



D9.2 SYNERGY Living Lab Activities Plan and Evaluation Report (v2)





Digitising and transforming European industry and services: digital innovation hubs and platforms

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Abbreviations and Acronyms

Acronym	Description
TL	Task Leader
WP	Work Package
WPL	Work Package Leader
LL	Living Labs
PC	Project Coordinator
TC	Technical Coordinator
DS	Demo Site
DP	Demo Partners
AI	Artificial Intelligence
UC	Use Case
DSO	Distribution System Operator
TSO	Transmission System Operator
BR	Business Requirements
DSM	Demand Side Management
VPP	Virtual Power Plant



Executive summary

Living Labs (LL) is a methodology that connects the business and technical developers to the end user during all phases of a research project. Incorporating end user feedback through co-creation is an integral part of the SYNERGY project, thus, the activities conducted through LLs are essential to successful exploitation of the SYNERGY solutions.

Following the initial work done through the LLs by GECO (reported in the first version of the LL evaluation report, D9.1) several activities were planned for the first year of the project. These plans covered almost all work packages (WP), with the most immediate of those occurring in WP2, WP4 and WP10. WP2 activities were concerned with gathering feedback on the SYNERGY use cases, user and business requirements, as well as the barriers (regulatory, socioeconomic, and organisational) that could hinder the realization of the SYNERGY concept in the demo countries of the project. WP4 activities focussed on requirements extraction and validation for big data analytics, data sharing and data discovery. For WP10, LL activities focused on validating the preliminary business models (data-driven) defined by the project.

LL activities were conducted with internal and external stakeholders in WP2 and WP4 with the goal of consolidating the use cases and requirements in SYNERGY. For the internal stakeholder interactions, requirements and use cases were discussed and refined by project partners using the Volere and Trello online tools, respectively. In addition, discussions and exchanging of ideas took place between internal partners via the technical meeting held in May 2020 and the plenary meeting in October 2020. To assess the barriers to innovation in WP2, data was collected and analysed through questionnaires and interviews with internal partners. With regards to the activities with the external stakeholders, interviews were conducted between August and October 2020 to gather feedback on existing use cases and requirements. With regards to WP10, a dedicated workshop was held by the work package leader (WPL) at the plenary meeting. The goal of this workshop was to gather feedback on the initial business models devised in SYNERGY in terms of relevance, importance, and interest from demo partners.

Following the summary of the activities in M1-M12, a comparison between the planned and completed engagements formed the basis of an evaluation of the LL process. This evaluation revealed that not all targets were hit, particularly with regards to the engagement of external stakeholders. This was primarily caused by two main issues, over focussing on a bottom-up approach for planning the engagements and a lack of availability of suitable external stakeholder contacts. Dependence on a bottom-up approach for planning engagement



activities meant that multiple plans and goals were established by WPLs without a holistic overview of the project goals. This created an issue with regards to aligning engagements between work packages. The second issue of a lack of external contacts meant that the target quantity of stakeholders to gather feedback from for the various elements in the design phase of the SYNERGY project was not fully met.

To rectify this, the LL approach will adjust its methodology to one that is characterised by an amalgamation of a bottom-up and top-down approach. LL leaders will continue to connect with WPLs to plan and organise activities from their perspective (bottom-up). In addition, a committee which consists of the project coordinator, technical coordinator and LL leader will be formed to generate a high-level overview (top-down). This integration of top-down and bottom-up approaches will allow for alignment between WPL perspectives with overall project goals. To address the issue of a lack of external stakeholders, a SYNERGY stakeholder community will be formed. This is essentially a database of contacts that will cover all key and supporting stakeholders that are relevant to developing the SYNERGY solutions.

The plan for the next 12 months is to continue to implement the five-stage process explained in D9.1 for conducting the LL activities. With regards to the new hybrid approach, a timeline has been created from the top-down perspective that is used as a framework for planning engagements within WPs and eventually demo site leaders when the piloting phase begins. To increase the collaborative effort from all project partners, a LL forum will begin in 2021. This is a monthly meeting where all partners involved in the LL process can discuss ideas, plans, and share concerns associated with stakeholder engagement. With regards to developing the SYNERGY stakeholder community, multiple strategies will be undertaken in 2021, including reaching out to current partners to provide contacts from their existing networks, increased visibility of the project on social media, identifying other similar EU projects to combine networking efforts and reaching out to external stakeholders that are engaged through the LL activities to create a snowball effect.



1 Objectives of the report

1.1 Purpose of the document

The primary purpose of this document is to provide an evaluation of the LL process and produce a plan of upcoming activities. The evaluation described here will be substantiated in the comparison between planned and completed activities in M1-M12 in the SYNERGY project. The evaluation will offer insights into the shortcomings of the LL methodology and provide a strategic plan for addressing these issues and improving the efficacy of the LL process. This document will also provide a preliminary plan of activities that are expected to occur for the remainder of the project.

1.2 Scope of the document

This document will outline the planned and completed activities from the first 12 months of the project. The planned activities span all work packages in the project, the completed activities cover the efforts in WP2, WP4 and WP10. The later chapters will provide a strategic plan for the LL activities for the next 12 months as well as provide a timeline of engagements for the entirety of the project and activities expected within each work package. These plans are subject to change depending on feedback gained through the LL process and project development.

1.3 Structure of the document

The document will first outline the goals of the LL activities as well as the expected roles and responsibilities of project partners involved in the LL process. This will be followed by a chapter providing the details of planned and completed engagements from the first 12 months of the project. This chapter will then be used as a basis to provide an evaluation of the LLs process, including identifying current issues and suggesting improvements. Subsequently, a strategy for improving the LL methodology will be provided. Finally, a list of expected activities will be outlined.



2 Introduction: Living Labs and SYNERGY

2.1 Goals of Living Lab activities in SYNERGY

SYNERGY aims to promote ‘end-to-end’ coordination between stakeholders in the electricity data value chain with regards to business integration and business model innovations under the hood of trustful and transparent data (intelligence) sharing. Therefore, a major factor of the design and piloting stages in the SYNERGY project is the inclusion of all stakeholders and end user’s perspectives for the development of the big data platform, the AI analytics marketplace and the energy apps that will be built on top of them.

The Living Lab (LL) component of SYNERGY is a major facilitator for achieving the integration of the end user perspective in the solutions offered by SYNERGY. LLs provide a methodology for co-creation through feedback loops between SYNERGY consortium partners and end users (both internal partners of the consortium and external experts/stakeholders).

To ensure the needs of all stakeholders are accounted for prior to market exploitation, LL activities should maximise the potential of information flow by gathering insight from internal (SYNERGY consortium partners) and external (non-consortium) stakeholders. Including internal stakeholders in the living lab process maximises the collective knowledge of internal partners (which is particularly poignant in a large project such as SYNERGY) and avoids the issue of project partners working in silo. External stakeholders can provide an unbiased, outside perspective that can be vital for improving and validating the solutions offered in SYNERGY.

The quantified goals associated with the LL activities in SYNERGY include engaging at least 12 electricity value chain stakeholders from within the consortium, and a further 40 external stakeholders identified through the LL activities. With regards to the engagement activities, it is predicted that at least 2 workshops will be undertaken at each pilot site to achieve the following:

- Promote knowledge, awareness, and acceptance amongst stakeholders.
- Provide an opportunity to generate end user feedback in the design phase of the project.
- Train users and facilitate the adoption of the SYNERGY concept and operation in the pilot sites.
- Include stakeholders in the evaluation of SYNERGY results.



As well as the foreseen targets explained above, it is important to consider the LL activities as an agile approach which will require new engagements and new targets as a result of continual feedback loops and the subsequent development of SYNERGY solutions.

