



D7.7 Eco-Bot Roadmap

RISA
June, 2021

www.eco-bot.eu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 767625

D7.7: Eco-Bot Roadmap

Summary

The current document is the output of the final WP of the project “Eco-Bot” and presents a strategic long-term plan for future development and commercialization of the “Eco-Bot” tool for a 5-yr period after the end of the project. The analysis and identification of exploitable outcomes was executed gradually through workshops, online meetings and focus group discussions. With regards to the joint exploitation, at the end of the project life, the project’s consortium will be dissolved and most of its partners will form a new joint-venture in order to implement a number of scheduled activities for the future of the product and especially its introduction to market. The activities can be distinguished into three groups: technical, marketing and operational, and are assigned to each partner by field of expertise. Herein, a brief description of all activities is presented along with their timely allocation and the corresponding milestones to be achieved. All the above are also depicted on a visual roadmap. Finally, the document discusses the replicability of pilot applications and ends with some thoughts for better consumers’ engagement.

DELIVERABLE NUMBER

D7.7

WORK PACKAGE (WP)

WP7

LEAD BENEFICIARY

RISA

DELIVERABLE AUTHOR(S)

Ulrich Hussels
Stephanos Camarinopoulos

QUALITY ASSURANCE

Reviewer 1: Dora Karali
Reviewer 2: Nikos Ipiotis

ERRA
PLEGMA

PLANNED DELIVERY DATE

30/06/2021

ACTUAL DELIVERY DATE

09.01.2021

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- PP = Restricted to other programme participants
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List of Acronyms and Abbreviations

B2B: Business-to-Business

B2B2C: Business-to-Business-to-Consumer

NILM: Non-Intrusive Load Monitoring

WP: Work Package

1. Introduction

Eco-Bot constitutes a personalized energy saving assistant (tool) for both residential and professional application (e.g., facility managers) providing real-time information and communication regarding energy-related issues via a practical chat interface. The tool was developed under the project “Eco-Bot” funded by EU under Horizon 2020. For the development of the tool, recent advances in chat-bot technology were combined with non-intrusive appliance load monitoring techniques (i.e., energy disaggregation algorithms using purely software tools) using low-resolution smart meter-type data. The main objective of the Eco-Bot tool is to engage both residential and commercial energy consumers to better monitor their energy consumption, needs and efficiency, along with increasing their awareness regarding energy saving aspects. Towards those objectives, the tool’s interface is characterized by a user-friendly design and tailor-made personal content.

For the exploitation of Eco-Bot, series of exploitation workshops along with desktop research and validation activities were conducted with the participation of relevant stakeholders and (current or potential) users during the implementation of the project. The outputs of the above activities are listed in the final deliverables of the project and can also be utilized in forming a strategic plan for further (and future) advancements of the developed tool after the end of the project and dissolution of the consortium.

1.1. Objectives of the WP

The objectives of WP7 are:

- To clearly identify the value proposition of Eco-Bot.
- To understand the markets in which the Eco-Bot tool will be operating, in terms of structure, segmentation, size, trends and competition.
- To define the business models that will be exploited.
- To develop roadmaps for a successful and sustainable commercialisation of Eco-Bot.
- To agree on a plan for sustaining necessary visibility actions for the future of the Eco-Bot community and the platform, and for the leverage of new market opportunities both inside and outside of Europe.

To achieve these objectives the following main tasks were undertaken:

- Market research and analysis,
- Business model analysis,
- Organisation of workshops with key stakeholders,
- Development of an exploitation roadmap.

The outcomes of the market analysis and business models’ analysis both form key inputs for the development of the sustainability roadmap. The organisation of multiple workshops with

stakeholders in the field apart from the Eco-Bot pilots helped reinforcing this roadmap with valuable input and innovative proposals. The outcomes are reported in a number of previous deliverables, including D 7.3 - Eco-Bot exploitation Strategy Revision 3, D7.4 - Market Analysis and D7.5 Report on Market Environment.

