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National Prosumers Platforms

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Building Up Next-Generation Smart Energy Services Offer and Market Up-take Valorising Energy Efficiency and Flexibility at Demand-Side.

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Content

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1. Summary

In this document, a summary of the study that has been carried out to identify the most relevant market actors in the energy sector is presented. The aim has been to engage these market actors in setting up national prosumers' platform that would have an active role in developing the project. The following market were targeted: ESPC[1]-ESE, Energy Cooperatives, DSOs, Energy Suppliers, Aggregators, Energy Associations, and other prosumers' platforms.

The type of deliverable D4.1 is "OTHER". This note describes the process of identification and assessment of stakeholders, as well as the resulting list of market players and stakeholders would be the most suitable for being linked to implementing the project. The number of stakeholders may be subject to upward changes, with the aim of incorporating new potential partners into the decision-making process and obtaining feedback. The current list available as of 30 June 2023 and is considered as a solid basis for developing contacts and cooperation within the national platforms.

The process of identifying interested parties started with the search by each project partner of market actors with whom they had contacts and/or cooperation and then internal lists were compiled by each of the project partners of potential collaborators at national level.

In addition to the identification and assessment of potential collaborators, the concept of prosumer and the different types of prosumers that currently exist have been detailed, as it is a growing concept that encompasses production and consumption by the same customer.

Three different platforms have also been studied to carry out the analysis and contact with customers to obtain feedback from the residential customers who are going to be the target of the surveys in the different countries covered by the consortium.

2. Introduction

Stakeholder mapping and identification of their possible connection to the work packages is the first step in creating a dialogue with stakeholders. Getting stakeholders involved is a vital action for the management and success of prosumers' platforms to obtain the opinion of the demand side and the supply side. The very objective of the initiative is to get the participation of different actors of the electricity market such as ESPC, aggregators, DSOs, energy suppliers, energy cooperatives, and identify the typologies of final customers. Operators are required to identify themselves within the European electricity market and to focus on electrification as a sign of the energy transition towards meeting the zero C02 emission targets.

[1] European Commission defines more than one kind energy service companies (https://e3p.jrc.ec.europa.eu/node/190). ***An ESCO*** is a company that offers energy services which may include implementing energy-efficiency projects using energy performance contracting (EnPC) and in many cases on a turn-key basis. Another category of companies that offer energy services to final energy users, including the supply and installation of energy-efficient equipment, the supply of energy, and/or building refurbishment, maintenance and operation, facility management, and the supply of energy (including heat), are ***Energy Service Provider Companies (ESPCs)***. They may be consultants specialised in efficiency improvements, equipment manufacturers or utilities. As **the project goes beyond these narrowly defined type** of service companies, we use throughout the project the term **Energy Efficiency Service providers (EES providers)** and the term ESCO is only used if we refer specifically to a service company using EnPC in the meaning of the above-mentioned definition of the European Commission.

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This deliverable describes the process followed for the identification of relevant stakeholders. The list of collaborators is a living tool that will change throughout the project, as new stakeholders and/or market actors will be added.

The main steps that have been taken to develop a process of participation of the parties considered interesting are divided as follows:

- Identification of the parties required by the deliverable in each country covered by the consortium.
- Prioritization of the identified parties.

This deliverable is composed of the following main sections: Introduction (1), and objectives (2), Stakeholder list development methodology (3), results of the process as a summary of stakeholders (4) and conclusion and next steps (5).

3. Methodology

3.1 Selection of market players

The partners of the project "Building Up Next-Generation Smart Energy Services Offer and Market Up-take Valorising Energy Efficiency and Flexibility at Demand-Side", known as "*BungEES*", have extensive experience in the energy efficiency business, in the energy sector and in other relevant sectors such as the legal affairs.

Therefore, depending on the experience and scope of activities of the partners, the consortium produced a list of stakeholders with key resources through their:

- Association members;
- Energy companies active on the market;
- Regular contacts with interested parties;
- Existing customers.

The partners then carried out research targeting the market players detailed in the above-mentioned list. It was based on a search through their network of contacts and lists of relevant companies in each country that contribute to the work of the national platforms. A total of 1,877 organizations have been identified divided into the following groups.

- 123 ESPC-ESE;
- 332 Energy Cooperatives;
- 721 DSOs;
- 850 Energy Suppliers;
- 8 Aggregators;
- 95 Energy Association;
- 37 additional stakeholders of the Slovak prosumers' platform (Slovakia is in the inception stage in implementing the new market design and therefore wider selection of stakeholders is needed).

