



**OPTIMISED ENERGY EFFICIENT DESIGN
PLATFORM FOR REFURBISHMENT
AT DISTRICT LEVEL**

Optimised Energy Efficient Design Platform for Refurbishment at District Level
H2020-WORK PROGRAMME 2014-2015 – 5. Leadership in enabling and industrial technologies
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D7.9: Report on workshops and training activities

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Table of Content

Executive Summary	7
1 Introduction	8
1.1 Purpose and target group	8
1.2 Contributions of partners	8
1.3 Relation to other activities in the project	8
2 Exploitation Workshops	10
2.1 Contributions of partners	10
2.2 Purpose and contents of the Exploitation Workshops	10
2.2.1 Workshop 1 (Chania)	10
2.2.2 Workshop 2 (Brussels)	12
2.2.3 Workshop 3 (Brussels)	13
2.2.4 Workshop 4 (London)	15
2.2.5 Workshop 5 (Anglet)	17
2.3 Summary and feedback of the workshop activities	18
3 Trainings	20
3.1 Contributions of partners	20
3.2 Purpose and contents of the trainings	20
3.2.1 Training 1. (Lund)	21
3.2.2 Training 2 (San Sebastian)	21
3.2.3 Training 3 (Trento)	22
3.3 Summary and feedback of the trainings activities	22
4 Conclusions	26



List of Tables

Table 1: Contribution of partners	8
Table 2: Relation to other activities in the project.....	8
Table 3: Contribution of partners to OptEEemAL exploitation workshops	10
Table 4: Agenda for Exploitation Workshop 1 (WS1).....	11
Table 5: Agenda for Exploitation Workshop 2 (WS2).....	13
Table 6: Agenda for Exploitation Workshop 3 (WS3).....	14
Table 7: Agenda for Exploitation Workshop 4 (WS4).....	16
Table 8: Agenda for Exploitation Workshop 5 (WS5).....	17
Table 9: Contribution of partners to OptEEemAL trainings.....	20
Table 10: Quantifiable feedback from the general trainings in Lund, San Sebastian and Trento.....	22
Table 11: Quantifiable feedback from the technical trainings in Lund, San Sebastian and Trento ...	23



Abbreviations and Acronyms

Acronym	Description
OptEEmAL	Optimised Energy Efficient Design Platform for Refurbishment at District Level.
D	Deliverable
M	Month
ACC	ACCIONA Infraestructuras
ARG	ARGEDOR Information Technologies Ltd.
CAR	Fundación CARTIF
DTN	Distretto Tecnologico Trentino SCARL
ES	Expert System S.p.A.
FSS	Fomento de San Sebastián
FUNITEC	Fundació Privada Universitat i Tecnologia
LUND	Lunds Kommun
NBK	Nobatek/Inef4
SEZ	Steinbeis-Europa-Zentrum
TEC	Fundación TECNALIA
TUC	Research Committee of the Technical University of Crete
UTRC-I	United Technologies Research Centre Ireland, Ltd.
WP	Work package
WS	Workshop

Executive Summary

The present deliverable provides an overview about the general methodology followed in the development and implementation of the OptEEmAL internal exploitation workshops carried out over the course of the project and the external general and technical trainings reported in D6.3 Report on stakeholders and IPD implementation to demonstrate the OptEEmAL Platform.

To ensure a proper management and sharing of the data, information and knowledge during and beyond the OptEEmAL project, exploitation issues needed to be discussed early in the process and throughout the project. This was crucial with regards to the appropriate use of the project results in further research activities and in developing, creating and marketing the OptEEmAL Platform and other results. To this end, an IPR webinar and several exploitation workshops were implemented by SEZ with the participation of all project partners. During these workshop, partners identified exploitable results and their stakeholders, and started defining business models for specific exploitable results.

The OptEEmAL trainings were an essential part of the project's dissemination and exploitation activities and carried out under the lead of NBK in collaboration with the three demonstration site partners DTTN, FSS and LUND to provide local dissemination events. Organisational support was provided by CAR, SEZ and TEC. The training activities consisted of a more general training, providing an introduction to the OptEEmAL Platform, project and context and a more technical training, with more detailed explanations on how to use of the platform. Communication and dissemination materials, such as the produced videos and flyers were used during the training. Participants of the second day OptEEmAL technical training also received a "How to use" guide.

The project partners involved succeeded in attracting the planned target groups of municipalities and their technical offices, as well as industry professionals from energy, architecture and construction companies.



1 Introduction

1.1 Purpose and target group

The purpose of “D7.9 Report on workshop and training activities” is to provide an overview on the main dissemination and exploitation activities performed during the OptEEemAL project.

This deliverable is public and has been prepared upon completion of the all workshop and training activities in M42 of the project. It will inform interested stakeholders in a general manner on the internal exploitation efforts the OptEEemAL project partners took on during the project and the training activities provided to external stakeholders.

1.2 Contributions of partners

The following Table 1 depicts the main contributions from participant partners in the development of this deliverable.

Table 1: Contribution of partners

Participant short name	Contributions
SEZ	Overall content to all sections
NBK	Review of section 3
CAR	Review of deliverable

1.3 Relation to other activities in the project

The following Table 2 depicts the main relationship of this deliverable to other activities (or deliverables) developed within the OptEEemAL Project and that should be considered along with this document for further understanding of its contents.