1.2. Purpose and scope of this document

The purpose of the current deliverable is to consolidate the outcomes of the work carried out under WP7. All tasks of WP7 contribute to this final analysis which aims to facilitate the business development by outlining a long-term roadmap. By roadmap, we refer to a plan that describes the short, medium and long-term activities that should be undertaken for the exploitation of the pilots and tools developed during the Eco-Bot project. The strategic plan for further advancement and exploitation of the Eco-Bot achievements especially during the first five years after the end date of the project and consortium's dissolution aims to ensure a common approach and to facilitate the market uptake.

1.3. Structure

The deliverable is structured as follows:

Chapter 2 presents the systematic approach followed for the exploitation of the project.

Chapter 3 presents all the scheduled actions to be undertaken for further development and promotion of the project, especially during the first five years after project's end. A detailed description of all actions will be given along with the responsibilities of the members of the Eco-Bot consortium that will be involved in the long-term exploitation and a graphical representation in a roadmap. This roadmap actually fulfills the project "Eco-Bot" Task's 7.5 objective.

Chapter 3.2.4 discusses the replicability of the pilot use cases and the exploitation of results in other contexts.

Chapter 5 provides some ideas for further development of the tool, especially under the framework of future research projects.

2. Systemic approach of exploitation

To maximize the impact of the project, we followed since the beginning a systematic approach towards exploitation that includes multiple possibilities and options. Exploitation may refer to a result, a partner or a pilot use case.

The Key Exploitable Results (KERs) can be found in Annex I for completeness. Linked to partners, the results may be exploited individually or in combination after the project's lifetime.

The exploitation plans for individual partners, as presented in Chapter 10 of D7.3, refer to future research and development strategies, help create economic value and ensure the continuity of the project results beyond its completion.

KER1, the "Eco-Bot package" that is the combination of all KERs has already been deployed in the pilot use cases. Those pilot cases demonstrated the solution in multiple markets and needs. The results are the initial proof of the project's value and of the scalability of the solutions beyond the end of the project. The possibility to expand the pilot application or deploy the solution in a similar or different context shows that the value brought by the project can be continued in the future.

2.1. Validation

The validation of the KERs as possible tools and methods, new knowledge or the base for new cooperation was done through numerous events that brought together project partners and external stakeholders.

The validation exercises are listed in Annex II and refer to the exchanges that the consortium had with external relevant stakeholders during the last eight months of the project. These interactions provided valuable feedback and insights on how the KERs can be exploited in different contexts and sustained in the long-run and helped refine the detailed roadmap for the "Eco-Bot package" post-Eco-Bot.

The workshops verified the value of the KERs, the business models and the pricing strategy. The following list highlights the most interesting propositions that have been taken into consideration for achieving optimal results.

- Utilities can use Eco-Bot solution to present themselves as a modern and innovative service providers, hence retain their customers. In this context, Estabanell can sustain the use of Eco-bot as a non-paying add-on after the end of the project.
 - It is important to formulate the UVP in sales pitches correspondingly

- Utilities can use Eco-Bot solution as a direct channel of communication with end consumers thus increasing customer satisfaction and decreasing work load of customer support staff
- Stay in close contact with DEnBAG to extend cooperation, disseminate knowledge about the Eco-Bot package and win potential clients
- Follow-up with Discovergy, Co2online and Greek utilities after the project ends, as they are interested/potential clients
- Apply the concept for water utilities in the mid-term future

Further engagement with this network of stakeholders, listed also below will be pursued once the project is over to push the commercialization of Eco-bot and create synergies, as described in the roadmap of the next chapter.

Network of Stakeholders
DEnBAG – a Support Service provider to Energy consultants & companies that want to introduce energy management systems
Association of German utilities (ASEW)
OEM (Discovergy)
Energy management software provider (DEXMA)
23 different German utilities e.g. Stadtwerke Scharnbeck, Stadtwerke Rostock etc.
4 different Greek electricity producer and resellers (Protergia, Elpedison, WATT+VOLT, HERON)
2 International consulting companies (PWS, Deloitte)
Co2online

3. Eco-Bot's Roadmap

The objective of the last task of the “Eco-Bot” project was the construction of a roadmap for consumers’ engagement post-Eco-Bot. As presented in the next sections, we considered the options of single partner exploitation but also the joint exploitation, for which a detailed action plan has been prepared. The roadmap will present a detailed list of the planned activities, future steps and milestones for a suitable and effective commercialization of Eco-Bot and promotion in the context of European policy with focus on a 5-yr period (commercialization phase) after the end-date of the project.