2.2 Project partner responsibilities in Living Lab activities

To successfully carry out the engagements in the LL process, a clear understanding of the roles and responsibilities of each partner involved is required. Table 1 presents instructions on the roles and responsibilities for partners involved in the LL process. These instructions have been updated from those provided in D9.1 ‘SYNERGY Living Lab Activities Plan and Evaluation Report v1’) to incorporate the new hybrid methodology (see chapter 4.1.2 for more details on the hybrid method).

Table 1. Roles and responsibilities associated with the LL methodology.

LL Leader	
Role	Implement LL methodology and provide guidance for the planning and execution of the engagement activities.
Responsibilities	<ul style="list-style-type: none"> • Creating and regularly updating the engagement strategy based on the on-going evolution of the community • Evaluation of LL and engagement activities • Providing guidance on selecting target audience • Providing guidance on communication material development • Supporting with workshop facilitations • Assist in building stakeholder community • Running LL forum • Communicate LL engagement needs between project leaders and WP/demo site leaders
Project and Technical Coordinator	
Role	Provide overview of project goals in relation to stakeholder engagement needs.
Responsibilities	<ul style="list-style-type: none"> • Provide an engagement timeline • Engage with external/ non-local stakeholders that are of importance to the overall project activities. • Representatives of the project in BRIDGE, BDVA and other initiatives (T9.4) • Organize relevant activities and facilitate such activities
Demo partners	
Role	The primary facilitator of the engagement initiatives at pilot sites and at local level.



Responsibilities	<ul style="list-style-type: none"> • Being the primary point of contact for stakeholders in local region. • Collaborate with GECO to determine appropriate engagement activities. • Organizing meetings and events (emails, invitations, arranging meeting space and materials, etc.) • Providing communication content • Facilitating workshops (or arranging for a facilitator) • Recruiting stakeholders
WP Leaders	
Role	Facilitating engagement initiatives at all stages. Information provider on SYNERGY WPs and tasks in relation to stakeholder engagement
Responsibilities	<ul style="list-style-type: none"> • Inform LL leader about tasks and targeted stakeholders • Being the primary point of contact for stakeholders • Collaborate with GECO to determine appropriate engagement activities within WP or tasks. • Organizing meetings and events (emails, invitations, arranging meeting space and materials, etc.) • Providing communication content • Facilitating workshops (or arranging for a facilitator) • Recruiting stakeholders



3 Planned & Completed Activities in M1-M12

This chapter will first outline the planned activities from the first 12 months of the project and then summarise the completed activities to date. This will then allow for an evaluation of the LL process.

3.1 First Year Plan for Living Lab Activities

Tables 2, 3 and 4 present the planned activities as part of the LL process in the first 12 months of the SYNERGY project for WP2, WP4 and WP10, respectively.



Table 2. Planned activities for WP2.

Activity to be performed and aim of stakeholder engagement		Electricity data value chain stakeholders	Related WPs	Timeline	Recommended Engagement
<p>Task 1. Validation of Use Cases (UCs) and Business Requirements (BRs) deriving from Synergy's Business Scenarios. Specifically, engaged</p>	<p>Business Area 1: Launching/enhancing flexibility and ancillary markets to enhance D&T Network resilience and Investment deferral (e.g. UC_5_3, UC_5_4*) *UC ID's according to Use cases reporting in Trello</p>	<p>Internal</p> <ul style="list-style-type: none"> DSO/Greek DSO/HEDNO/Internal: Targeted Profiles: Operations, planning, strategy and regulatory personnel TSO/Greek TSO/IPTO/Internal: Targeted Profiles: Operations, planning, strategy and regulatory personnel Electricity retailer / Greek / EPA / Internal: Targeted Profiles: Operations, Innovation and Business Development personnel 	<p>WP2 – Task 4, WP3-5, WP8 WP10</p>	<p>Internals: M5 Externals: end of M6 (</p>	<p>Face-to-face meeting/workshops with Greek internal stakeholders. Telco, remote workshop or phone interview with Internal Spanish and Austrian DSO & Aggregators External stakeholders through focus groups, interviews (in person</p>



<p>stakeholders to this activity could be presented with the description of the relevant UCs as well as preconditions and postconditions of their implementation in order to provide feedback on a) the availability of necessary data b) willingness and existence of legal framework to</p>		<ul style="list-style-type: none"> • DSO/Spanish DSO/ CUERVA (CUE)/ Targeted Profiles: Operations, planning, strategy and regulatory personnel • Aggregator/Spanish Aggregator/URBENER (URB) Targeted Profiles: Operations, Innovation and Business Development personnel • DSO/Austrian DSO/ ENERGIE GUSSING (GUS)/ Targeted Profiles: Operations, planning, strategy and regulatory personnel • Aggregator/Austrian Aggregator/ EUROPAISCHES ZENTRUM FUR ERNEUERBARE ENERGIE GUSSING GMBH (EEE)/ Targeted Profiles: Operations, Innovation and Business Development personnel <p><u>External</u></p> <ul style="list-style-type: none"> • Regulators - Policy Makers / European Organizations/ CEER 			<p>if possible) and surveys</p>
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<p>share/purchase those data c) feasibility of reported preconditions d) overall necessity and/or feasibility of the UCs and BRs and e) market appetite f) regulatory barriers depending on the type of stakeholder.</p>		<ul style="list-style-type: none"> • Professional Associations / European-level Energy Regulatory Agency / ACER • Professional Associations/TSO European association/ENTSO-E/ Targeted Profiles: Strategy and regulatory personnel • Professional Associations/DSO European association/E.DSO/ Targeted Profiles: Strategy and regulatory personnel • Professional Associations/DSO European association Eurelectric (DSO-Entity)/ Targeted Profiles: Strategy and regulatory personnel • Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) • Policy Makers / European Commission Instrument / H2020 Bridge – Business Models Working Group 			
	<p>Business Area 2: Distribution &</p>	<p>All the DSO, TSO internal (specific contact points) and external stakeholders of Business Area 1 with the</p>	<p>WP2 – Task 4,</p>	<p>Internals: M5</p>	



	<p>Transmission Networks performance assessment, sizing, monitoring of status & health, preventive maintenance scheduling. (e.g. UC_5_1, UC_5_2, UC_5_7, UC_5_8)</p>	<p>following targeted profiles: Operations, planning, strategy and regulatory personnel</p> <p>Plus</p> <p>External</p> <ul style="list-style-type: none"> • Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) • Policy Makers / European Commission Instrument / H2020 Bridge – Business Models Working Group 	<p>WP3-5, WP8, WP10</p>	<p>Externals: end of M6 (</p>	
	<p>Business Area 3: PV plants performance and health monitoring, O&M, optimized monetization approach (UC_5_5, UC_5_6, UC_5_9).</p>	<p>Internal</p> <ul style="list-style-type: none"> • RES Operators/Spanish/COBRA/Targeted Profiles: Operations, Asset Management • RES Operators/Spanish/CUERVA/Targeted Profiles: Operations, Asset Management • Energy Trading/Austrian/ENES: Targeted Profiles: Traders, PPA facilitators 	<p>WP2 – Task 4, WP3-5, WP8, WP10</p>	<p>Internals: M5</p> <p>Externals: end of M6</p>	



		<p><u>External</u></p> <ul style="list-style-type: none"> Professional Associations/Solar power European Association/ SolarPower Europe Professional Associations/Solar power International Association: International Solar Energy Society (ISES) Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) Policy Makers / European Commission Instrument / H2020 Bridge – Business Models Working Group 			
	<p><u>Business Area 4:</u> Retailers’ and Aggregators’ portfolio management and flexibility asset exploitation: advanced analytics, demand</p>	<p>All the Retailer and Aggregator internal stakeholders of Business Area 1 with the following targeted profiles: Operations, Innovation and Business Development personnel</p> <p><u>External</u></p>	<p>WP2 – Task 4, WP6, WP8, WP10</p>	<p>Internals: M5 Externals: end of M6</p>	



