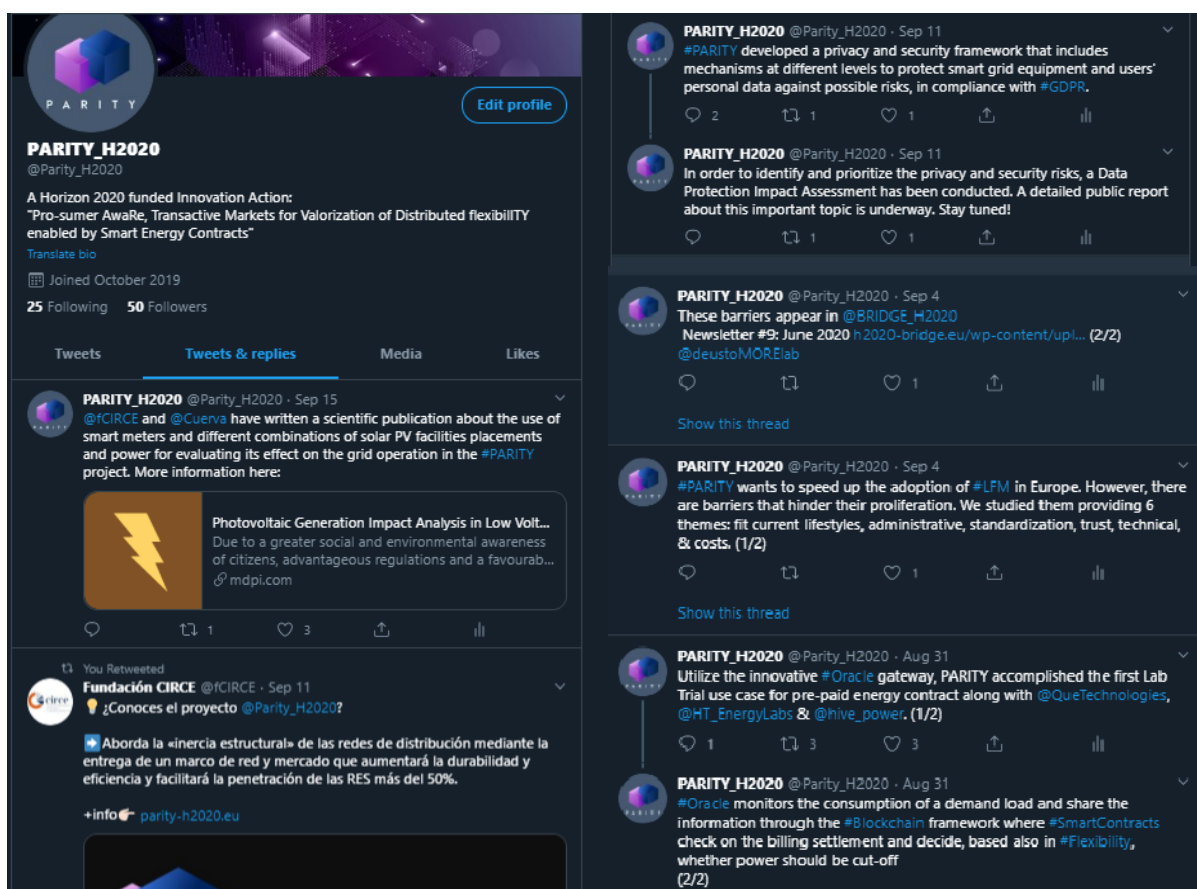


Figure 25. The PARITY Twitter account in Month 12.

4.2.3 Newsletters

As anticipated by the end of month 12, the second project newsletter was issued. As one can see in Figure 26, this newsletter includes information about the PARITY solutions, as described in the project website and updates about the project news for the second semester. All newsletters are available for download in the project website.



Figure 26. The second PARITY newsletter.

4.2.4 Publications

During the second semester of the project, the project consortium members succeeded to have one scientific paper published. The authors were Gregorio Fernández, Noemi Galan, Daniel Marquina, Diego Martínez, Alberto Sanchez, Pablo López, Hans Bludszuweit, and Jorge Rueda. The title was “Photovoltaic Generation Impact Analysis in Low Voltage Distribution Grids”, and it was published in *Energies* 2020, Volume 13, Issue 17, pages 4347 – 4374. The full text of this open access publication can be found in this link <https://www.mdpi.com/1996-1073/13/17/4347>. The abstract and further details of this publication are depicted in Figure 27.



Article

Photovoltaic Generation Impact Analysis in Low Voltage Distribution Grids

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Received: 20 July 2020; Accepted: 14 August 2020; Published: 22 August 2020



Abstract: Due to a greater social and environmental awareness of citizens, advantageous regulations and a favourable economic return on investment, the presence of photovoltaic (PV) installations in distribution grids is increasing. In the future, not only a significant increase in photovoltaic generation is expected, but also in other of the so-called distributed energy resources (DER), such as wind generation, storage, electric vehicle charging points or manageable demands. Despite the benefits posed by these technologies, an uncontrolled spread could create important challenges for the power system, such as increase of energy losses or voltages out-of-limits along the grid, for example. These issues are expected to be more pronounced in low voltage (LV) distribution networks. This article has two main objectives: proposing a method to calculate the LV distributed photovoltaic generation hosting capacity (HC) that minimizes system losses and evaluating different management techniques for solar PV inverters and their effect on the hosting capacity. The HC calculation is based on a mixture of deterministic methods using time series data and statistical ones: using real smart meters data from customers and generating different combinations of solar PV facilities placements and power to evaluate its effect on the grid operation.

Keywords: photovoltaics; distributed energy resources (DERs); grid impact; power quality; low-voltage distribution network; inverter regulation

Figure 27. Part of the PARITY first publication.

4.2.5 Thematic events and fora

Finally, up to this period the consortium members have participated in total in 6 events (considering the total number of events from M1 to M6), as presented in the following Table 12.

Table 12. Events participation during the second semester.

Event name	Dates	Place	Type	Partner	Short description	Audience
<u>Seminar about behavior change in energy-related projects</u>	15/07/2020	Cardiff, Wales, UK	Series of seminars	DEUSTO	Barriers that hinder LFM adoption	Scientific
<u>IEEE PES SPAIN. THE ENERGY TRANSITION: Power electronics: key to the transformation of the electricity network. Challenges and opportunities</u>	16/07/2020	Online webinar	Forum / conference	CIRCE	Analyses the causes that can lead to a malfunctioning of the electrical network protection system due to a high penetration of power electronics devices in the system and sets out the basis for power electronics technology to solve the problems raised.	Scientific, industry, public authorities, and stakeholders.
<u>"The Grid Connection European Stakeholder Committee (GC ESC)</u>	10/09/2020	Online webinar	Expert group meeting	CWATT	Modernization of the Requirements for Generators (RfG) by Entso-e. For example, on how to include distributed energy storage and demand side flexibility.	TSOs, industry, lobby organizations.
<u>EU PVSEC Opening Panel discussion</u>	07-11 /09/2020	Online panel	Forum / conference	AEM	The new business frame for making DER (and in particular PV) a consistent system, including link to the Local Flexibility Market	Scientific, industry, public authorities and stakeholders.
<u>5th International Conference on Smart and Sustainable Technologies</u>	23-26 /9/2020	virtual event	Conference	DEUSTO, UNIC, E7	Barriers to Widespread the Adoption of Electric Flexibility Markets: A Triangulation Approach	Scientific

4.2.6 Dissemination material

4.2.6.1 Project reference presentation

According to the dissemination and communication plan, by the end of month 12 the first project reference presentation has been prepared including general information about the project objectives, concept, solutions, pilots and the members of the project consortium. The layout of the presentation is following the general branding design and project image using the same colours, as for the rest templates, presentations, website and the PARITY logo. Part of this presentation is available in the following Figure 28.