3.1. Single partner exploitation

The exploitation of a result can be assumed by a single partner, especially when he is the owner of the result. It will be the case for most of the project results as it is the most simple. The IPR ownership per partner for each one of the five KERs is confirmed and finalised in D7.3, as are also the individual plans per partner.

3.2. Joint exploitation

The Eco-Bot project has progressed towards its exploitation and decided the collaboration terms between partners for the exploitation of KER1, the “Eco-Bot package” as the most promising and complete asset. To this end, a joint venture will be created as described in the next section.

3.2.1. The Team

During the project phase, a number of companies and institutions formed the consortium which implemented the project objectives and produced the “Eco-Bot” tool. After the end of the project phase, the consortium will be dissolved. However, the members of the consortium will form a joint venture that will replace the consortium and will be called herein as “the team”.

“The team” will include all the technical and commercial partners that contributed to the production of the “Eco-Bot” tool. The main task of “the team” will be to handle the technical, sales/marketing and operational tasks during the phase of commercialization of the tool that will succeed the conclusion of the project, especially during the first five years after project’s end date.

The members of “the team” are presented in Table 1. For each of the members, a list of the main duties and activities during the exploitation and commercialization phase of the “Eco-Bot” tool is presented. Key assets of “the team” constitute the members’ diversity and breadth in expertise. Those characteristics ensure that all the tasks and challenges associated with a successful exploitation of the tool will be allocated to the best suited member.

Table 1: Members of “the team” and roles

Name	Role
Dexma	<ul style="list-style-type: none"> • Contributions to marketing Eco-Bot • Sales and marketing activities on the Spanish market • Integration with existing energy efficiency & monitoring platforms
Erra	<ul style="list-style-type: none"> • Lead on marketing/sales activities • Sales activities in the Greek market; develop a methodology to approach enterprise clients to be used by other partners • Eco-Bot frontend customization and localisation



Name	Role
	<ul style="list-style-type: none">• Support technical maintenance and integration of Eco-Bot
Estabanell Energía	<ul style="list-style-type: none">• Support marketing & sales activities in the Spanish market and the European market via ASEME and GEODE• Produce marketing material• Further integration testing
Plegma Labs	<ul style="list-style-type: none">• Lead on technical integration and maintenance of Eco-Bot• Support marketing Eco-Bot• Sales activities (focus on the Greek market)
Risa	<ul style="list-style-type: none">• Support sales/marketing activities on German and Greek market• Coordinate cooperation within joint venture• Lead on operational/organizational matters of joint venture
Senercon	<ul style="list-style-type: none">• Lead sales activities on German market• Support marketing activities, produce marketing material• Integration with existing energy efficiency & monitoring platforms
University of Economics in Katowice (academic institution)	<ul style="list-style-type: none">• Support integration and customization of Eco-Bot by adjusting behavioural model /survey

Name	Role
University of Strathclyde (academic institution)	<ul style="list-style-type: none"> • Licencing the NILM algorithms • Support integration and maintenance of Eco-Bot • Provide data server

During the commercialization phase, each member of “the team”, will be assigned with specific tasks according to its expertise. The actions that are planned during this phase can be categorized into three groups: a) Technical Activities, b) Marketing/Sales activities and c) Operational Activities and are detailed in the following sections.

3.2.2. Technical Activities

Technical activities cover all the required actions for the improvement and upgrade of the technical characteristics of the “Eco-Bot” tool. According to the plan, Plegma Labs will be leading the efforts for the implementation of the technical activities. Supporting partners include Erra, University of Economics in Katowice and University of Strathclyde.