	<p>forecasting, DSM strategies, alternative (dynamic) billing strategies, VPP configuration, flexibility contracts and settlement (All WP6 related UCs)</p>	<ul style="list-style-type: none"> Professional Associations/ European Retailers Association/ European Energy Retailers Policy Makers / European Commission Instrument / H2020 Bridge – Business Models Working Group Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) 			
	<p><u>Business Area 5:</u> Building-level energy real-time monitoring and visualization, performance simulation and optimization, predictive maintenance scheduling, energy performance certifications (All WP7 UCs).</p>	<p><u>Internal</u></p> <ul style="list-style-type: none"> Urban planners and Innovations Centres/Technical Research Center of Finland – VTT/ Internal City authorities/Smart City strategies implementation Unit for the City of Helsinki/ FVH / Internal 	<p>WP2 – Task 4, WP7, WP8, WP10</p>	<p>Internals: M5 Externals: end of M6</p>	



		<ul style="list-style-type: none"> • Commercial/European-level Industrial Facility Managers – Headquarters in Helsinki, Finland/ CAVERION (CAV)/ Internal • ESCOs/Croatian ESCO – Microgrid Operator/ KRK • ESCOs/Greek ESCO – Aggregator/ ELIN VERD (VERD)/ Internal/ Business Development personnel • Aggregators/ URB, EEE (see Business Area 1) <p><u>External</u></p> <ul style="list-style-type: none"> • Professional Association / European Association of Energy Services Companies / eu.ESCO • Professional Association / European Building Automation and Controls Association / eu.BAC • Consumer Association / European Consumer Organization / BEUC 			
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		<ul style="list-style-type: none"> • Policy Makers / European Commission Initiative / Covenant of Mayors for Climate & Energy • Professional Association / European Council of Spatial - Urban Planners / ECTP-CEU • Policy Makers / European Commission Instrument / Urban Development Network • Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) • Policy Makers / European Commission Instrument / H2020 Bridge – Business Models Working Group 			
<p>Task 2: Feedback on the analysis on socio-economic, organizational and regulatory obstacles to Synergy Innovation deriving from the state-of-the-art analysis on relevant topics in a European level, in-depth literature review and outcomes of the relevant</p>	<p><u>External</u></p> <ul style="list-style-type: none"> • Regulators - Policy Makers / European Organizations/ CEER • Professional Associations / European-level Energy Regulatory Agency / ACER 	WP2, WP10	Externals: end of M6	Survey with internal Telco interview with internal and external	



questionnaires circulated among Synergy Consortium Partners.	<ul style="list-style-type: none"> • Policy Makers / European Commission Instrument / ETIP-SNET (e.g. Working Groups 5 and 6) • Policy Makers / European Commission Instrument / H2020 Bridge - Regulations Working Group 			
Task 3 Investigation on data IPR policies	<p>Internal: within group b</p> <ul style="list-style-type: none"> • Data Management Personnel (management, interoperability, sharing, protection, security) • Legal Department / Data Protection Officers <p>External: within group c</p> <ul style="list-style-type: none"> • EU-wide umbrella initiatives: BRIDGE, OPEN-DEI, BDVA. Relevant working groups yet to be identified. 	In synergy with T2.2 Other relevant tasks: T1.3, T1.4 WP3, WP4	M6 to M8	



Table 3. Planned activities for WP4.

Activity to be performed and aim of stakeholder engagement	Electricity data value chain stakeholders	Related WPs	Timeline	Recommended Engagement
<p>Task 1: Requirements extraction and validation for big data analytics functionalities</p>	<p>Internal: Data analysts & data management personnel from all demo partners</p> <p>External: Data analysts & data management personnel from 5 organisations in the Energy domain Regarding the category of the aforementioned organisations, at this stage the following are considered: network operators, electricity retailers, RES operators, aggregators and facility managers/ ESCOs. The list will be refined as WP4 activities progress. This applies across all references to external stakeholder engagement in WP4 activities in the current table</p>	<p>WP3</p>	<p>M10-M11</p>	<p>Workshops and live documents with internal</p> <p>Telco interview with internal and external</p>



<p>Task 4: Requirements extraction and validation for data sharing workflow, contractual aspects and relevant services to be developed</p>	<p>Internal: Legal department, data management personnel & business development and strategy department from all demo partners</p> <p>External: Legal department, data management personnel & business development and strategy department from 5 organisations in the Energy domain</p>	<p>WP3</p>	<p>M10-M11</p>	<p>Workshops and live documents with internal</p> <p>Telco interview with internal and external</p>
<p>Task 5: Requirements extraction and validation for data discovery, suggestion services and dataset exploration</p>	<p>Internal: Data analysts & data management personnel from all demo partners</p> <p>External: Data analysts & data management personnel from 5 organisations in the Energy domain</p>	<p>WP3</p>	<p>M10-M11</p>	<p>Workshops and live documents with internal</p> <p>Telco interview with internal and external</p>



Table 4. Planned activities for WP10.

Activity to be performed and aim of stakeholder engagement		Electricity data value chain stakeholders	Related WPs	Timeline	Recommended Engagement
Task 1: Definition of new data-sharing based business models:	- Input from energy market stakeholders to understand advanced energy services to be created	Stakeholder category 1a / Demo partners Stakeholder category 1b / Demo partners: data scientist, business development	WP2, T2.1 T2.2	M9 to M18	Workshops with internal Telco interview with internal and external
	Input from stakeholders about creation of data sharing economies	Stakeholder category 2c / umbrella organizations: OPEN DEI, BDVA → Relevant working groups Stakeholder category 2d / sister projects in DT-ICT-11-2019, other relevant topics	WP9, T9.4	M9 to M18	Workshops with internal Telco interview with internal and external
	New actors to understand emerging energy	Stakeholder category 1b / Demo partners: business development	WP2, T2.1 T2.2	M9 to M18	



	stakeholder ecosystems	Stakeholder category 2c / umbrella organizations: BRIDGE → Relevant working groups Stakeholder category 2d / other projects to be identified	WP9, T9.4		
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3.2 Completed activities

The planned activities shown in chapter 3.1 demonstrate how the main focus of the living labs activities for the first year of the project took place in WP2, which was concerned with validating and gaining valuable feedback on the SYNERGY use cases (UC), user and business requirements, as well as assessing the barriers (regulatory, socioeconomic, and organisational) that could hinder the realization of the SYNERGY concept in the demo countries of the project. LL validation activities also focused on WP10 and the preliminary business models (data-driven) defined by the project, though this process is expected to be continued during 2021 to include external feedback on the first version of the business models reported in M11 of the project.

3.2.1 WP2/ WP4 Living Lab Activities

During the first year of the project validation activities were carried out with both internal and external stakeholders to consolidate SYNERGY's UCs and requirements. The internal validation process was carried out via two approaches:

- The first approach was the adoption of web-based collaborative tools that enabled an agile-based method for the elicitation of UCs and requirements. Specifically, the collaborative tools enabled all involved partners to maintain a synced view of the UCs (Trello) and requirements (Volere) throughout their development and partners could actively participate in the development process. Thus, both demo-related and technical partners, had the opportunity to effectively interact through the platforms, chat, provide comments and suggestions, and ultimately contribute to the derivation of their final form. This process lasted more than 2 months for the UCs and requirements and involved all internal demo partners in providing feedback on the use cases and requirements referring to all WPs involved in the SYNERGY implementation.
- The second approach, focusing on the internal validation of SYNERGY's requirements, took place during the project's technical meeting in May 2020, when dedicated workshops were organized by the technical coordinator (TC). The objectives of these sessions were threefold; (1) to provide feedback on the requirements of the SYNERGY big data platform and AI analytics marketplace, as well as on the data sharing workflows defined in SYNERGY (see Table 3), (2) to establish and ensure that the guidelines (ISO/IEC/IEEE 29148:2011) for the formulation of requirements by the involved partners would be respected in terms of classification, syntax, linguistic



parameters, etc., (3) collaboratively and in real-time, derive a number of requirements related to exemplary UCs.