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3.2 Description of the market players

Several categories of information are collected for each of the parties. First, the contact information that includes the primary information of each entity such as the business name, the link to its website, the contact person and is assigned to the relevant group. These data were collected by the project partners following the current GDPR regulations. 8 groups of stakeholders were specified:

- **ESPC-ESE** are distributed at national level in each member country.
- **Energy Cooperatives** are distributed nationally in each member country.
- **DSOs**, it is specified in each country.
- **Energy Suppliers**,
- **Aggregators**, market operators who could aggregate consumption.
- **Energy Association**, at national level in each member country.
- **Customer distribution**, distribution by customer type if it has electricity or gas supply. In addition to distribution if they are customers of the residential sector, public bodies, SMEs.

3.3 Prioritization

The parties studied have been assessed based on their influence or interest in the energy sector and energy efficiency. On these criteria the capacity for collaboration and the importance of each contact have been determined.

Within these categories they have been classified into three levels "low - medium - high". This global priority evaluation is in the evaluations that are made or considered power and interest. This helps prioritize possible collaborations in relation to getting feedback from the platform. This prioritization will help focus more on these more influential and collaborative entities.

Interest

The interest is related to the capacity of the different actors and the intentions they may have in participating in this project. This seeks to identify stakeholders who are qualified or willing to cooperate with the consortium.

Focusing on these stakeholders within a particular category will help to use resources more effectively.

- **Low:** Does not know the project but shows interest in learning about it.
- **Medium:** Project support, but with limited capacity.
- **High:** Intention to participate closely and have the necessary resources to have a participation.

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Power

Power is associated with the ability of potential partners to overcome obstacles in different projects, as well as in matters of policy, financing.

In setting priorities, different outcomes are achieved in countries due to specific conditions. The importance assessment can be based on different criteria depending on each category.

High – stakeholders must meet one of the following conditions:

- Influence the regulatory environment.
- Control financial flows.

These powerful parties can be influential companies, distributors, marketers with a high degree of influence and Energy Associations.

Medium – Interested parties must fulfil the following conditions:

- Do not influence the regulatory environment or control financial flows.
- Heavily involved in US projects and dependent on high power decisions.

These interested parties can be aggregators, ESPC-ESE, small marketers without influence in government.

Low – Stakeholders who form the activity of the energy market such as final customers, which have no influence on the regulatory establishment or control of financial flows.
Low-power stakeholders can be as previously stipulated by residential customers, Homeowners Communities customers and SME customers.

4. Prosumer

4.1 What is a prosumer?

In decentralized energy systems, there is a new actor on the market – the prosumer. The project will specifically focus on customers (both business and individuals) who have the capacity not only to consume but also to produce, hence the term prosumer. For example, prosumers are owners of distributed renewable energy sources (DRES) – business entities, individuals or groups of individuals that consume and produce DRES-based energy or offer energy services to the system, such as flexibility or storage.

These actors differ from the utilities, because the provision of energy and/or energy services is not the main activity of prosumers.

The DRES prosumer is defined as entities - individuals, collectives, households, small and medium-sized enterprises (SMEs), schools, hospitals, etc. which participate in the energy system in different ways, for example, by consuming and producing or only producing electricity or heat from distributed renewable energy sources by offering energy services such as demand flexibility or storage. This definition also includes so-called virtual prosumers.

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Currently in Europe, prosumers are emerging on the energy markets and are playing important role in the electrification of the energy sector. A concept of prosumer may take several forms and can be characterized by several attributes such as the entity, technology, or the business model.

In Europe right now there are many homes that combine self-consumption facilities, with charging systems for electric vehicles and with energy management systems as well as with heat pumps.

Thanks to the new developments in technology and advance in the digitalisation of the sector, energy service providers and platforms are paving the way for prosumers to participate in energy markets. These new market players invest and develop new distributed energy resources.

Industrial prosumers will also participate in the energy transition. They are investing in DER and optimizing their flexibility, as well as boosting PPAs and acquiring guarantees of origin.

4.2 Different forms of prosumer

For the project, the partners will consider the following four forms of a prosumer:

- **Individual households**

In such situations you can have for example a home with photovoltaic (PV) panels that can be found combined with a battery to increase self-consumption or PV panels can be used together with a heat pump used for space heating and/or cooling.

A housing with battery offers network balancing services to operators or offers flexibility to demand.

There may also be a type of a prosumer with photovoltaic panels and an electric vehicle. Electricity from the electrical system would be used to charge the battery of the electric vehicle that can also be offered to balance the system.

A household may also participate in a network of energy services by using a battery for backup supply.

- **Collective prosumers in a building**

It may well be a community of owners who own a photovoltaic plant on the roof, these owners constitute a community and contribute to the investment, depending on the regulations in force, the energy supplied by the plant can be consumed directly. Batteries, heat pumps and electric vehicles can benefit from this plant for energy consumption.