Figure 28. Part of the first project's reference presentation.

4.2.7 Living lab activities

During this period, no specific targets for the living lab activities has been set, as the first workshops are anticipated to be executed by month 18 of the project. Nevertheless, the organization of those workshops has already begun in cooperation with the pilot site owners and the technology providers. Their scope is to identify the end user needs and give the opportunity to the technology providers to receive feedback from the end user for the tools to be developed within the PARITY framework. Moreover, it will enable testing & validation in real -yet limited- conditions and receive feedback from a specified number of end users to ensure reliability, scalability, and user acceptance. This procedure will initiate the live feedback loop between the end users and technology providers, a procedure that lies in the heart of the user driven innovation approach of the PARITY project.

From the channels presented in the toolkit of deliverable 9.1, the “questionnaires – interviews” and the “focus groups” will be implemented. If necessary and according to the need of the technology providers, “usability testing”, “contextual inquiry” or “Scandinavian methods” might also be used. Those

parameters will be finalized in the next period and by month 16 the latest, to start preparing the required material for the workshop execution.

Moreover, according to the measures applied in all Europe because of the health crisis due to the COVID-19 outbreak, the exact nature of those workshops is still under investigation and will be decided according to the needs and capabilities of each pilot site separately, always considering the health and safety of the participants. As a result, if the organization of workshops with physical presence is impossible in some cases, the pilot site owners will be able switch to online events, using the same tools and maintaining the same scope for the workshop.

4.3 Month 13-24

This section provides an overview of the dissemination and communication activities that were implemented from month 13 and up to month 24 of the project.

4.3.1 Project Website

During this period, the project website was updated regularly with various additions. More specifically the following sections were added:

- a section showcasing the 1st project video that was developed and published by M18 (more details about the video to follow)
- a section providing a summary of the Joint Workshop: Distributed Flexibility Markets in H2020 Projects that was held together with H2020 sister project INTERPRETER in March 2021
- a section outlining key findings of the Parity H2020 Market Transformation Survey. Within the survey, PARITY partners have extensively surveyed and analysed the energy market, providing market opportunities and threats in key PARITY solutions.

Furthermore, various key web-site metrics were being monitored during the relevant period using Google Analytics Platform tools. Those metrics are reporting website activity, unique visitors, session duration, pages per session and bounce rate. The results contribute to the impact assessment of the actions and content shared through the website.

In the following Figure 21, the overview of the website analytics for the period in focus (M13-24) is available. The reference period website performance measurement is May 1st (the day the website went live for the first time) until September 20th, 2021. This way, the average metric values for the entire website life are being calculated.

From those results one can see that a total number of 1647 unique users have visited the PARITY website, with an average session duration of one minute and forty-five seconds. The total sessions in this period are 2203, with an average of 1.34 sessions per user. The total pageviews are 5169, with an average of 2.35 pageviews per session.

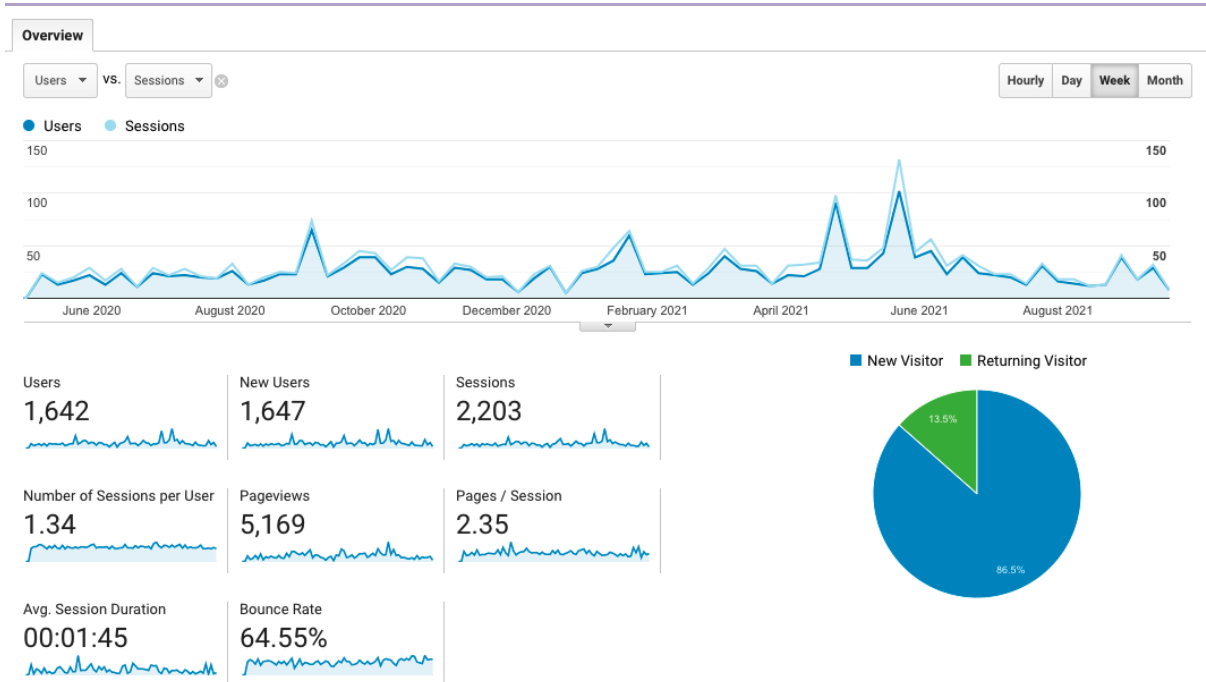


Figure 29. Google analytics results for PARITY website.

Analysing the results, one can conclude that while in the first 13 months of the project, visitor number had an increasing trend, a steady decline can be observed from May 2021 up until September. This has to do with the fact that no new content has been uploaded on the website as was initially scheduled. Scope at this point was to have enriched the website with more data and information about the finalized PARITY pilot sites which would be subsequently promoted via the project’s social media accounts. However due to the ongoing pandemic, considerable delays have occurred in finalizing the pilots which are still under finalization. The above promotion of the pilot sites is planned to be implemented in the coming months of the project.

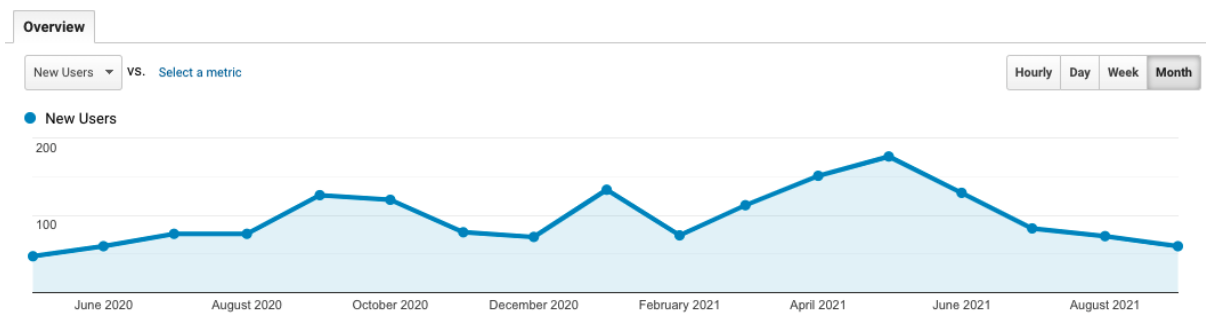


Figure 30. Google analytics results for visitors per month.

Finally, as can be seen in Figure 31, the geographic data indicates that the website attracts visitors from all over the world. Due to the nature of the consortium, most visitors are from Spain and Greece.