The analysis on regulatory, socioeconomic, and organisational barriers in task 2 of WP2 (for more details on this analysis see D2.3 ‘Socio-economic and regulatory analysis of obstacles to innovation’) revealed several issues that were identified by the SYNERGY partners as potential obstacles in driving the energy transition via the SYNERGY concept. The aim of the LLs validation process performed with internal stakeholders in this context, aimed to:

- Comprehensively evaluate partner responses to the initial questionnaire-based engagement.
- Engage with appropriate business leaders from organisations that could offer an expert view on regulatory and organisational barriers and embody the national landscape of their industry.
- Reveal the main problems of the electricity data value chain stakeholders as well as providing further input, separate to the input provided by the business contacts working in the SYNERGY project, regarding gains expected to be achieved by a data value intensive project applied in their domain.

An initial stakeholder group was created involving partners from IPTO, CAV, EEE, CUERVA and HEDNO representing the TSO, Facility Manager, Aggregator, RES Operator and DSO industry, respectively. Appropriate business leaders from IPTO, CAV and EEE were engaged by their respective colleagues that are directly associated with SYNERGY and interviews were arranged. The coincidence of the summer period, the Covid-19 pandemic and potential inter-organisational constraints did not allow the timely engagement from CUERVA and HEDNO; however, such engagement with potential extended engagement with other partners will occur in the next phase of T2.2.

Finally, a dedicated workshop was organized with technical representatives from SYNERGY partners during the first plenary meeting of the project (October 2020) towards receiving initial feedback on the preliminary design of the SYNERGY architecture and elaboration on the roles and interactions between the different components and modules involved.

Apart from the internal validation activities, through which the consortium had the opportunity to focus on low-level business and technical aspects of the project, the validation of the high-level objectives of SYNERGY encompassing the essence of the project's UCs and requirements in a more abstract way, was also pursued with the active engagement of various external stakeholders as part of the LL activities. The aim of this process was to establish and maintain a connection with the relevant business and technological environments revolving



around big data analytics and the electricity market to ensure that the project reaches a European-wide industry value. This process was initiated by the conduction of stakeholder mapping which contained targeted contacts of SYNERGY partners from the European electricity data value chain under the auspices of the WP9 leader. Subsequently, individual interactive sessions were carried out between the TC of the project and several stakeholders that were identified and selected with the help of the SYNERGY consortium. Table 5 summarises the interviews conducted with the external stakeholders.

Table 5. External stakeholder interviewees.

Stakeholder	Category	Interview Date
Albena A.D.	DSO and Facility Manager in Bulgaria	25/08/2020
My Energia Oner SL (MIWEnergia)	Retailer in Spain	26/08/2020
Mytilineos S.A. - Electricity Sector Unit (Protergia)	Retailer in Greece	14/09/2020
City of Espoo	City Authority in Finland	08/10/2020
City of Leipzig	City Authority in Germany	08/10/2020

3.2.2 WP10 Living Lab Activities

LL activities performed in relation to WP10 focused on the internal validation of SYNERGY's preliminary data sharing-based business models and took place during the project's first plenary meeting in October 2020. A dedicated workshop was organized by the WP10 leader. The objective of this session was to present the initial list of business models that had been previously elaborated on through feedback from the demo partners of the project with regards to their relevance, importance, and interest to introduce in their business operations. As part of this workshop, SYNERGY demo partners performed a polling-based assessment of the business models, while providing feedback on correcting or further enhancing the business models proposed with a view to fine-tune the models and develop their business applicability.



4 Evaluation

Table 6 shows a summary of the completed and planned engagements, as well as the stakeholders identified as important to interact with and the stakeholders actually interacted with. The comparisons between the planned and completed activities and interactions allows for an evaluation of the LL activities in the first 12 months of the project, the green cells in Table 6 highlight where the targets from the planned activities were met, the red cells indicate missed targets.

Table 6. Comparison of planned and completed engagements and planned and engaged stakeholders

WP/Task	Planned engagement	Engagement status	Internal Validation	External Validation
WP2/T2.1	M5-M6	Completed	Completed	Completed
WP2/T2.2	M6	Ongoing	Completed	Ongoing
WP2/T2.3	M6-M8	Ongoing	Completed	Ongoing
WP4/T4.1	M10-M11	Completed	Completed	Completed
WP4/T4.4	M10-M11	Completed	Completed	Completed
WP4/T4.5	M10-M11	Completed	Completed	Completed
WP10/T10.1	M9-M18	Ongoing	Completed	Ongoing

What is apparent from Table 6 is that a number of targets were hit, and successful engagements were carried out in all three WPs. However, it is also shows that some engagements didn't take place at the time they were planned and are still ongoing, specially with regards to the validation of specific results from external stakeholders. Such activities are, though, already planned and will be performed within the next months of the project implementation. The following subsection will first provide an explanation for these deviations and then provide strategies for improving the LL process.



4.1 Lessons Learned

The contributing factors to the delay in some engagements is in part due to external factors from the LL methodology, e.g., delays in the development and design stages, Covid-19 pandemic, and organisational restructuring for some consortium partners. However, the planning procedures for LL is also an area of improvement. Specifically, much of the information gathered was from WP and task leaders with little interaction between LL leaders and PC or TC. With regards to the number of external interactions being lower than expected, this is mostly due to deficiencies in the availability of relevant external stakeholders. Therefore, following the completion of Living Lab activities in the first 12 months of the SYNERGY project, the issues encountered thus far can be summarised into two main factors:

1. Over focussing on a bottom-up approach for engagement planning.
2. Lack of available contacts for external stakeholder interaction.

4.1.1 Over focussing on a bottom-up approach for engagement planning

A predominantly bottom-up approach was used in the LL activities planning. Specifically, the methodology in which information required for stakeholder interactions in the LL activities was obtained through contacting individual work package or task leaders. The goal of this approach was to identify the relevant stakeholders and required interactions that would be required from the perspective of the component tasks. However, this led to many partners being responsible for explaining the aims, goals, relevant stakeholders, and timeframe for engagement activities. Consequently, the broader picture of SYNERGY and overall project goals became less clear. Furthermore, SYNERGY is a complex project with many partners involved in many elements of the design phase. This creates a problem for the LL process as many partners are unclear on how their work links to other WPs. Consequently, there is an element of ambiguity as to when they need to ascertain feedback and which stakeholders to gain feedback from.

4.1.2 Hybrid LL methodology

To address the issue of over-focussing on the bottom-up approach, a new hybrid approach to the LL activities which incorporates both a top-down and bottom-up approach will be implemented. The bottom-up approach will continue to be utilised through contact between the LL leaders and the various demo partners and WPLs. The top-down approach will consist of a small overview committee consisting of the LL leaders, technical coordinators, and project coordinators. This committee can communicate when stakeholder engagements are foreseen from a broad perspective with a clear vision of the overall project goals, with the LL leaders



acting as a conduit to the necessary work package and task leaders to plan the engagements (see Figure 1).