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- **SMEs and public institutions**

As is the case with households, an SME or a public entity that has a self-consumption installation on its roof producing electricity that can be turned to the grid or used by the prosumer.
An example of this functionality is that a school consumes the energy that has been placed on the roof of a public building.

- **Energy communities and cooperatives**

These communities constitute the largest and most diverse group of prosumers. In this group there are a great variety of forms such as energy neighbourhoods up to national communities. The two main models of energy communities are:

- Energy community with members paying contributions to the entity.
- Energy community with shareholders who own and control the entity.

4.3 Potential of prosumers in the EU

According to various studies it is known that the potential of prosumers is enormous. It was estimated that almost a quarter of the EU's electricity consumption (680 TWh) could be generated only from rooftop photovoltaic systems (Boedis et al., 2019).

In the following figure you can see the technical potential of electricity production of prosumers compared to the total electricity demand of EU member states, these prosumers can supply between 30-70%.

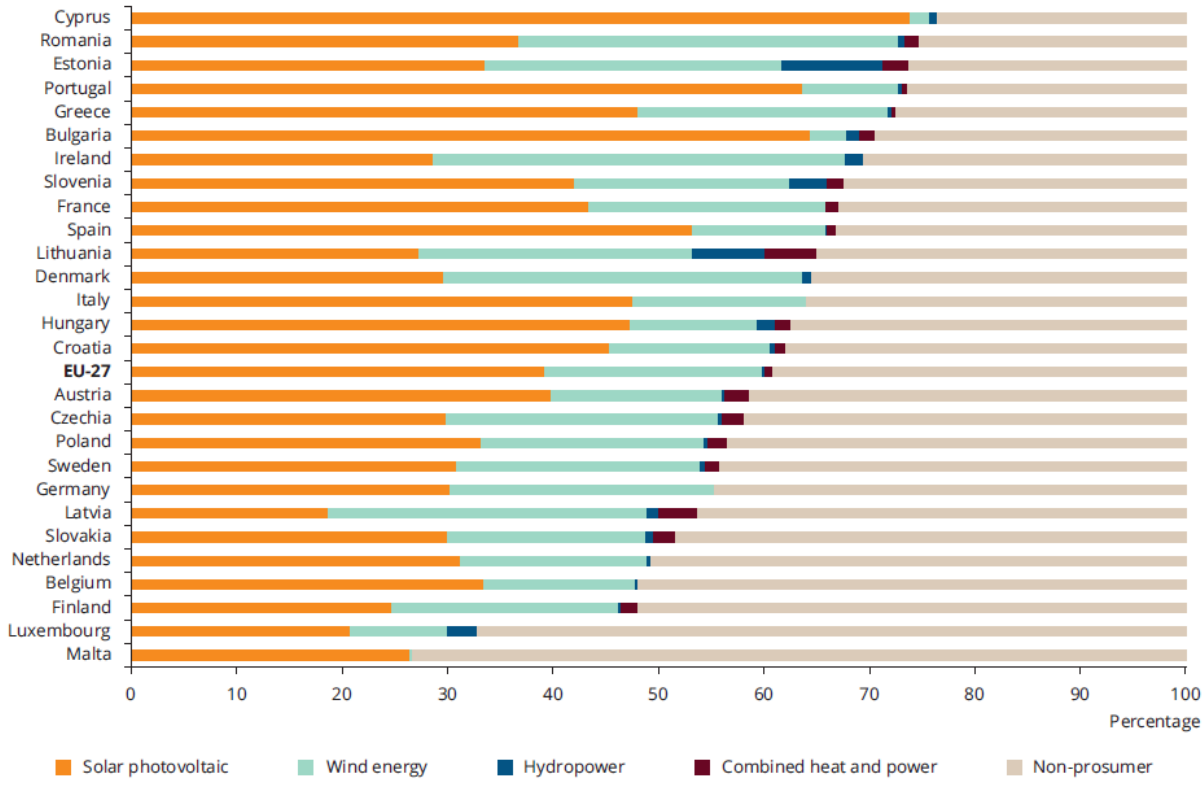

Figure 1 Electricity production potential. Source: European Environment Agency

The technical potential for electricity production and the choice of technology depends on several factors. The following factors are among the most important:

- **The climate:** The photovoltaic potential is higher in the countries of southern Europe, because they have a higher number of hours of sunshine per year.
- **Urbanization:** In densely populated regions, they have less space available for RES in the ground, such as photovoltaic plants, wind turbines, than in rural areas with more land for this type of activity.
- **Geological properties:** Geology affects the potential of RES production by prosumers. It is mainly applied in hydropower which is only possible in specific locations.
- **Available area:** The surface available on roofs restricts the potential capacity of photovoltaic panels on roofs and likewise the potential of wind turbines and solar gardens is restricted, depending on the terrain available.