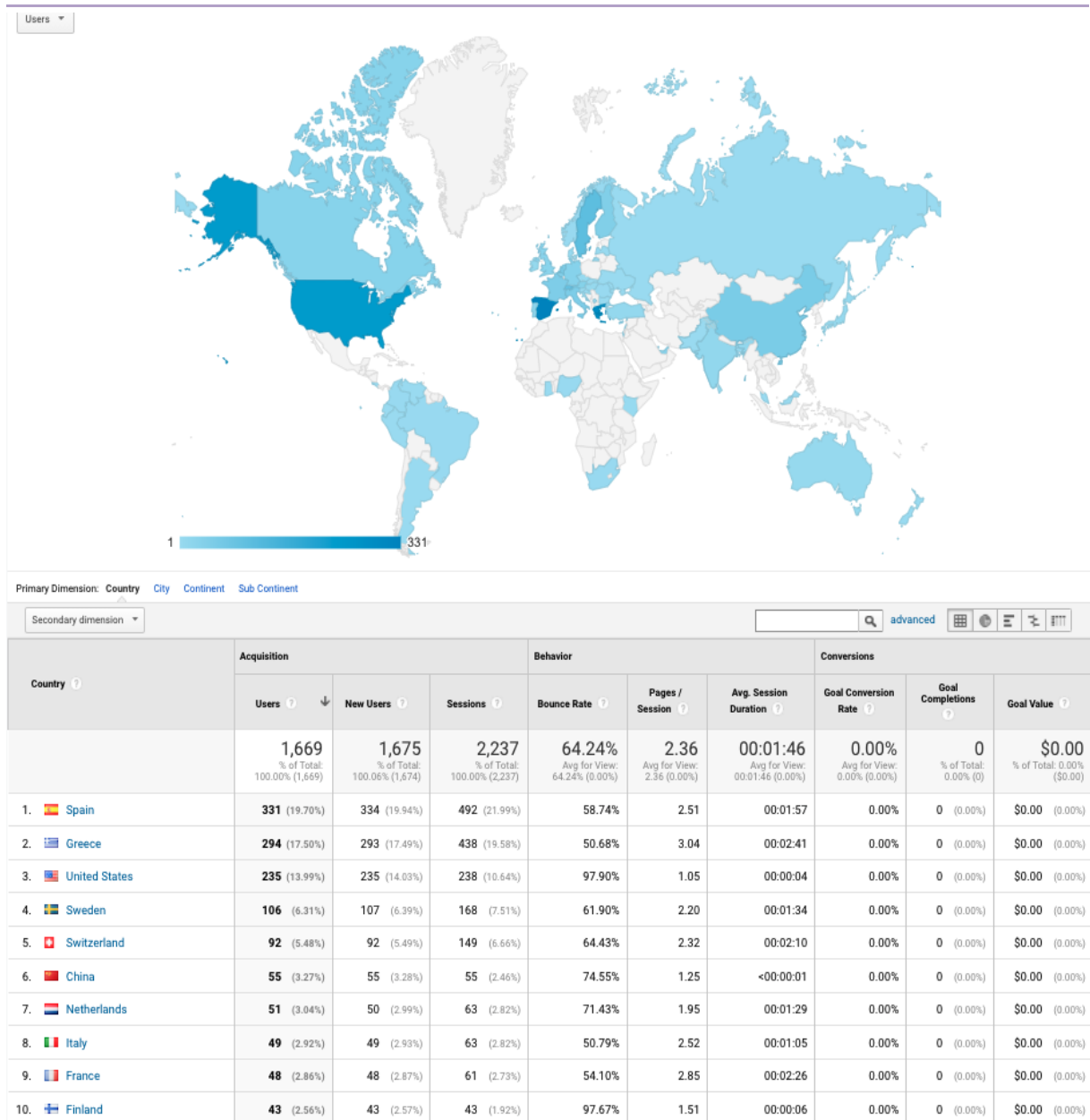


Figure 31. Google analytics geographic data for PARITY website.

4.3.2 Social Media

From month 13 and up to month 24 of the project, the Twitter account was being updated weekly, following the “post of the week” timeline agreed with the partners. According to this procedure, one member of the consortium is responsible for providing contents for the post of the week. Similarly, content was also provided by partners for the Facebook account posts, while the LinkedIn account was updated monthly with a more extensive and descriptive post.

In total, the PARITY social media accounts have 253 followers which compared to the 110 followers reported a year ago marks a 130% increase. Regarding the activity there have been 133 posts in total.

4.3.3 Newsletters

The project newsletters foreseen to have been published during this period was one in month 18 of the project (3rd Newsletter, March 2021) and one by the end of September 2021 (4th Newsletter). Issuing of the 3rd Newsletter however has been delayed as scope of this edition had been to present and promote the finalized pilot sites of PARITY with detailed description of the characteristics and the planned PARITY tools to be deployed in each one of them. Finalization of the pilot sites was delayed due to the COVID health crisis and the related restrictions that were applied across Europe. Finalization however of the pilot sites has recently concluded and the relevant newsletter is being prepared to be released in the coming weeks. Furthermore, all consortium partners have been asked in the beginning of September 2021 (M24) to provide a status update regarding their so far undertaken tasks as well as their expectations for the months to come to gather the necessary input for the 4th edition of the PARITY newsletter.

4.3.4 Publications

Up to M24 the project consortium members succeeded to have in total 7 scientific papers published considering the one publication during M6-M12. The details of these publications as well as the repository link where they can be accessed may be seen in Table 13.

Table 13. PARITY Project Scientific Publications M13-M24.

Type	Title	Authors	Title of the Journal/Proc/Book	Is peer reviewed	Is Open Access	DOI	Repository Link
Conference paper	A Smart Distributed Marketplace	Evgenia Kapassa, Marios Touloupos, Dimosthenis Kyriazis, Marinos Themistocleous	EMCIS 2019: Information Systems pp 458-468	Yes	Green	https://doi.org/10.1007/978-3-030-44322-1_34	Link
Conference paper	Blockchain in Smart Energy Grids: A Market Analysis	Kapassa E., Themistocleous M., Quintanilla J.R., Touloupos M., Papadaki M.	EMCIS 2020: Information Systems pp 113-124	Yes	Green	https://doi.org/10.1007/978-3-030-63396-7_8	Link
Conference paper	Barriers to Widespread the Adoption of Electric Flexibility Markets: A Triangulation Approach,	Koldo Zabaleta, Diego Casado-Mansilla, Evgenia Kapassa, Cruz E. Borges, Guntram Presmair, Marinos Themistocleous, Diego Lopez-de-Ipina	5th SpliTech, 23-26 September 2020	Yes	Green	10.23919/Spl iTech49282.2020.9243744	Link
Conference paper	4L D-STATCOM para redes débiles desbalanceadas de baja tensión	Javier Ballestín, Jesús Muñoz-Cruzado and Jose Francisco Sanz	VII Congreso Smart Grids 2020	Yes	Gold	-	Link

Conference paper	Non-intrusive load monitoring for demand side management	Matteo Salani, Marco Derboni, Davide Rivola, Vasco Medici, Lorenzo Nespoli, Federico Rosato & Andrea E. Rizzoli	9th DACH+ Conference on Energy Informatics	Yes	Gold	https://doi.org/10.1186/s42162-020-00128-2	Link
Scientific Paper	Overcoming barriers for the adoption of Local Energy and Flexibility Markets: A user-centric and hybrid model	Guntram Pressmair, Evgenia Kapassa, Diego Casado-Mansilla, Cruz E. Borges, Marinos Themistocleous	Journal of Cleaner Production	Yes	Green	https://doi.org/10.1016/j.jclepro.2021.128323	Link

4.3.5 Thematic events and fora

Finally, up to the end up to this period the consortium members have participated in total in 23 events (considering the total number of events from M1 to M24), as presented in **Table 14**.