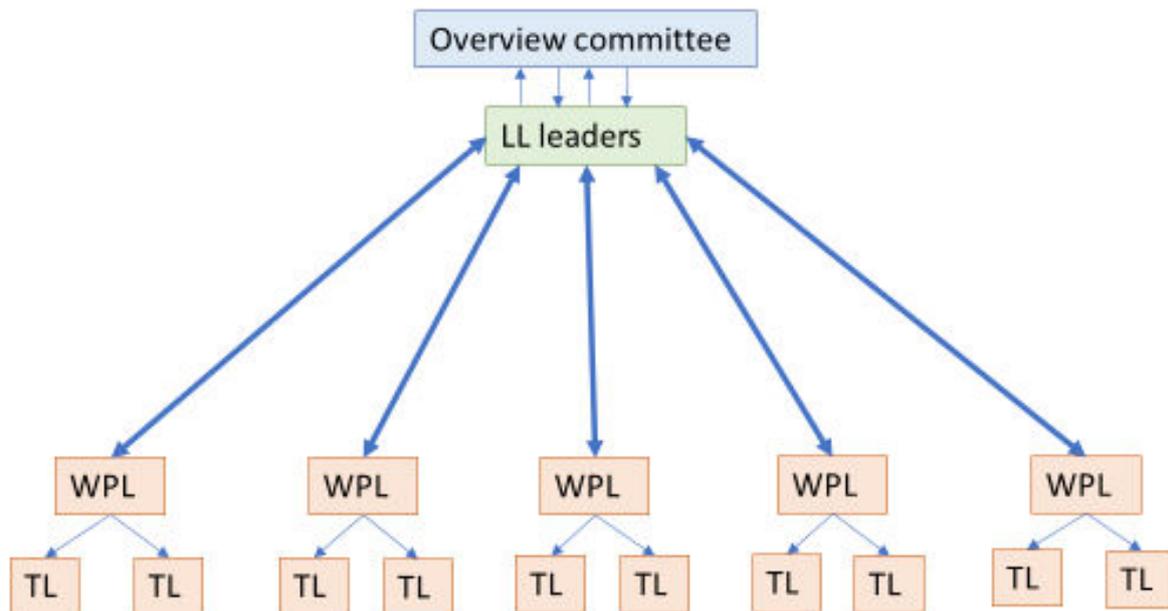


Figure 1. Top-down approach to LL activities.

4.1.3 Lack of available contacts for external stakeholder interaction.

The second issue that has been encountered in the LL activities is the difficulties experienced trying to recruit external stakeholders. Despite the large number of partners in the SYNERGY consortium, the network of stakeholders contacts available for LL activities is limited.

The status of the current contacts available in SYNERGY, as a result of the initial Task ID questionnaires that were completed by the consortium partners and the stakeholder activities conducted within the first 12 months (see D9.1 for more details), is displayed in Figure 2. At month 12 of the project, the number of contacts available stands at 28.

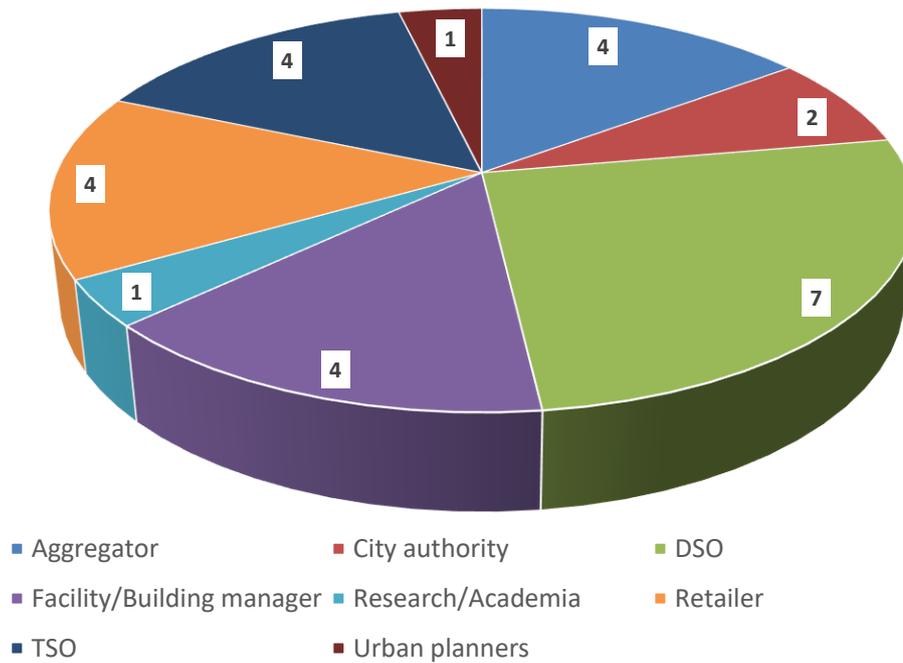


Figure 2. Available contacts for SYNERGY for LL activities.

As well as the number of stakeholders, it is important to monitor the types of stakeholders that have been identified. Several different categories have been identified as important to the SYNERGY project (see D9.1 for more details), the key stakeholders and number of representatives are also shown in Figure 2. Only 8 stakeholder groups are represented in the current SYNERGY community, which needs to be broadened given that 21 various stakeholder categories were identified as important to the SYNERGY process. Therefore, many groups are not represented in the current database of stakeholders and efforts are needed in the LL process to fill these gaps.

4.1.4 Strategies for developing a stakeholder community in SYNERGY

To improve the number of stakeholders available and ensure all important stakeholder categories are available for future interactions in the LL activities, four strategies will be undertaken to develop a SYNERGY stakeholder community. These strategies include:

- Tasking current consortium members to identify and list contacts within their own networks that would be relevant and/or interested in the SYNERGY project.
- Increasing the visibility of SYNERGY at public events and on social media.
- Identifying other EU projects that could benefit from an exchange of ideas/expertise and opening communication and collaboration channels.



- Exploiting a snowball effect from engagement activities that take place as part of the LL process. Using LL activities as an opportunity to promote SYNERGY and utilising external stakeholders as a messenger to other parties they may have in their own network.



5 Living Labs Methodology: Updates

This chapter will explain the key components of the new hybrid approach. In addition, updates on current processes and tools to improve the efficacy of the LLs methodology will be explained.

5.1 Updated methodology for planning and carry out engagements

The methodology utilised for the planning and carrying out engagements in the LL activities will follow the same five-stage process (see Figure 3) outlined in detail in D9.1. An updated summary of these stages is provided in the following subsections in this chapter.



Figure 3. Living Labs stakeholder engagement methodology.

5.1.1 Task specification

This stage concerns the identification of the type of feedback that is required from stakeholders on a particular solution, business model, technical component, etc. This can come from technical or project leaders (top-down) as well as WPLs and DPs (bottom-up). The information required at this stage includes when the engagement activities need to be carried out and who needs to be involved in the SYNERGY consortium for carrying out the engagements.

5.1.2 Stakeholder identification

This stage should be used to identify who the relevant internal and/or external stakeholders are that need to be engaged to generate the required feedback. This should also include



considering who is available with regards to external contacts in the SYNERGY community (see chapter 3.4.4 for more details).

5.1.3 Engagement plan

This stage is where all parties within the consortium who are involved with a particular stakeholder engagement that is to be carried out collaborate to plan and execute the engagement activity. This planning stage is used to determine exactly who will be engaged and on what date, what will be shared with the stakeholder to gather appropriate feedback, the method of engagement (interview, focus group, etc.) and the clarification of each partners responsibility in the engagement task. The process for the engagement planning phase is explained in detail in D9.1, however, there have been a few updates on this process and tools used to facilitate the engagement planning stage. It was originally stated in D9.1 that the online tool Trello would be used to document the details of stakeholder engagement activities. However, this methodology was identified as being somewhat inefficient as it resulted in multiple sources with repeated data. Therefore, the methodology used to document and monitor the planned upcoming engagements was switched to an online excel workbook that was accessible by all partners and highlighted the most important information for ensuring stakeholder engagement tasks could be carried out efficiently and effectively, such as the time and date of the engagement, detailing what stage of the planning process the engagement activity is in, and importantly, what immediate action is required for the engagement to happen. Figure 4 displays the online LL tracker workbook.