A detailed list of the scheduled technical activities and their (proposed) timing is presented below:

- *July 2021 – December 2021: **Make the system ready for new clients***
 - Scaling system backend for next tier of multiple users
 - Fine tuning algorithm with new regional data for NILM
 - Preparing system for deep integration (for example with billing/CRM)
 - Prepare extensive technical manuals for client IT departments
 - Preparation of training material of local software
 - Fine tuning system to port to faster/better hosting
 - Fine tuning behavioural model process to need less user input
 - Consider implementation in open source chatbot framework
 - Consider ability to register smart meters directly to the backend
 - Integrate additional smart meter vendors

- *February 2022 – December 2022: **Additional features and fine tuning***
 - Mobile integration & allow push notification

- Social media and skype integration
 - New feature development (new requests from clients)
 - Translation to new languages (Greek, Polish, Italian)
 - Refinement of the open source implementation
 - Ability for authentication via single sign-on (SSO)
 - Fine tuning behavioural model process to need less and more integrated user input
 - Fine tuning algorithm with new regional data for NILM
- *January 2023 – December 2023: **New platform version and additional feature***
- Launch of multiplatform Eco-Bot 2.0 with new NILM & new behavioural model
 - NILM renewables within EU

The plan also includes a number of technical milestones:

- **Milestone 1 – December 2021:** System capable of hosting number of clients for commercial roll-out
- **Milestone 2 – December 2022:** Completed mobile integration and integration of social media and Skype, new languages available
- **Milestone 3 – December 2023:** Successful launch of Eco-Bot 2.0

3.2.3. Marketing/Sales Activities

The “Eco-Bot” tool targets into two groups of consumers: residential and professional. Thus, the marketing strategy is divided into two different business models. The first business model refers to B2B2C and will be mainly implemented by Erra, Risa and Senercon. The second business model refers to B2B and will be implemented by DEXMA.

The activities that are scheduled for the two business models are presented in the following lists:

Marketing and Sales activities for B2B2C

- *October 2021 – December 2021: **Creation of marketing material** (all partners)*
 - Creation of training material
 - Pre-sales documentation
 - Content for social media
 - Sales material / flyers for offline sales meetings
 - Creation of demonstration video
- *October 2021 – March 2022: **Update market research** (Erra, Senercon)*
 - Develop PESTEL – analysis

- Develop Five-Forces analysis
 - Revalidation of market access strategy and re-adjustment
- **October 2021 – March 2024: Launch of marketing & sales campaign for B2B2C markets in Greece and Spain** (all partners under the lead of Erra)
 - Outbound / inbound marketing campaign
 - Organisation of webinars/face-to-face sales meetings for potential customers
 - Promotion of Eco-Bot at industry-specific trade shows
 - Onboarding of potential clients in webinar sessions
 - Adaptation of marketing material by including findings and testimonials of clients
 - **March 2022 – July 2023: Launch of Senercon-lead marketing activities in Germany** (Senercon)
 - Sending out marketing information to the existing network as well as to the six big energy market players and to the German utility associations 8KU, ASEW and VKU
 - Promotion of Eco-Bot at industry-specific trade shows: ISH, Smart City Expo World Congress, Berliner ENERGIETAGE
 - Onboarding of potential clients in webinar sessions
 - Evaluation of findings of German utility customers
 - Adaptation of marketing material by including findings and testimonials of clients
 - **January 2022 – July 2024: Preparation and expansion to other markets** (leader: Erra)
 - Collection of feedback from users (interviews, surveys) and communication of new functionalities to users.
 - Creation of case studies, guides and whitepapers for new target segments.
 - Expansion to other markets (research and identification of potential customers).

Marketing activities for B2B

DEXMA is responsible for the exploitation of Eco-Bot in B2B markets, thus the activities regarding the B2B plan will be led by DEXMA:

- **July 2021 – September 2021: Refinement of pricing strategy for target segments**
- **September 2021 – December 2021: Creation of marketing material**
 - Creation of training
 - pre-sales documentation

- content for social media
 - sales material for offline sales meeting
- *September 2021 – June 2022: **Launch of initial marketing campaign***
 - organisation of webinars for potential customers
 - sending newsletters to subscribers
 - assistance to sectorial conferences / events
 - Sales team contacts existing DEXMA's customers and inbound leads
 - *December 2021 – June 2023: **Update market research***
 - Develop PESTEL-analysis
 - Develop Five-Forces analysis
 - Expand European market research and identification of new target markets
 - Collection of feedback from users (interviews, surveys) and communication of new functionalities to users
 - *July 2022 – December 2023: **Expansion to other markets***
 - Creation of case studies, guides and whitepapers for target segments
 - Research and identification of potential customers