Table 14. Events participation during the second semester.

Event name	Dates	Place	Type	Partner	Short description	Audience
Swedish Solar Expo (Svenska Solelmässan)	28/10/2020	Virtual event	Digital Conference and Expo	E.ON and CWATT	Presentation of the project	Scientific, industry, public authorities and stakeholders.
Virtual week 2020- CIGRE SPAIN	23-26/11/2020	Virtual event	Forum / conference	CIRCE	principle of operation of this equipment and how it is integrated into an unbalanced network is explained	Scientific, industry, public authorities and stakeholders.
VII Smart Grids Spanish Congress	16/12/2020	Virtual event	Forum / conference	CIRCE	principle of operation of this equipment and how it is	Scientific, industry, public authorities and stakeholders.

					integrated into an unbalanced network is explained	
2nd Blockpool Bootcamp	24-25/11/2020	Virtual event	Bootcamp	UNIC, E7, Hypertech, MERIT, HIVE, CERTH	Presentation of the project	Scientific, industry, public authorities and stakeholders.
16th European, Mediterranean and Middle Eastern Conference on Information Systems (EMCIS)	09-10/12/2010	British University in Dubai, Dubai, UAE	Conference	UNIC	Presentation of the project	Scientific
Distributed flexibility markets in H2020 projects - Workshop	16/03/2021	Online workshop	Workshop	CERTH, DEUSTO, e7, HIVE	Presentation of PARITY Local Flexibility Market concept and user involvement. A discussion was made after the presentations. The workshop was organised by the H2020 projects INTERPRETER and PARITY.	Scientific
2ème journée Energie citoyenne	21.11.2020	Virtual event	Forum	AEM	ASEC - Association Suisse de l'énergie citoyenne	Scientific, industry, public authorities, and stakeholders.
EnergieSchweiz	26.10.2020	Press Article	Press Article	AEM, HIVE, SUPSI	Il quartiere a elettricità solare	Scientific, industry, public authorities, and stakeholders.
BRIDGE General Assembly meeting	11.02.2020	Brussels, Belgium	Meeting	CERTH	Presentation of the project topic and expected impact	Scientific

Presentation and workshop about 2nd-layer blockchain technologies	15.09.2020	Virtual event	Presentation and workshop	HIVE	Presentation: 15.09.2020 around 300 attendees, workshop: 30.09.2020 with 17 attendees	Energy experts, blockchain experts
Smart Build 4 EU	10.02.2021	Website / Brochure	Press	HYPERTECH	Registration of project to the Smart Building Innovation Community. Project has been listed on the SB4EU and ECTP websites and included in the SB4EU brochure	Energy experts, smart building innovation communities
EUuniversal workshop 2021	06.07.2021	Virtual event	Workshop	CERTH	Participated in session 3: Local market flexibility product design. Provided feedback and answered online questionnaire prepared by the organizers.	Scientific, stakeholders
6th International Conference on Smart and Sustainable Technologies	8-11/9/2021	Hybrid event	Conference	UNIC	Local energy and Flexibility Market: SWOT Analysis & Recommendations	Scientific
<u>Fast Track on Energy Communities Workshop, Sustainable Places 2021</u>	28-29/9/2021	Hybrid event, Rome Italy	Workshop/ Conference	HYPERTECH	Presentation of technologies being used in PARITY	Scientific, Stakeholders
<u>12th International Energy Economic Symposium at TU Vienna</u>	8-10/9/2021	Hybrid event, Vienna Austria	Conference	e7	Conference paper and presentation in the session for Energy Communities	Scientific, energy industry

PowerTech	28-02/7/2021	Madrid, Spain	Forum/ Conference	CIRCE	Presentation	Scientific, industry, public authorities and stakeholders.
ES-1 Inter-project workshop	26/04/2021	Online	Workshop	CERTH, e7, DEUSTO, AEM	Presentation, discussions	Scientific

4.3.6 Joint Workshop with sister project INTERPRETER

On March 16th 2021 at 12:00 (CET), distinct speakers from Horizon 2020 projects PARITY and INTERPRETER presented and jointly discussed in an online workshop, approaches on grid integration and implementation of distributed flexibility market concepts as part of their respective under development solutions. Among others, both projects have set to deal with grid management solutions to address the significant challenges on grid balance caused by known issues such as the inelasticity of demand or the continuously increasing presence of distributed intermittent energy sources. Demand flexibility concepts strive to become part of the solution and as such generate new opportunities for planning, operation and control of the network.

Guest speakers:

- Filippo Bovera from Politecnico di Milano who is working on the development of numerical models for analysing players operating in the evolving electricity markets, analysed the impact of the European Legislation and Implementation of Distributed Flexibility Markets.
- Thomas Walter from the young and innovative German company Easy Smart Grids, developing an innovative smart grid solution allowing the integration of renewable generation while allowing the creation of a market where energy producers and consumers can participate.

Experts from PARITY and INTERPRETER:

- Hans Bludszuweit, expert from CIRCE and coordinator of INTERPRETER, introduced the discussion and Manuel Reyes, expert in smart energy solutions from the Spanish company Turning Tables presented the flexibility approach on digitized distribution grids.
- Stelios Zikos from CERTH and coordinator of PARITY introduced the PARITY concept together with Diego Casado Mansilla from DEUSTO, who presented some conclusions related to the user involvement in the Local Flexibility Market (LFM).
- PARITY partners Davide Rivola (HIVEPOWER) and Guntram Preßmair (E7) contributed to the roundtable discussion as Local Flexibility Market experts regarding respectively the pricing mechanisms and blockchain implementation as well as local market structure and relevant business models.

Workshop Agenda:

- 12:00 Welcome - Hans Bludszuweit (CIRCE), Stelios Zikos (CERTH)
- 12:05 Filippo Bovera and Giuliano Rancilio (POLIMI): “European Legislation and Implementation of Distributed Flexibility Markets”.
- 12:15 Stelios Zikos (CERTH) and Diego Casado Mansilla (University of Deusto): “The PARITY approach – Local Flexibility Market (LFM) concept and user involvement “
- 12:25 Manuel Reyes (TurningTables): “Flexibility approach on digitized distribution grids”

- 12:35 Thomas Walter (EasySmartGrid): “Creating a real time local energy market to integrate customer flex for stability and storage”
- 12:45 Round-table discussion. Moderation: Stelios Zikos and Dimosthenis Ioannidis (CERTH)

The workshop went smoothly and the total number of participants that followed the workshop was 77. The entire workshop session is available in the following link:

<https://www.youtube.com/watch?v=NTwt5X3W3M4>



Figure 32. Guest speakers during the joint workshop with sister project INTERPRETER.

4.3.7 Project 1st Explanatory Video

By month 18, the first project Video was foreseen to be released. The video has indeed released according to the schedule, and it was made available on the project website, as well as on the PARITY YouTube channel. It has a duration of four minutes, and it presents the mission, the goals as well as the entire set of PARITY tools to be developed using infographics and animations. The messages are clear and easy to understand even for non-technical audiences. The video is available in the following link as well as on the project website. In Figure 33 screenshots of the video can be seen. Furthermore, the entire video script is available in [YouTube Video Link](#).