These figures would only be a study and it would be necessary to verify whether it is possible to have a technical validation in the ideal circumstances.

4.4 Prosumers engagement plan

In the project various actions to engage prosumers (including, in this generic term, all parties somehow affected by the outcomes of the project) and to foster their contribution to the project outcomes will be implemented:

- *Step 1: Development of survey questionnaire:*

A questionnaire has been developed for Plenitude end customers to find out their knowledge of energy services, their interest in these services, the concept of prosumer,

their consumption habits, whether they have any knowledge of the term flexibility and to explain the concept of service to find out their opinion. Additional 3 surveys were developed to target different operators, ESPCs, energy cooperative, energy suppliers and other stakeholders. These surveys are connected with tasks in work package 2 and 3.

- *Step 2: Customization of the questionnaire to the different stakeholder groups:*

The questionnaire for Plenitude focuses on customers in the residential sector and can also be applied to customers in the business sector. Voltalis will consider similar survey with their business and residential customers. Other 3 surveys mentioned above were customized based on the targeted groups among operators, ESPCs, energy cooperative, energy suppliers and other stakeholders .

- *Step 3: Preparation and implementation of surveys:*

The surveys will be implemented at national level in close cooperation of all partners.

- *Step 4: Collection of survey insights and summary:*

The objective is to survey as many customers/prosumers, operators, ESPCs, energy cooperative, energy suppliers and other stakeholders as possible. The aim of the survey with end customers/prosumers is to find out if they are interested in smart energy services as well as in the concept of the one-stop-shop services that is being developed in the BungEES project.

5 Stakeholder summary

This point summarizes all the stakeholders that have been considered in the production of the document dated May 2023. First, the general statistics related by type of country and by organization will be presented.

5.1 In general

At the time of finalisation of this text a total of 1,877 organisations have been identified, which encompasses each of the studied parties that have been defined as (ESPC-ESE, Energy Cooperatives, DSOs, Energy Suppliers, Aggregators, Energy Association, Prosumers Platform). During the implementation of this project, if other stakeholders are identified, they will be added to those required by the project if necessary. In Spain, all Energy Suppliers have been added to be able to present the operation.

In terms of distribution, the following table shows the types of market actors identified by country of origin of the partner represented in the consortium, thus reflecting the importance of some countries compared to others in the possibility of developing the idea and the prosumer platform.

Type of market actor	Spain	Portugal	France	Germany	Slovakia	Czechia	Italy	Total
ESPCs[1]	29	24	4	0	9	46	0	112

Type of market actor	Spain	Portugal	France	Germany	Slovakia	Czechia	Italy	Total
Energy Cooperatives	11	10	4	7	0	0	0	32
DSOs	5	1	2	707	1	3	3	721
Energy Suppliers	737	51	12	11	13	22	15	861
Aggregators	5	1	0	1	1	1	0	8
Energy Associations	31	5	6	7	3	4	39	95
Additional SK actors*	-	-	-	-	37	-	-	37
TOTAL	**818**	**92**	**28**	**733**	**64**	**76**	**66**	**1,877**

*As the new market design for electricity is in the phase of implementing legislation, launching data centre of TSO, there is a need for wider cooperation under the project to remove potential barriers

Once a first analysis of the distribution of the different actors has been made based on the contribution of the partners in their respective countries, we can conclude that there are quite a few organizations susceptible to obtain information because of this type of project, as it has a great influence on the energy sector.

As for the level of priority, it will be used for the subsequent implementation of a communication plan for the project. The objective of this mapping is to obtain contacts to be able to participate in the events. Therefore, we will focus on the closest contacts we have to give them the highest priority level, on the other hand, we will also evaluate the actors that have a medium importance and finally, the least important ones will be those with whom we have no relationship. These values may be modified over time because there may be more interest in some companies or less interest on the part of others.

The table below shows the table by interest according to the importance in each of the countries of the consortium.

Global Importance	Spain	Portugal	France	Germany	Slovakia	Czech Republic	Italy
High importance	6	2	0	26	46	51	64
Medium importance	47	31	15	9	7	22	2
Low importance	765	59	13	698	11	3	0
Total	**818**	**92**	**28**	**733**	**64**	**76**	**66**

This shows the level of importance of the partners according to the search that has been carried out by the partners, thus showing where the most important potential partners are to be found.

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6 Conclusions

An analysis of the different actors in the market has been carried out for each of the collaborators of the BungEES project. Based on this study of the actors, three different tools were tested to facilitate communication within prosumer platform, in which the client communicates with the collaborator through surveys and comments.

This will provide more feedback from residential customers in each of the countries and we will study their knowledge of what a prosumer customer is and what they understand by flexibility and their knowledge of new electrification.

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