The marketing strategy includes specific milestones which premise the successful implementation of the corresponding activities. The marketing milestones are the following:

- **Milestone A – December 2021:** 1000 consumers in Germany, Spain and Greece are ready to use Eco-Bot by the beginning of 2022.
- **Milestone B – February 2022:** one major utility out of the German 8KU association and three communal owned utilities are ready to launch pilots of Eco-Bot with (selected) customers.
- **Milestone C – October 2022:** 50% of DEXMA's partners (around 80 companies, mostly ESCOs and some utilities) have been pitched the Eco-Bot solution
- **Milestone D – February 2023:** Three other major clients with a total of 7000 clients have launched Eco-Bot.
- **Milestone E - April 2024:** At least 25 of DEXMA's partners are using the Eco-Bot solution.

3.2.4. Operational Activities

The operational activities include all the scheduled activities regarding the operation of the joint venture (“the team”) and the working procedures. A detailed list of the operational activities and their corresponding timing is provided below:

- **September/October 2021: Definition of a memorandum of understanding (MoU)** (Risa)
 - A MoU will be defined for the joint venture with roles and responsibilities, including contractual agreements with UEKAT and USTRAT w.r.t. using NILM and behavioural model.

- **September/October 2021: Set up internal financial framework of revenues/profits** (Risa)
 - In relation to ownership of Eco-Bot

- **October 2021: Virtual/physical Meeting to establish working procedures of joint venture** (Risa)
 - Regular meetings to exchange on status quo and needs for readjustment of plans/strategies every 3 months

- **November 2021: Updating session of the Business Model Canvas** (Risa)
 - The updating session will consider early feedback from the market and the evolution of Eco-Bot
 - The activity will be executed twice a year

The operational milestone is the following:

- **Milestone I – October 2021:** MoU, financial framework and working procedures definition.

All the aforementioned activities of the three groups are depicted on the visual roadmap of Figure 1 , which constitutes the main objective of Task 7.5 of the project. This plan summarises the team's suggestions to ensure that Eco-Bot results are taken up by relevant stakeholders after the project lifetime.