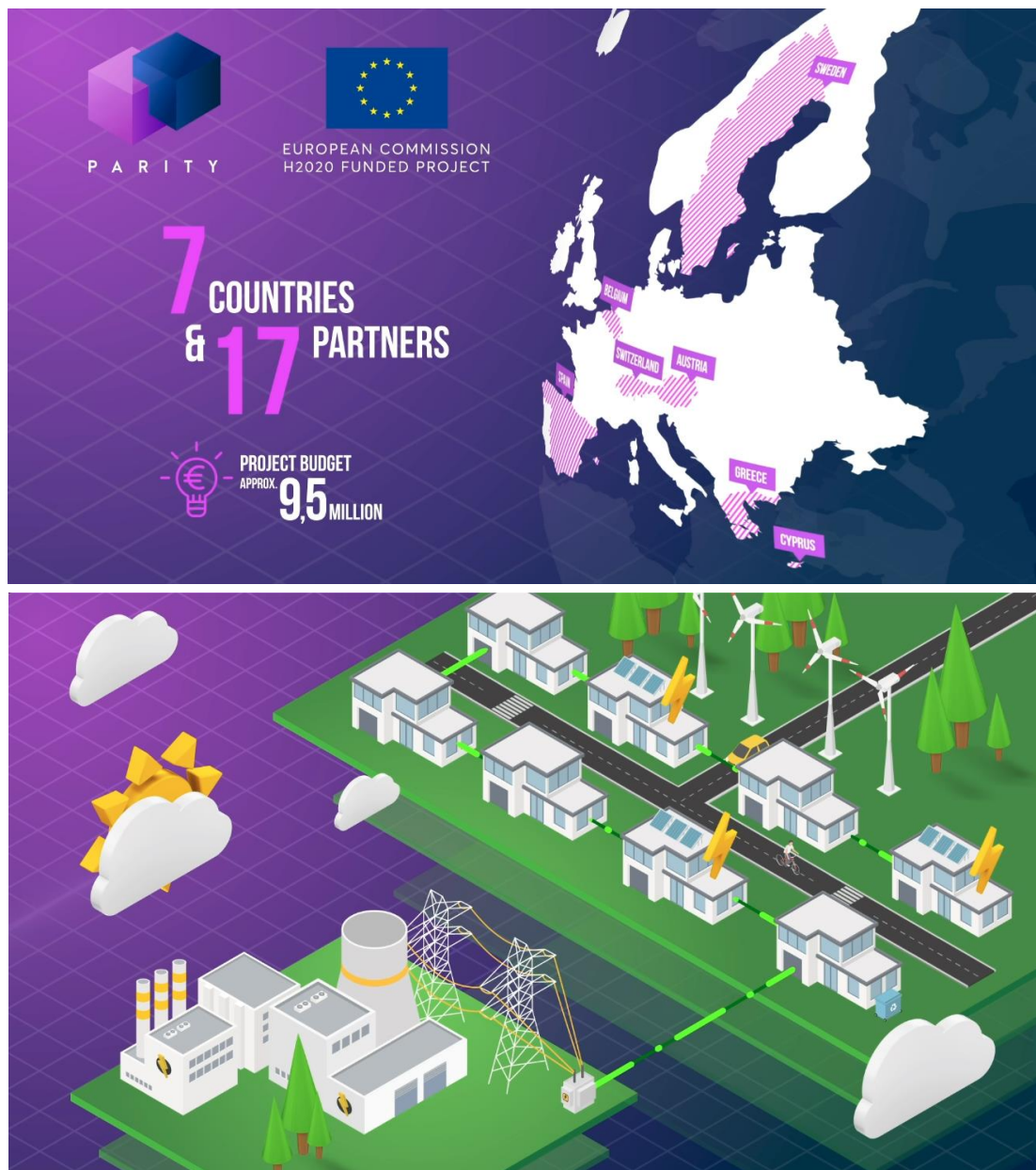


Figure 33. Screenshots of PARITY 1st Project Video.

4.3.8 Living lab activities

The first Living Lab workshops were anticipated to be executed by month 18 of the project according to the established D&C plan (D9.2, D9.6). Scope of this first round of workshops (as established in D9.1) is to identify the end user needs and give the opportunity to the technology providers to receive feedback from the end user for the tools to be developed within the PARITY framework. This procedure will initiate the live feedback loop between the end users and technology providers, a procedure that lies in the heart of the user driven innovation approach of the PARITY project.

Due to the COVID-19 health crisis, various issues hindered the finalization of the PARITY pilot sites as many initially considered locations and properties became unavailable or communication with the local pilot site participants was severely hindered. This consequently created issues in identifying and finalizing the PARITY user group as physical persons that would be participating in the PARITY pilot sites and the PARITY Living Lab workshops. Subsequently the first round of workshops has been rescheduled to be implemented by M28 of the project when the pilot sites will be finalized, and the PARITY user group clearly established.

Furthermore, due to the ongoing pandemic related restrictions, the exact nature of those workshops is still under investigation and will be decided according to the needs and capabilities of each pilot site separately, putting the health and safety of the participants always as the topmost priority. Subsequently, if execution of workshops with physical presence is still considered risky, the pilot site owners will switch to online events, using the same tools and maintaining the same scope for the workshops.

4.4 Month 25-36

This section provides an overview of the dissemination and communication activities that were implemented from month 25 and up to month 36 of the project.

4.4.1 Project Website

During this period, the project website was updated regularly with various additions. More specifically the following items were added:

- all public approved deliverables (13 in total) were uploaded on the website's relevant section ([Link](#))
- all the released newsletters (6 in total) were uploaded on the website's relevant section ([Link](#))
- updates regarding the pilot sites

Furthermore, likewise to the previous periods, various key web-site metrics were being monitored using Google Analytics Platform tools. Those metrics are reporting website activity, unique visitors, session duration, pages per session and bounce rate. The results contribute to the impact assessment of the actions and content shared through the website.

In the following Figure 34, the overview of the website analytics for the period in focus (M25-36) is available. In details, a total number of 1276 unique users have visited the PARITY website, with an average session duration of one minute and seventeen seconds. The total sessions in this period are 1548, with an average of 1.21 sessions per user. The total pageviews are 3328, with an average of 2.15 pageviews per session.

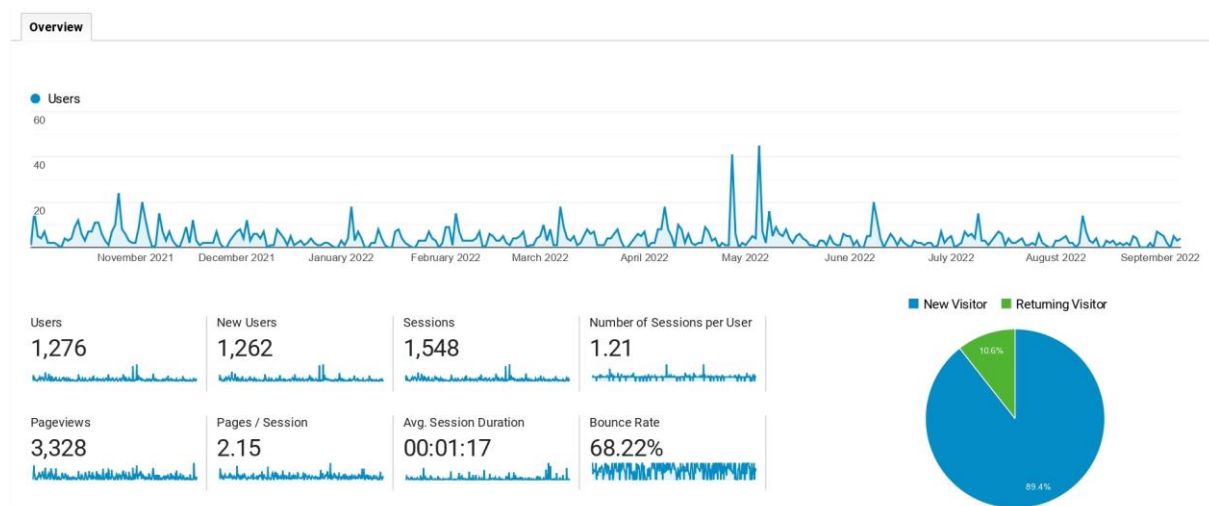


Figure 34. Google analytics results for PARITY website (M25-M36).