	A	B	C	D	E	F	G	H
	WP	WP lead	Task	Task lead	Contact	Task ID received	Planned engagement date	Action required
1								
2								
3			T2.1 & T2.2 (1st iteration)	VERD		Y	aug-20	Complete consultation register when engagements are completed
4	WP2	VERD	T2.1 & T2.2 (2nd iteration)	VERD		Y	apr-21	
5			T2.3	ETRA		Y	aug-20	Clarify if engagement planning required
6			T2.4	UBITECH		Y	feb-21	UBITECH to confirm date of engagement
7								
8			T3.1 (1st iteration)	KONCAR		Y	aug-20	Await response from KONCAR/UBITECH
9			T3.1 (2nd iteration)	KONCAR		Y	jan-21	
			T3.2	UBITECH			jan-20	

Figure 4. LL online tracker workbook (contact information removed from public deliverable).



5.1.4 Engagements

This is the stage in which the engagements are carried out. As shown in the roles and responsibilities table in chapter 2.2, the engagements are likely to be carried out by the TCs or project leads and on occasion the demo partners, work package or task leads, with GEKO providing support and tools wherever possible. An additional tool that will be introduced here is the stakeholder consultation register (Appendix 1). The purpose of this tool is to provide a summary of key information following completion of a stakeholder engagement activity. This includes details such as the type of stakeholder engaged, how many people were engaged, when it occurred and how it was carried out. It also includes evaluative details such as, were the aims of the engagement addressed, was the required feedback successfully gained, and how will the feedback gained be incorporated back into the SYNERGY project.

5.1.5 Inform, Update and Next Steps

In this stage, the information gathered from the engagements needs to have bi-directional dispersion with regards to the top-down and bottom-up approach. The various engagements will be carried out by both the TCs, project leaders, DPs and the WP/ task leaders. It is vital that any gathered information is relayed back to the appropriate parties within the consortium. To achieve this, the LL leaders will act as the primary conduits for relaying information.

5.2 Top-down approach

An integral aspect to the top-down methodology is identifying the key stages at which feedback from stakeholders will be required. Therefore, a timeline will be proposed to highlight at a high-level, what feedback is needed and at what stage it will be obtained. Equally important to planning a timeline of when and what feedback will be required, is maintaining the ethos that the feedback required throughout the project needs to have an element of flexibility; thus, timeframes should be adjusted according to project progression, identification of new goals and building on previous feedback gathered. The current planned timeline for interacting with stakeholders in SYNERGY is shown in Table 7, the rows marked in green indicate completed activities.



Table 7. Timeline of predicted stakeholder engagements from the top-down perspective.

Date	Stakeholder	Feedback required	WP(s) involved
M3-M4	Internal	Feedback on use cases from electricity data value chain stakeholders - Business Users.	WP2
M5	Internal	Feedback from technical users on SYNERGY workflows and requirements.	WP2
M8	Internal	Feedback regarding regulatory, socioeconomic, and organization barriers to innovation for the adoption of the SYNERGY big data and analytics tools and the applicability of energy apps.	WP2
M8-M9	External	Feedback on end-user and relevant stakeholder requirements as well as - feedback on priorities regarding data sharing and data monetization and energy app evaluation.	WP2
M10	Internal	Feedback from technical users on architecture design.	WP2
M10	Internal	Feedback on preliminary business models.	WP10
M13-M15	Internal and External	Feedback on data (intelligence) sharing-driven business models and business models' completeness as well as level of interest and prioritization by stakeholders (Business Units of electricity data value chain stakeholders).	WP10
M15-M18	Internal and External	Internal – Feedback on SYNERGY Big data platform and AI Analytics Marketplace/ Alpha release.	WP3-WP4



		External - Feedback on the features provided by the platform and its ease of use, presentation of the detailed specifications and initial assessment on usefulness, applicability, suitability and feature completeness (technical users from electricity data value chain stakeholders).	
M15-M18	Internal	Feedback from business users with regards to the functionality envisaged for the energy apps and mock-ups.	WP5-WP6-WP7
M15-M18	Internal	Preliminary Platform Business Model - Feedback from business users on the platform business model and pricing strategy.	WP10
M19-M22		Internal – Feedback on SYNERGY Big data platform and AI Analytics Marketplace/ Beta release. External – Feedback on the access to the beta platform and the features provided by the platform as well as its easiness to use. Feedback from the demonstration of the developed technologies and initial assessment on usefulness, applicability, suitability, and feature completeness (technical users from electricity data value chain stakeholders).	WP3-WP4



M23- M26	Internal	Feedback on the energy apps access and experimentation from business users.	WP5-WP6- WP7
M25- M33	External	Feedback from external stakeholders from platform testing and AI analytics marketplace. Feedback to gauge interest (also on energy apps) and generate knowledge from external stakeholders for further improvements (in M36).	WP3-WP4 (required) WP5-WP6- WP7 (optional)
M34- M40	External	Continuous engagement to test usability of the SYNERGY tools from technical and business users.	WP3-WP4- WP5-WP6- WP7
M36- M42	External	Engagement for demonstration and access provision purposes geared towards potential future customers and replication/ exploitation.	WP8-WP10 (predominantly) WP9 (minor input)
M37- M42	External	Feedback on the platform's business and pricing model for the purpose of generating a business innovation plan.	WP10

5.3 Bottom-up approach

To ensure all perspectives from the various consortium partners are considered in the LL activities in SYNERGY, the bottom-up approach that compliments the top-down approach will continue to be part of the LL methodology. To ensure perspectives are considered in a bottom-up approach, monthly meetings will take place with members of the LL forum (see D9.1 for details on the) attending. The monthly LL meetings, hosted by the LL leaders, will be the main forum for not only informing the consortium of gathered feedback, but also describing how this information will be used to improve the solutions offered in SYNERGY. This monthly meeting



will also provide the opportunity to discuss the methodologies used in the LL process, such as what worked well or what could be improved. This meeting will provide a platform from which work package, task and demonstration site leaders can voice any issues they experience at ground level, any conflicts that arise with regards to their tasks and the overall goals, their own perspective, or ideas on how to conduct stakeholder engagements or any extra feedback they may require from additional engagements not identified from the broader top-down approach. The bottom-up approach should be considered from the perspective of the task and work package leaders involved in the various design elements of the SYNERGY platform and the perspective of the demo site leaders responsible for the pilot site activities in each demo country.

5.3.1 Task and WP perspective

Following the formulation of a timeline of predicted engagements from the top-down perspective (see Table 6), potential engagements for each work packages can be planned. Table 7 provides a summary of the tasks identified from the perspective of each WP/task leader, as well as upcoming engagements, the table also includes completed engagements from the first 12 months of the project. The activities listed in Table 8 and the timeline shown in Table 6 can be used as a foundation to open discussions between all LL members with the goal to align understanding and facilitate collaborations between partners throughout the project with regards to the LL activities.

Table 8. Predicted stakeholder activities from the bottom-up perspective.