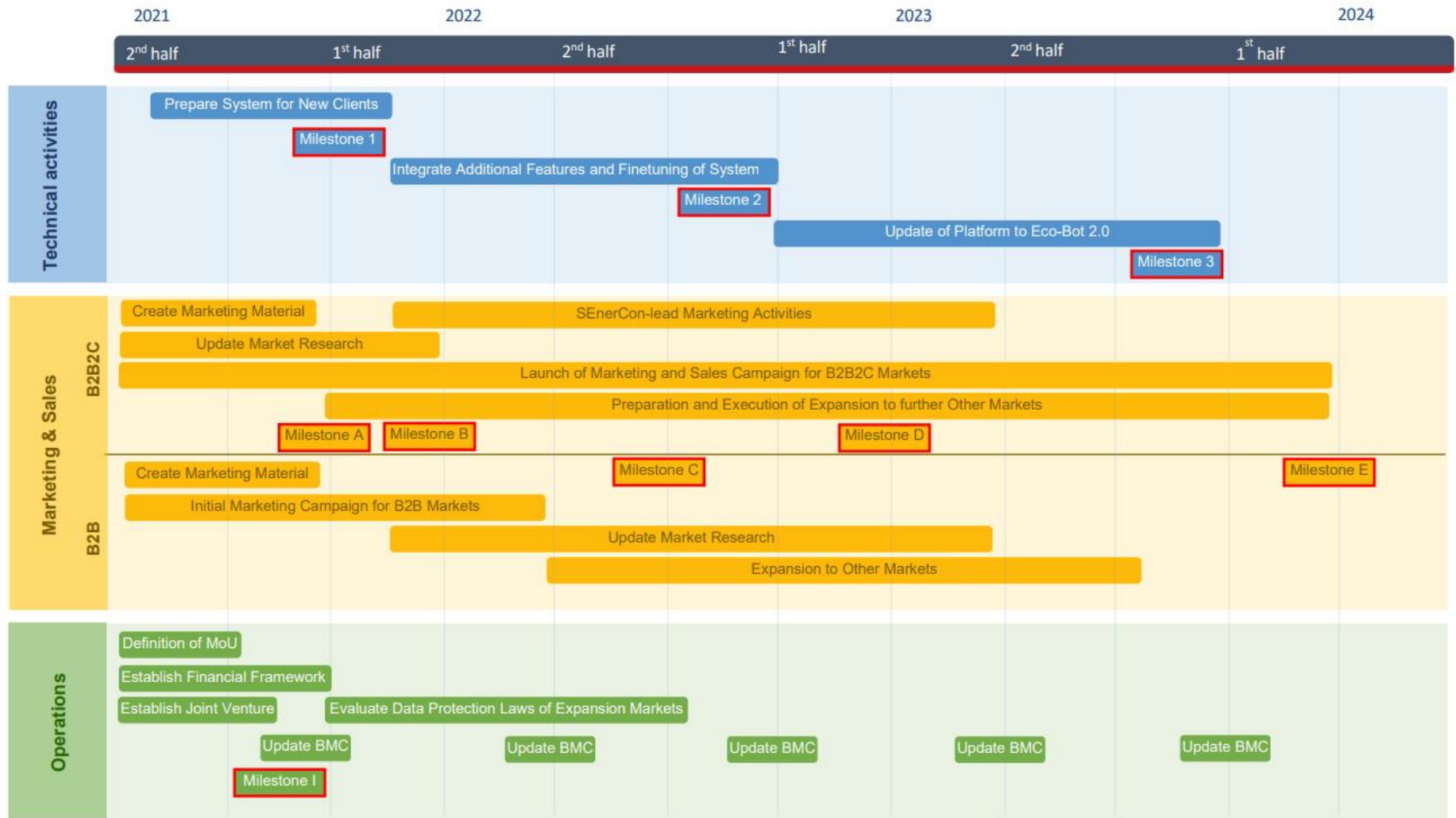


Figure 1: Eco-Bot Roadmap

4. Replicability of the pilot applications

With the pilot activities of three Eco-Bot use cases; EYPESA, SenerCon and DEXMA, the “Eco-Bot package” has been tested in real market environment, revealing barriers and challenges. It has proven generally useful for both residential and professional consumers as documented D5.5 - Validation Results including Lessons Learned and societal impact and can be replicated in other environments taking into consideration the lessons learnt and the recommendations resulting from the pilots as documented in D7.5 - Report on Market Environment.

The operation of Eco-Bot was directly and indirectly influenced by diverse markets and regulations since the pilots operated in different countries – UK, Germany, Spain and Italy – fact that forced compliance with EU and diverse national rules. According to the outcomes and the findings in D7.3 - Eco-Bot exploitation Strategy Revision 3, the most promising markets for the first introduction of Eco-Bot are Germany, Spain and Greece.

Key points for the successful application of the tool include:

- Access to consumption data with increased frequency, not only monthly for billing purposes.
- High granularity of consumption data collection, for achieving better NILM results.
- The seamless incorporation of the application into the user's daily processes.
- Personal communication to motivate users for participation and to receive feedback.
- Exchange with smart meter companies can enhance successful market roll-out.
- The use of local language positively influence continuous use of the bot.

Application in another context

Feedback from relevant stakeholders in the workshops organized reinforced our belief that the Eco-Bot concept remains of interest for the energy sector. Even when barriers exist, like for example delays in the standardisation of smart meters, the advice was to investigate the possibility to apply the concept to water utilities.

5. Further Ideas

The ultimate scope of the joint venture (i.e., “the team”) will be the introduction of the “Eco-Bot” product into market and a wide consumer engagement. For this reason, all partners, except for the aforementioned activities presented on the roadmap, should perform additional actions for a successful dissemination of the product with focus on the energy market needs.