Analysing the results, we should acknowledge that a modest reduction in the number of users has been observed (-3.26% of users) in comparison with the previous reported period (M13-M24). However, the enrichment of the site with the public deliverables is expected to give an immense boost for the

forthcoming period. In addition to that, photos, and relevant material with regard to the demonstration activities is planned to be implemented, thus increasing the users of the Parity website.

Furthermore, looking more into the details of users per month (Figure 35), a steady decline can be observed from November 2021 up until February 2022, whereas the audience activity is increasing again between March 2022-May 2022.

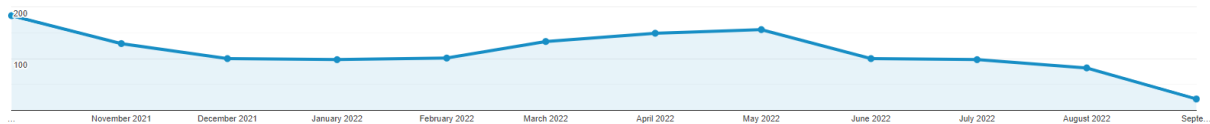


Figure 35. Google analytics results for visitors per month.

Finally, as can be seen in Figure 36, the geographic data indicates that the website attracts visitors from all over the world, particularly interest from the United States.

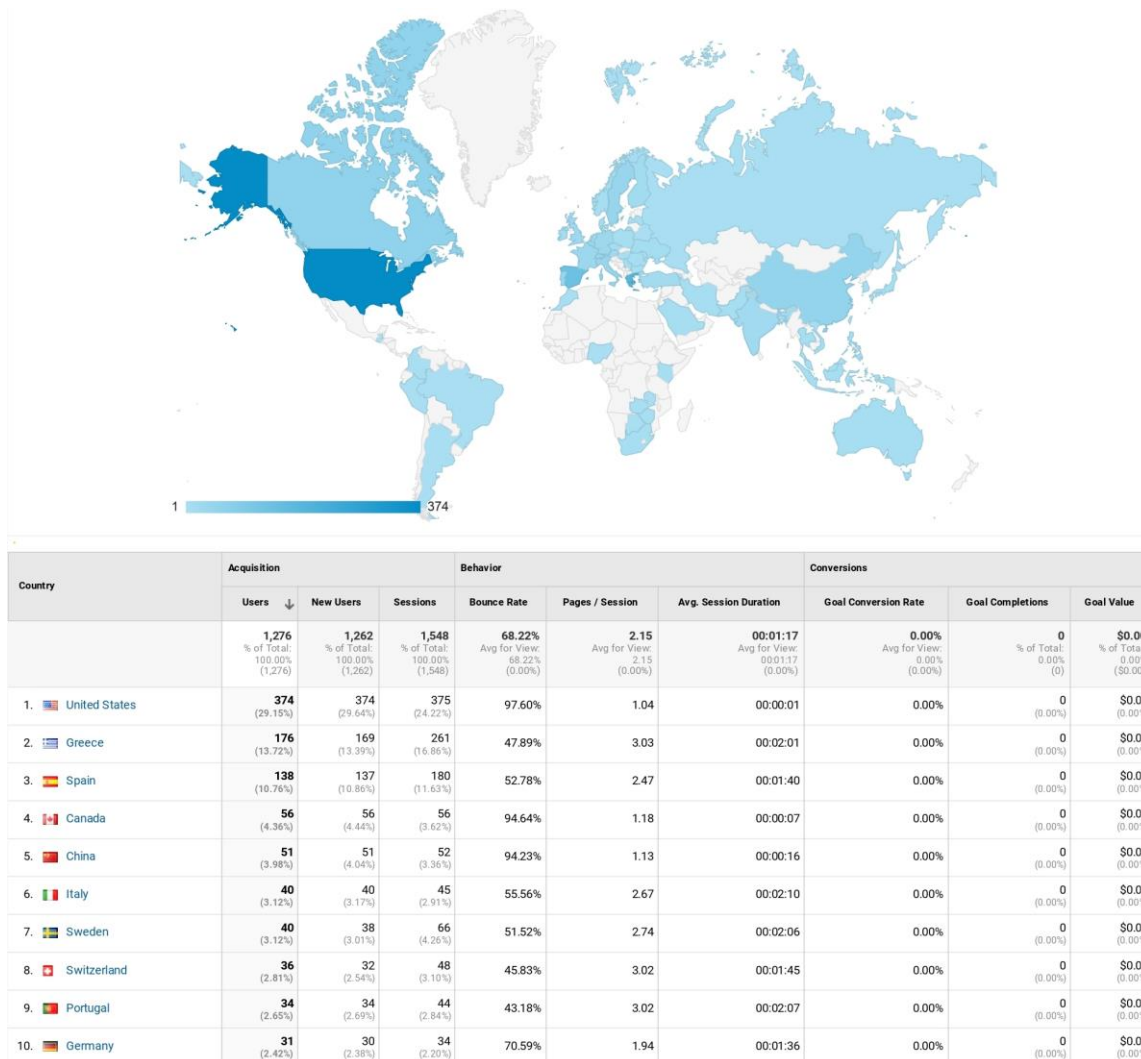


Figure 36. Google analytics geographic data for PARITY website.

4.4.2 Social Media

From month 25 and up to month 36 of the project, the Twitter account was being regularly updated, following where possible the “post of the week” timeline agreed with the partners. According to this procedure, one member of the consortium is responsible for providing contents for the post of the week. Similarly, content was also provided by partners for the Facebook account posts, while the LinkedIn account was also updated on a regular basis with a more extensive and descriptive post.

In total, the PARITY social media accounts have 253 followers which compared to the 110 followers reported a year ago marks a 130% increase. Regarding the activity there have been 133 posts in total.

4.4.3 Newsletters

The project newsletters foreseen to have been published during this period were one in month 30 of the project (5th Newsletter, March 2022) and one by the end of month 36 (6th Newsletter, September 2022). Both were launched on time, including the up-to-date progress of the project.

In addition, the 3rd and 4th newsletters of Parity which were launched with minor delays as mentioned in the previous version of this deliverable were also distributed among all newsletter subscribers.

All newsletters are publicly accessible and can be downloaded by accessing Parity’s website ([Link](#))





Figure 37. Screen shots of Newsletter 3, 4, 5 and 6.

4.4.4 Publications

Up to M36 the project consortium members succeeded to have 13 scientific publications (considering all the previous publications from M1). Details of the publications submitted and accepted within the period in review (M25-M36) may be seen in Table 15.

Table 15. PARITY Project Scientific Publications.

Type	Title	Authors	Title of the Journal/Proc/Book	Is peer reviewed	Is Open Access	DOI	Repository Link
Article in Journal	Optimal D-STATCOM Placement Tool for Low Voltage Grids	Gregorio Fernandez; Alejandro Pizano Martínez; Noemi Galan; Javier Ballestín-Fuertes; Jesús Muñoz-Cruzado-Alba; Pablo Eguia Lopez; Simon Stukelj; Eleni Daridou; Alessio Rezzonico; Dimosthenis Ioannidis	Energies 2021	Yes	Green	10.3390/en14144212	Link
Conference paper	Local Electricity and Flexibility Markets: SWOT Analysis and Recommendations	Evgenia Kapassa; Marios Touloupou; Marinos Themistocleous	6th SpliTech, 08-11 September 2021	Yes	Green	10.23919/splitech52315.2021.9566362	Link
Article in Journal	Blockchain Application in Internet of Vehicles: Challenges, Contributions and Current Limitations	Kapassa, E.; Themistocleous, M.; Christodoulou, K.; Iosif, E.	Future Internet 2021	Yes	Green	https://doi.org/10.3390/fi13120313	Link
Article in Journal	Deployment and analysis of a blockchain-based local energy market	D. Strepparava, L. Nespoli, E. Kapassa, M. Touloupou, L. Katelaris, V. Medici,	Energy Reports, Vol 8	YES	Green	10.1016/j.egy.2021.11.283	Link
Article in Journal	Blockchain application in P2P energy markets: social and legal aspects	Cruz E. Borges, Evgenia Kapassa, Marios Touloupou, Jon Legarda Macón, Diego Casado-Mansilla	Connection Science	Yes	Green	10.1080/09540091.2022.2047157	Link

Book/ Monograph	Exploiting the Flexibility Value of Virtual Power Plants through Market Participation in Smart Energy Communities	Georgios Skaltsis, Stylianos Zikos, Elpiniki Makri, Christos Timplalexis, Dimosthenis Ioannidis, Dimitrios Tzovaras	Virtual Power Plant Solution for Future Smart Energy Communities	Yes	Green	10.1201/97810 03257202	Link
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4.4.5 Thematic events and fora

Finally, up to this period the consortium members have participated in in total in 28 events (considering the total number of events from M1 to M36). The events that took place within the period in review (M25-M36) may be seen in Table 16 .