Task*	WP	Partner	Engagement date	Target audiences	Engagement type	Engagement complete
T2.1	WP2	VERD	Jul 2020 – ongoing	DSO, TSO, Retailers, Aggregators, Policy makers, RES operators, Urban planners, ESCOs	Consultations (interviews)	Y
T2.2	WP2	VERD	Jul 2020 – ongoing	Regulators, Policy makers	Consultations (questionnaires, interviews)	Y



T2.3	WP2	VERD	Jul 2020 – Aug 2020	Data managers, Legal department, EU wide initiatives	Consultations (questionnaires, interviews)	Y
T10.1	WP10	ETRA	Sep 2020	Internal partners	Consultations (interviews)	Y
T4.1	WP4	S5	Oct 2020	Data analysts & managers	Consultations (interviews)	Y
T4.4	WP4	S5	Oct 2020	Legal department, Data analysts & managers	Consultations (interviews)	Y
T4.5	WP4	S5	Oct 2020	Data analysts & managers	Consultations (interviews)	Y
T3.1	WP3	KONCAR	Jan – June 2021	Data experts		N
T3.2	WP3	UBITECH	Mar – June 2021	Energy experts, Big data experts		N
T3.3	WP3	UBITECH	Mar – June 2021	Energy experts, Big data experts		N
T3.4	WP3	UBITECH	Mar – June 2021	Energy experts, Big data experts		N
T7.1 (1 st iteration)	WP7	VTT	Mar – June 2021	ESCOs, Facility building manager, Renovation manager, City decision makers		N



T7.2 (1 st iteration)	WP7	VTT	Mar – June 2021	Building owners, City decision makers & planners, End users (e.g. Investors, City planners, Citizens)		N
T7.3 (1 st iteration)	WP7	VTT	Mar – June 2021	ESCOs, Facility building manager, Energy managers, Facility owners, DSO		N
T7.4 (1 st iteration)	WP7	VTT	Mar – June 2021	ESCOs, Facility building manager, ICT-service provider, Energy managers, Facility owners, Aggregators, Retailers		N
T10.1	WP10	ETRA	Mar – June 2021	External (Umbrella EU organisations, e.g. BRIDGE)		N



T10.2	WP10	UCY	Mar – June 2021	DSO, Business Development, Data Scientists		N
T3.5	WP3	MAGGIOLI	Aug – Oct 2021	I.T. & Data management experts		N
T4.2	WP4	S5	Aug – Oct 2021	Data analysts, operations & managers		N
T4.3	WP4	S5	Aug – Oct 2021	Data analysts & managers		N
T7.1 (2 nd iteration)	WP7	VTT	Nov 2021 – Feb 2022	ESCOs, Facility building manager, Renovation manager, City decision makers		N
T7.2 (2 nd iteration)	WP7	VTT	Nov 2021 – Feb 2022	Building owners, City decision makers & planners, End users (e.g. Investors, City planners, Citizens)		N
T7.3 (2 nd iteration)	WP7	VTT	Nov 2021 – Feb 2022	ESCOs, Facility building manager,		N



				Energy managers, Facility owners, DSO		
T7.4 (2 nd iteration)	WP7	VTT	Nov 2021 – Feb 2022	ESCOs , Facility building manager, ICT-service provider, Energy managers, Facility owners, Aggregators, Retailers		N
T5.1	WP5	ICCS	Oct 2022 – Apr 2023	TSO, DSO, Retailer, Aggregator, City Authorities, Business development, Legal Department		N
T5.2	WP5	ICCS	Oct 2022 – Apr 2023	TSO, DSO, Retailer, Aggregator, Business development, Operations personnel		N
T5.3	WP5	COBRA	Oct 2022 – Apr 2023	Retailer, RES aggregator,		N



				Marketing department		
T5.4	WP5	ETRA	Oct 2022 – Apr 2023	DSO, Retailer, RES aggregator, Business development		N
T2.4	WP2	VERD	TBD	Energy experts, Data managers		
T9.5	WP9	EEE	TBD			
T9.6	WP9	KONCAR	TBD			

5.3.2 Demo site perspective

The following section presents the demo cases related to each demo site and a list of relevant stakeholders identified by each demo site leader. Engagement activities will be planned later in the SYNERGY project, it is premature at this stage to list potential activities within the demo site.

5.3.2.1 Greece

- Demo Case 1: Innovative Flexibility-based Network Management (Lead: HEDNO-IPTO)
- Demo Case 2: Common Operational Scheduling of power grids (D&T) for TSOs and DSOs (Lead: HEDNO-IPTO)
- Demo Case 3: Enhanced Network Asset Management and Planning (Lead: HEDNO-IPTO)
- Demo Case 4: Retailer portfolio analytics and elasticity (price-based flexibility) estimation for the provision of services to network operators (Lead: EPA)
- Demo Case 5: Flexibility segmentation, classification, and clustering towards VPP configuration for demand response (Lead: VERD)
- Demo Case 6: Local Flexibility Sharing for Self-Consumption Optimization at Local Community Level (Lead: VERD)

Table 9. Relevant stakeholders to the Greek demo site.

Stakeholder Organization Name	Stakeholder Type [DSO, TSO, Aggregator, RES Operator, Electricity Retailer,	Stakeholder Category [Pilot Area Stakeholder, Pilot National	Relation and Involvement in the project



	Prosumer (including facility manager, ESCOs and City Authorities, Communities, Regulator, Policy maker, etc.)	Stakeholder, 3rd EU Country Stakeholder]	
Internal			
HEDNO	National DSO	Pilot Area Stakeholder	Demo Participant
IPTO	TSO	Pilot Area Stakeholder	Demo Participant
EPA	Retailer	Pilot Area Stakeholder	Demo Participant
ELIN/VERD	ESCO & Aggregator	Pilot Area Stakeholder	Demo Participant
Cuerva	Spanish DSO and Retailer	Spanish Pilot Area Stakeholder	Project Partner
External			
National Regulatory Authority of Energy (RAE)	Regulator	Pilot National Stakeholder	Retail Market Regulator/ Expert
Public Power Corporation (PPC)	Power generation and supply, Electricity retailer	Pilot National Stakeholder	Business and Field Experts/ Future exploitation target actor
Energy Exchange	Market Operator	Pilot National Stakeholder	Market Expert
Centre for Renewable Energy Sources & Saving	Research Centre	Pilot National Stakeholder	Energy Expert
Hellenic Ministry of Environment, Energy and Climate Change	Public Authorities – Policy maker	Pilot National Stakeholder	Policy maker
EURELECTRIC	Policy Maker	EU Stakeholder	Business and Field Experts
Local Aggregators/ Retailers and Energy Communities	Market Actors	Pilot National Stakeholders	Business Experts/ Future exploitation target groups
Residential Customers	Electricity Prosumers	Pilot Area Stakeholders	Demo Participants
Technology companies providing equipment necessary for the	Technology vendors	3 rd EU Country Stakeholder	Demo Facilitators



implementation phase			
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5.3.2.2 Spain

The Spanish demonstrator will implement the following demo cases:

- Demo Case 7: Enhanced PV Plant Asset Management (Lead: COBRA)
- Demo Case 8: Advanced RES Forecasting for improved market positioning and optimized flexibility activation for the provision of services to network operators (Lead: COBRA-URB)
- Demo Case 9: Optimising Power Purchase Agreement between RES Operators and Electricity Retailers, towards Greening Electricity Supply and reducing associated tariffs and costs (Lead: CUE-COBRA)
- Demo Case 10: Transformation of the Retailer business model from Commodity to EaaS providers for the implementation of energy efficiency campaigns (Lead: CUE)
- Demo Case 11: Enhanced Distribution Network Asset Management and Reinforcement (Lead: CUE)
- Demo Case 12: Innovative Flexibility-based Distribution Network Management (Lead: CUE-URB)

Table 10. Relevant stakeholders to the Spanish demo site.