At this point, it should be pointed out that the dissemination activities will be moved from a research-oriented framework to a product-oriented one. In other words, after the project’s end and during the additional 5-yr development period, the product should be ready to be launched on market.

A first step in order to boost marketing efficiency may be aggressive advertisement campaigns organized especially by the partners of “the team” responsible for marketing activities, such as Erra for B2B2C in Greece and Germany and DEXMA for B2B in Spain. Nevertheless, dissemination and marketing activities should not be limited only to countries used in the project as pilots. Thus, a wide dissemination activity may be initiated by all the partners with initial focus on potential stakeholders (e.g., clients) included already in their current network. For this reason, a strategic plan with a detailed funding scheme should be created. Furthermore, toward this objective a good idea may be the cooperation of “the team” with a company specialized in the field of marketing (e.g., advertising company).

Specific interest should be first given across whole Europe (not only countries included in the project). The key advantage of the “Eco-Bot” product that may be always highlighted should be its utility towards efficient and smart energy consumption. The latter constitutes a major objective for all European countries, especially under EU frameworks regarding energy policies and climate change.

Apart from European countries, the “Eco-Bot” product should be introduced in additional large markets such as the USA and Asia. Regarding Asia, focus may be given in emerging markets such as China and India, where the increase in population and the economic growth along with improvement in quality life have boosted energy demands. Thus, those markets may provide appropriate stakeholders highly interested in smart energy applications such as the “Eco-Bot” product. For this reason, all the partners of “the team” would be highly benefited by expanding their network with those countries and identify potential stakeholders (clients). In attracting potential clients in those countries, possible dissemination activities may be planned in international venues (physical or online), especially when they are organized by those countries.

Nevertheless, it should not be ignored that the introduction of the product in the emerging markets of Asia, may require extra efforts and funds for modifications and adjustments of the tool in order to meet those populations’ needs, such as the use of additional languages and/or

local dialects, and adjustments to local demographics and lifestyle taking also into account the local economic and climate conditions.

A major dissemination channel constitutes the website of the “Eco-Bot” project. However, after the end of the project, the website should change profile and move from the research and development orientation (i.e., presenting a product under research) to a product phase (i.e., selling a product in the market). For this reason, it is very important the development of an appropriate and easily accessible website (even by poorly experienced users) that will provide a comprehensive presentation of the product, its specifications and the needs that it can cover on an appropriate way that will attract users attention and lead them to purchase.

Last but not least, “the team” should also invest in a customer service of high quality. Organized channels of customer service available in all user languages of the “Eco-Bot” tool should be developed. Besides, in combination with quality, an effective and easily accessed customer service is a very important asset for any product or service and can lead to further customer engagement.

6. Conclusion

The Eco-Bot project has produced a significant number and range of exploitable results in the form of i) concrete outputs and prototypes that can be used in combination or not; ii) methodologies for application in different contexts and iii) partnerships that would potentially encourage the expansion of networks. The roadmap expanded in this deliverable will help the readers, whether they are project partners, project evaluators or external stakeholders, understand the exploitability of the results and the foreseen steps towards it. As a public document, this deliverable will be published on the project website and will be accessible to all stakeholders to use in drawing conclusions on the actions required for utilising Eco-Bot in their contexts.

Annex I: IPR Ownership

KER		Percentage of IPR (%)								
No	Short Description	RISA	EYPESA	ERRA	adelphi	SEC	DEXMA	USTRAT	PLEGMA	UEKAT
1	Eco-Bot “package”	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
2	Software Residential NILM							100		
3	Software Commercial NILM							100		
4	Eco-Bot backend /expert system								100	
5	The chat bot (software/frontend)			100						

Annex II: Validation meetings with external stakeholders

Type of Stakeholder	Date/Occasion	Topic	Comments
DENBAG – a Support Service provider to Energy consultants & companies that want to introduce energy management systems	October 2020 – June 2021 / Eco-Bot Webinar & bilateral exchanges	UVP of Eco-Bot	Interest in including Eco-Bot within their hub of energy efficiency https://eneff-wiki.com/ - a knowledge and exchange platform for energy consultants and providers of energy-efficient solutions; Eco-Bot sub page registered + published in June 2021
Association of German utilities (ASEW)	November 2020 / Eco-Bot Webinar		Eco-Bot is of interest and an intriguing concept that should be shown to all interested members in a webinar/workshop
OEM (Discovery)	February 2021	Eco-Bot Acceptance with Discovery users	<ul style="list-style-type: none"> Exchange on the user satisfaction of Discovery Users using Eco-Bot. Planning of a dissemination strategy to engage more Discovery users using Eco-Bot.