Table 16. Events participation M25-M36.

Event name	Dates	Place	Type	Partner	Short description	Audience
Web Summit 2021 , Link	01-04/11/2021	Hybrid event (attended in person), Lisbon, Portugal	Conference	HYPERTECH, QUE	Startup booth (beta) - discussing the application of IoT and Blockchain within the project and the benefits they bring to end-users	Scientific, technology experts, technology start-ups
E-REDES "Real progress along the road to Flexibility" , Link	10/05/2022	Hybrid event, Porto, Portugal	Conference	HYPERTECH, CERTH	Presentation of project and panel discussion	Scientific, energy industry
EBR-dagarna Link	17-20/05/2022	Eskilstuna, Sweden	Conference and expo	CWATT	Presentation of the project	Energy industry
EUSWE 2021 - Bringing citizens on board the energy transition , Link , Link	13/10/2021	Online	Series of seminars	DEUSTO	Presentation on citizen engagement strategies as implemented by Parity	Scientific / Policymaking
Workshop on "Blockchain Applications in the Energy Sector" , Link	29/06/2022	Online workshop	Workshop	CERTH	"Expert panel discussions focusing on the following topics:	Online workshop
Splitech 2022	5-8/07/2022	Split and Bol, Croatia (Hybrid Event)	Conference	DEUSTO	https://2022.splitech.org/	Scientific, technology experts, technology start-ups

4.4.6 Project Reference Presentation

An updated version of the PARITY project reference presentation was created. This presentation focuses on the technologies developed within the project as well as the finalised demos in which these technologies are being deployed.



Figure 38. Screenshot of the updated version of the reference presentation.

4.4.7 Living lab activities

As already mentioned in the previous sections describing the living lab activities, the relevant workshops were rescheduled due to the COVID-19 health crisis. It is important to mention that two rounds of workshops are foreseen to take place in each pilot site (total of 8) during the entire project time (Figure 39); the first by M28 targeting to investigate the necessities of the end-users and to receive feedback from the end users for the under-development tools of Parity and the second by M42 to validate the Parity technologies according to the end user needs and to support the dissemination and exploitation of the results.

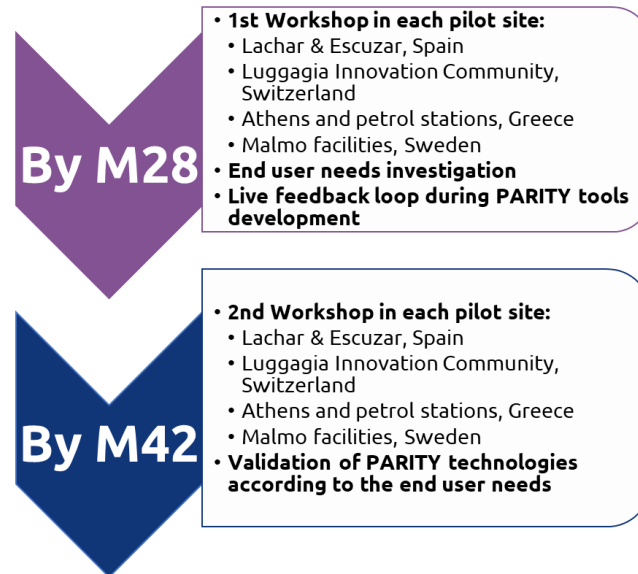


Figure 39. Planning of workshops.

In M22 a detailed mapping of the pilot stakeholders to be engaged was performed, gathering information regarding household composition, employment type, digital skills etc. and thus, ensuring diversity. An overview of the stakeholders per demonstration site is illustrated in Figure 40.

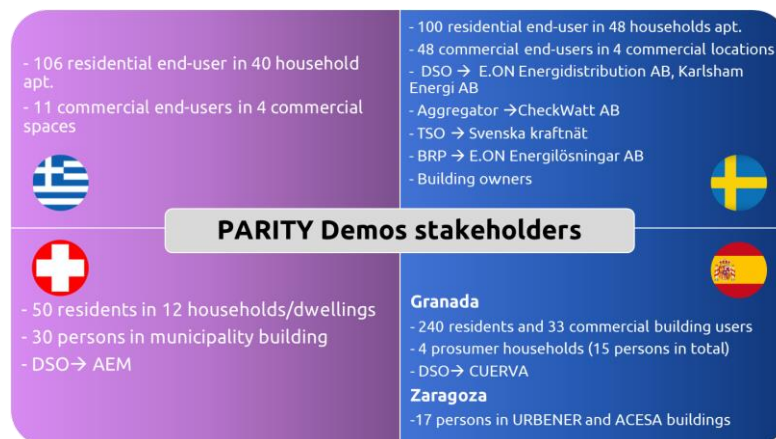


Figure 40. Overview of stakeholders in pilot sites.

The following subsections present the details of the 1st round of living labs for the pilot sites in Sweden and Greece. The workshops and Spain and Switzerland are to be implemented when the end-users have sufficiently used the first versions of the end-user apps in order to be capable of providing constructive and meaningful feedback.

4.4.7.1 Swedish pilot site

E.ON, is the pilot responsible partner for Sweden. In May 2022, a workshop was organised with all potential end-users to introduce the Parity project and promote its goals and benefits. The agenda of the workshops was as follows:

- ❖ Parity project presentation [in English]
- ❖ Presentation of Pilot site

- What is a Smart Storage Solution?
- How does it work?
- What features and functions will we test in the pilot?
- How does a VPP work? [Frequency regulations trading at the ancillary service market]
- Physical demonstration of the battery solution
- What happens after the Parity project?

❖ Questions & Answers



Figure 41. On-site living lab workshop in the Swedish pilot site.

4.4.7.2 BFS facilities, Greece

In the case of the Greek pilot site, BFS and NRG (sister company of BFS) presented on June 9th, 2022 in a virtual meeting and in native language the Parity equipment to their clientele, as well as the functionalities and the expected outcomes from Parity demonstration activities. For the purposes of the living lab, Greek subtitles were added to the project’s video, which was used as introduction for the meeting. During the presentation emphasis was given to the characteristics of the smart equipment and the possible interventions caused by the equipment’s installation (i.e., drilling for smart meters). The involved stakeholders were also presented the mock-up of the BaaB App and its functionalities, so that

they are well-aware when they are asked to use it. Further details on the advantages of Parity solution were given, so that the engagement rate is maintained in a high level. Few questions were raised by the participants about the expected release date of the BaaB App and other technical issues (i.e., Raspberry pi affected by the lack of 3G signal).