Stakeholder Organization Name	Stakeholder Type [DSO, TSO, Aggregator, RES Operator, Electricity Retailer, Prosumer (including facility manager, ESCOs and City Authorities, Communities, Regulator, Policy maker, etc.)]	Stakeholder Category [Pilot Area Stakeholder, Pilot National Stakeholder, 3 rd EU Country Stakeholder]	Relation and Involvement in the project
Internal			
Cuerva	DSO and Retailer	Pilot Area Stakeholder	Demo Participant
COBRA	RES Plant Operator	Pilot Area Stakeholder	Demo Participant
URBENER	Aggregator	Pilot Area Stakeholder	Demo Participant
External			
GALP	RES operator, owner, developer, generator and electricity retailer/wholesaler	National Stakeholder	RES Operator & Electricity Market Expert/ Future exploitation target actor
CIDE	Aggrupation of local DSOs	National Stakeholder	Grid Operators/ Future exploitation target group
ATOS	SME - TICs	National Stakeholder	IT Experts
Turning Tables	SME – TICs	National Stakeholder	IT Experts



QUASAR ENERGIA	ELECTRICITY RETAILER	National Stakeholder	IT Experts/ Future exploitation target actor
MAZ	CONSUMER-FACILITY MANAGER	National Stakeholder	Purchasing Expert/ Future exploitation target actor
AYTO. ZARAGOZA	PROSUMER, CITY AUTHORITIES	National Stakeholder	Purchasing Expert/ Future exploitation target actor
OCISPORT	PROSUMER	National Stakeholder	Purchasing Expert
Retailers	Market Actors	Pilot National Stakeholders	Future exploitation target groups
Residential Customers	Electricity Prosumers	Pilot Area Stakeholders	Demo Participants

5.3.2.3 Austria

The Austrian demonstrator will implement the following demo cases:

- Demo Case 13: Innovative Flexibility-based Distribution Network Management (Lead: GUS)
- Demo Case 14: Local Energy System Optimization and Enhancement of Security of Supply through Islanding (Lead: GUS-EEE)
- Demo Case 15: Flexibility segmentation, classification and clustering towards VPP configuration for flexibility activation and explicit demand response (Lead: EEE)
- Demo Case 16: Local Flexibility Market for network services and self-consumption through blockchain-enabled smart contract establishment and handling (Lead: EEE)

Table 11. Relevant stakeholders to the Austrian demo site.

Stakeholder Organization Name	Stakeholder Type [DSO, TSO, Aggregator, RES Operator, Electricity Retailer, Prosumer (including facility manager, ESCOs and City Authorities, Communities, Regulator, Policy maker, etc.)]	Stakeholder Category [Pilot Area Stakeholder, Pilot National Stakeholder, 3 rd EU Country Stakeholder]	Relation and Involvement in the project
Internal			
Energie Gussing	DSO	Pilot Area Stakeholder	Demo participant
EEE	Local Aggregator and Energy Community Promoter	Pilot Area Stakeholder	Demo Participant



Other DSOs in the consortium (HEDNO/ CUERVA)	DSOs	Greek and Spanish Pilot Area Stakeholders	Project Partners
ENES/ Suite5	Data/Platform experts	Project partners	Demo Facilitators
External			
Biogas Strem, Siegfried Legath	RES power plant operator	Pilot stakeholder area	Business Expert
ecoEnergyland, Bernhard Deutsch	Public authority	Pilot stakeholder area	Regional representative
S&H Connect, Stefan Herzog	Planning and installation company	Pilot stakeholder area	Business Expert

5.3.2.4 Finland

The Finnish demonstrator will implement the following demo cases:

- Demo Case 17: Optimized Urban Energy Performance Monitoring and Optimization (Lead: FVH)
- Demo Case 18: Advanced Urban Planning for long-term sustainability targets realization (Lead: FVH)
- Demo Case 19: Evidence-based renovation support for optimized and accurate energy-efficient design of buildings (Lead: CAV)
- Demo Case 20: Holistic Real-time Facility Energy Management Optimization (Lead: CAV)

Table 12. Relevant stakeholders to the Finnish demo site.

Stakeholder Organization Name	Stakeholder Type [DSO, TSO, Aggregator, RES Operator, Electricity Retailer, Prosumer (including facility manager, ESCOs and City Authorities, Communities, Regulator, Policy maker, etc.)]	Stakeholder Category [Pilot Area Stakeholder, Pilot National Stakeholder, 3 rd EU Country Stakeholder]	Relation and Involvement in the project
Internal			
VTT	Energy, Buildings and Data Management Experts	Project Partner	Demo Facilitator
Forum Virium Helsinki	City Planning Actor	Pilot Area Stakeholder	Demo Participant
Caverion	Facility Manager	Pilot Area Stakeholder	Demo Participant
External			
Varma	Prosumer	Pilot area stakeholder	Demo Facilitators
Nordpool / Fingrid	Electricity market operator/TSO	3 rd EU country stakeholders	Demo Facilitators



Building employees	End-user	Pilot area stakeholder	End-user
Helen	Electricity retailer	Pilot area stakeholder	Demo Facilitators/ Future Exploitation Target Actor

5.3.2.5 Croatia

The Croatian demonstrator will implement the following demo cases:

- Demo Case 21: Self-Consumption Optimization for Energy Poverty Alleviation and Sustainable Local Energy Communities (Lead: KRK)

The definition of the relevant external stakeholders for the Croatian Demo Site is still ongoing and will be reported in the next version of this deliverable, though it is not considered a bottleneck for any relevant activity, given the small scale of the demo site and the fact the partner KRK (as internal pilot area stakeholder) can ensure that engagement of local authorities' experts will be engaged in validation activities, since they are directly linked to their organization (KRK is a Local Authority Agency and as such has access and can engage a variety of experts from linked authorities).



6 Conclusion

In the first 12 months of the project, the LL activities has facilitated successful internal and external stakeholder interactions that has generated valuable feedback for improving the SYNERGY solutions. Specifically, these interactions have provided insight for developing the UCs and requirements (WP2 and 4) as well as the business models (WP10). An evaluation of the LL activities revealed that despite the successful engagements, targets were not fully met with regards to the timeline for carrying out some engagements and interacting with the predicted number of external stakeholders. To address these issues, a new hybrid approach (refining the initially defined methodology) that allows for a broad perspective of overall goals to be combined with the needs of WP and task leaders will be implemented in the LL approach for planning and carrying out engagements. Additionally, to gain more feedback from external stakeholders, several initiatives aimed at building a SYNERGY stakeholder community will begin in 2021. The next version of this deliverable (due in M24 of the project) will provide an update of the completed activities in the LL process, report the status of the SYNERGY stakeholder community, and evaluate the success of the LL methodology through assessing the completed engagements highlighted in the timeline provided in this document and also the value of the feedback generated through stakeholder interactions.



7 Appendices

7.1 Appendix 1: Stakeholder consultation register

Purpose of the document

The stakeholder consultation process will incorporate many activities across a variety of contexts. Therefore, it is essential that each activity is properly monitored and recorded. The “consultation register” below shows the details that may be required to be documented to ensure smooth feedback loops are established between stakeholders and project partners and also for reporting purposes. After each stakeholder engagement activity, please send the GECCO team the table below filled in with the relevant information.

Partner	SYNERGY project partner leading the engagement activity
Relevant Work Package / Task / Deliverable	Please link the stakeholder engagement activity to a specific Work Package / Task / Deliverable
Engagement method	Please describe the engagement method(s) e.g. Seminar / workshop / focus group / interview/ email / negotiation game (non-exhaustive list)
Date	Date the engagement activity took place
Stakeholder group(s) *	Describe the type of audience which attended the event *
Points of contact	Stakeholder name(s) and contact details AND/OR organisation(s)
Size of audience	How many people did you engage in this particular event
Coverage	Local / regional / national / European level / Other
Purpose of the engagement	Please describe as precisely as possible the purpose of the stakeholder engagement
Outcome(s) of the engagement	Please describe succinctly the learnings of the engagement - were the initial aims/questions of the task addressed? (100-200 words)
impact to the project	Please describe how this will impact the project - this refers to how the feedback gained will be utilised in SYNERGY, how/where the feedback will be shared with the consortium, which WPs or solutions need to be informed (100-200 words)
Feedback questions expressed by audience	Write any comment you received from the audience that you consider useful and explain how the consortium should utilise this (50-100 words)



Possible follow-up / outcomes

Write about any follow-up / post-meeting you have arranged with the stakeholder(s) - also what are you sharing with the SH (e.g. sending them summary of interview, deliverable where info used)

* To ensure consistency across engagement activities and facilitate later use across work packages, please refer to the Task Identification Questionnaire on how to categorise Stakeholder groups (GECO can provide this document if needed)