			<ul style="list-style-type: none"> • Possible proof of concept; Eco-Bot is a valuable proposition for Discovery users in the future.
Energy management software provider (DEXMA)	January 2021 / telephone interview	UVP for B2B and Pricing Model of Eco-Bot	Product Director Daniel Utges provided comments and validated the final pricing model as realistic
23 different German utilities e.g. Stadtwerke Scharnbeck, Stadtwerke Rostock etc.	April 2021; ASEW webinar on chatbots for German utilities	Validation of Eco-Bot's costs and UVP by the utilities	Utilities certified that Eco-Bot is useful in providing better/faster/direct service to end consumers and that it can help improve a utilities' image; the installation of a bot of a German utility with less features costs 20k
End users and employees of Spanish pilot	User interviews with Estabanell clients/customer support staff in 2021	Functionalities and UVP of Eco-Bot	Estabanell users expressed that Eco-Bot allows them to have their energy consumption under control and to avoid surprises the moment the bill arrives, which was a relief from stress for the users; and provided a better user experience when using electricity. It was reported that Eco-Bot also allowed the users to take concrete decisions and action to save money. Customer support employees of Estabanell highlighted that Eco-Bot can help their end-consumers to understand the monthly bill, making end consumers more satisfied and save time of customer service employees.
End users from German pilot	Interview/email feedback in spring 2021	Functionalities of the bot	Users evaluated the features of Eco-Bot, "favourite" feature": the effect of energy saving



			measures after a certain time-period & and the evaluation of the cost-benefit of purchasing a new appliance; air-conditioning tips were deemed unnecessary for Germany as residential users mostly don't have HVAC systems installed at their homes.
End users from German pilot	February – April online onboarding sessions with existing Eco-Bot users using screen sharing	Functionalities of the bot and UVP in combination with IESA	The online sessions were carried out with 41 users. The feedback was mainly positive, Eco-Bot seen as a valuable tool to assess the users' residential energy consumption. Mostly seen complementary to the exiting energy monitor iESA. Some Software Bugs however sometimes led to frustration.
Facility Managers of Spanish pilot Spain	Interviews and email feedback in 2021	UVP and functionalities	Users mostly liked the quickness in which KPIs can be obtained, the customised recommendations, the chatbot's user-friendliness and many other features, such as the virtual load disaggregation. Many of the demo users noted that the recommendations needed to be refined but insisted on receiving recommendations more frequently.
4 different Greek electricity producer and resellers. Protergia, Elpedison, WATT+VOLT, HERON	April 2021	Validation of Eco-Bot's costs and UVP by the utilities	Utilities certified that Eco-Bot is useful in providing better/faster/direct service to end consumers and that it can help retain customers.
2 International consulting companies (PWS, Deloitte)	April 2021; Presentation of Eco-Bot to the	Functionalities of the bot, UVP and	Certified that Eco-Bot is useful in providing better/faster/direct service to end consumers and that



	directors of technology	Pricing Model of Eco-Bot	it can help retain customers. However, expect large delays for smart meters to become standard. They advised us to investigate the possibility to apply the concept to water utilities.
Real Estate Company (BARNES International Realty)	May 2021 Physical workshop	Functionalities of the bot and collaboration opportunities over sustainable development	Certified that Eco-Bot could be very useful tool for short term rentals.
Co2online	February online meeting with the CEO	UVP; Pricing Model; Discussion of a usage beyond the project lifetime	The CEO of co2online affirmed the strong interest to use Eco -Bot beyond the project lifetime. The main barrier for such a usage could be to elevated costs. Co2online as a NGO relates on low-costs services as their online energy consultancy to the final user is free of charge.