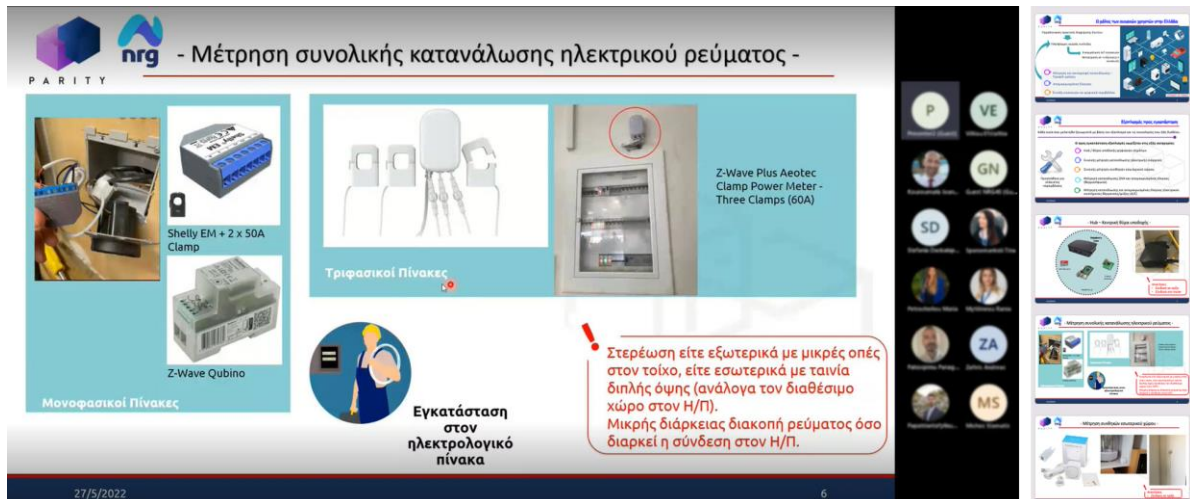


Figure 42. Virtual living lab workshop in the Greek pilot site.

5. MONITORING, EVALUATION, AND IMPACT ASSESSMENT

During the implementation of dissemination activities in the framework of the project, it is essential to consider how the key messages are delivered to the specified target groups and evaluate their effect. Dissemination activities are not a one-time activity, so there should be a long-term relationship with the specified focus groups, providing the ability to have a constant feedback and continuous monitoring. The Key Performance Indicators (KPI), will help the PARITY project consortium, define, and measure the progress towards predetermined goals for dissemination activities.

5.1 Methodology and Key Performance Indicators

As already presented in previous sections of this deliverable, Table 5 includes an indicative set of expected results for dissemination activities and an expected set of performance metrics. Taking those targets in account, Table 17 below presents the quantified accumulative targets for the project dissemination and communication activities, per period of six months. Those metrics will be gradually updated, every six months, to provide a constant measure of success for all dissemination and communication activities. For this version, Table 17 has been updated with the changes described in paragraph 0 “Changes from the initial plan”.

Table 17. KPIs of dissemination and communication activities.

Activity	M6	M12	M18	M24	M30	M36	M42
Leaflets / brochures	Initial version				Updated version		500 copies distributed
Posters	Initial version				Updated version		
Reference ppt presentation		Initial version				Updated version	
Newsletters	1st	2nd	3rd	4th	5th	6th	7th
Publications		1 public/n		4 public/ns		8 public/ns	10 public/ns
Videos			Initial version				Updated version
Website	Launched Monthly update	300 Visitors, Monthly update	Monthly update	1.000 Visitors, Monthly update	Monthly update	3.000 Visitors, Monthly update	5.000 Visitors, Monthly update



Twitter	/	Weekly update	Weekly update	Weekly update	Weekly update	Weekly update	Weekly update	Weekly update
Facebook		Weekly update	Weekly update	Weekly update	Weekly update	Weekly update	Weekly update	Weekly update
LinkedIn		Monthly update	Monthly update	Monthly update	Monthly update	Monthly update	Monthly update	Monthly update
Workshops / training				4 living labs	2 BRIDGE			8 living lab, 4 BRIDGE
External events			At least 6		At least 15		At least 25	At least 30

5.2 Current status

Table 18 compares the dissemination and communication accumulative quantified targets of the project with the current performance and will be updated with the new versions of this report.







Table 18. Dissemination and communication targets Vs current status.

Activity	Accumulative target for month 36	Status in month 36
Leaflets / brochures	1 st leaflet issued	The first leaflet issued in February 2020. Updated version is under development.
Posters/ Roll-ups	1 st poster/roll-up issued	The first roll-up issued in February 2020. Updated version is under development.
Reference presentation ppt	Initial version Updated version	The 1 st presentation was finalized by the end of September 2020. The updated version was finalized by the end of September 2022.
Newsletters	6 newsletters issued	The delayed 3 rd and 4 th project Newsletters were launched, as well as the two following ones.
Publications	8 publications accepted	13 published papers
Videos	Initial version produced	First version of the project video produced. Content is under development for the updated version due M42.
Website	Launched Monthly updated 3000 visitors	Project website launched in January 2020 and updated regularly. Up to mid-September 2021 it had 2944 unique visitors.
Twitter / Facebook	Signed up Weekly updated	Accounts created in January 2020 Updated with an average interval of at least one post per for Twitter, while for Facebook the update interval was lower.

LinkedIn	Signed up Monthly updated	Account created in January 2020 and updated regularly
Workshops training	/ 4 living lab 2 BRIDGE	Living lab activities have been implemented in 2 of the pilots. Participation to BRIDGE GA and contribution to 2 working groups.
External events	Participation in at least 25 external events	Consortium participated to 28 external events

5.3 Evaluation

During this period, the main dissemination and communication targets have been accomplished. In detail:

-  The reference project presentation has been updated to include the up-to-date accomplishments and to present the Parity tools. The presentation will also be uploaded on the website to be accessible for the wide audience.
-  By M36 of the project, the established KPI of at least eight publications has been exceeded as thirteen scientific publications have already been submitted and accepted.
-  Regarding the external events, project partners participated in 28 events during the first 36 months of the project, exceeding the set KPI by 12%. Participation in future events is monitored by the dissemination and communication manager through the specific tab of the online dissemination monitoring tool. No risks are foreseen for this metric.
-  The social media accounts have been constantly updated and more updates are expected, further promoting the public content uploaded on the website.
-  The project website has been continuously updated as predicted in the plan, yet a relatively small decrease has been observed in its traffic. It is estimated that the decrease will be reversed given the enrichment of the website with the presentation of Parity technologies which are now in a mature level. Additionally, the upload of all public approved deliverables is expected to give a further boost to the website, while regular redirections to the website will be performed through the social media accounts.
-  Regarding the release of the foreseen newsletters, the previously delayed 3rd newsletter was sent to all recipients, likewise to the following newsletter editions (4th, 5th and 6th).

6. CONCLUSIONS

The main aim of this report was to present and evaluate the dissemination and communication actions implemented up to month 36 of the project. To this end, this deliverable achieved its targets by presenting in detail all the dissemination and communication actions that took place during this period and assessing them towards the specified KPIs and the predicted impact.

Up to date work is ongoing regarding the updated versions of Parity leaflet and poster, as well as for the content of the updated version of the video. Further activities on reaching the specified dissemination and communication targets will continue being implemented during this third and last 'Strategic' phase of Parity.

Finally, this report will be updated in its next and final version as predicted in the DoA, to follow the implementation plan of the dissemination and communication activities and evaluate the status towards the anticipated KPIs. The next updated version will be submitted in deliverable D9.9, by the end of month 42 and following the conclusion of the project.



7. REFERENCES

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- [2]. EC Directorate-General for Research and Innovation 2017. Communication and Dissemination in Horizon 2020. Energy Infoday. Brussels: EC
- [3]. The PARITY EU research project Description of Action, GA Number 864319