Table 2: Relation to other activities in the project

Deliverable Number	Contributions
D1.1	The “How to use” guide used during the trainings is an extract of D1.1 E-guide on stakeholders involvement and IPD implementation for the design and execution elaborated in task 1.1 in WP1.
D6.3	All materials used during the trainings are available in the public deliverable D6.3 Report on stakeholders and IPD implementation to demonstrate the OptEEemAL Platform in WP6.
D7.11	This deliverable takes into account the outcomes of subtask 7.4.2 “Management of IP” and D7.11 “Report on Management of IP” and it provides the broad description of the exploitation workshop and training activities.
D7.12	This deliverable takes into account the outcomes of subtask 7.4.2 “Management of IP” and D7.11 “Report on Management of IP” and it provides the broad description of the

	exploitation workshop and training activities Report on Management of IP
D7.13	This deliverable takes into account the outcomes of subtask 7.4.2 “Management of IP” and D7.11 “Report on Management of IP” and it provides the broad description of the exploitation workshop and training activities



2 Exploitation Workshops

A proper management and sharing of the data, information and knowledge (within and across the sectors and various stakeholders) can facilitate the innovation. Data exploitation helps to release its value and leads to a well-informed decision-making. In the framework of the OptEEmAL project, several workshops on the Intellectual property rights (IPR) and the exploitation-related issues have been carried out.

2.1 Contributions of partners

The following Table 9 depicts the main contributions from participating partners in the development and implementation of the exploitation workshops.

Table 3: Contribution of partners to OptEEmAL exploitation workshops

Participant short name	Contributions
SEZ	Organisation and implementation of the workshops, preliminary and preparation activities as well as follow-up and writing and distributing of workshop reports
ALL	Participation in the workshops, feedback

2.2 Purpose and contents of the Exploitation Workshops

Exploitation issues need to be discussed early in the process as they are crucial in regards to the appropriate use of the results in further research activities other than those covered by the respective project, in developing, creating and marketing a product or process, in creating and providing a service, or in standardisation activities. Exploitation can be commercial, societal, political, or serve the improvement of public knowledge and action. Project partners can exploit results themselves, or facilitate exploitation by others (e.g. through making results available under open licenses). It is important for the European Commission that project partners and third parties make use of the results, recognising exploitable results and their stakeholders, and concretise the value and impact of the research and innovation activities for societal challenges.

To ensure a proper management and sharing of the data, information and knowledge during and beyond the OptEEmAL project, it was important to discuss and settle all IPR and exploitation-related issues in consortium and smaller groups of project partners. Therefore, five IPR/exploitation workshops were carried out under the lead of SEZ with all OptEEmAL project partners involved and the outcomes and results of these workshops have been made available to the project partners in the respective workshop reports.

The results of the exploitation activities, market and technology watch activities (D7.10 and D7.12) can be found in D7.13 Roadmap towards the exploitation of project results, which is a confidential document, available only to the consortium partners and the Commission Services.

2.2.1 Workshop 1 (Chania)

2.2.1.1 Purpose of the workshop

The first IPR/Exploitation Workshop (WS1) was preceded by a webinar held on the February 15th, 2016. The webinar touched upon the issues such as the IPR and the potential use of the project

results for the commercial purposes (exploitation). A brief introduction has been given and the first tasks/exercises have been assigned/distributed.

Held on the March 16th (2016), the WS1 has been moderated by Dr. Frederik Metzger from the Steinbeis Europa Zentrum (SEZ). The main idea was to create a baseline for the common understanding of the notions such as the Intellectual Property Rights (IPR), Project Background Knowledge (BG), Project Results (PR) and the Exploitable Results (ER). All of them with regard to the OptEEemAL project. First attempt to define the steps for successful market deployment of the PRs have been made. Moreover, the organisers' intention was to raise the awareness of participants' concerns and uncertainties, to enhance the team spirit, to discuss the expectations and to discover the motivation behind the specific partners' willingness to participate. The overarching goal: to ensure the sustainable action measures and to lever the market potential of the PRs.

2.2.1.2 Agenda and overview of workshop activities

During this first workshop, an introduction to exploitation issues was given and the approach and methodology for all (current and forthcoming) workshops were explained. Rules of participation were presented. The different types of organisation and roles of the partners within the EU project, their probable interests, expectations and the plausible benefits for each partner type were discussed. A specific focus was placed on the strategic meanings of intellectual property, exploitation and an open productive collaboration.

Under the lead of SEZ, the project partners identified the BG, PRs and ERs of the OptEEemAL project and linkages between all of them. The activities led to further discussions on:

- how to tackle the (perpetual/free) licences,
- uncertainty as an inherent part of the project,
- decision-making tools and which results to exploit,
- choice of end-users to address,
- tackling services as the exploitable results,
- retrofitting-related business opportunities,
- contact points for spreading a business idea,
- addressing the conflicts of interest in between the project partners,
- further project partners' cooperation (after the project comes to an end),
- a "Fuzzy" Consortium Agreement: approaches to disambiguation.

The agenda for the first exploitation workshop in Chania is presented below:

Table 4: Agenda for Exploitation Workshop 1 (WS1)

#	Content	Time
1.	Introduction, Expectations	14:30 – 15:10
2.	Getting familiar with Exploitation Issues	15:10 – 15:30
3.	Background Identification	15:30 – 16:15
	Coffee Break	16:15 – 16:30
4.	Project Results and Linkage to Background	16:30 – 17:50
5.	Exploitable Results and Linkage to Project Results	17:50 – 18:20
6.	Summary and End of the Workshop	18:20 – 18:30

2.2.1.3 Conclusions and feedback

WS1 gave the participants (project partners) a chance to share their motivation and to express their expectations towards both – the project and the WS1 itself. It has also been the first step, allowing for getting to know each other better. Most importantly however, WS1 equipped the participants with the basic tools, necessary for the project partners, explained the crucial notions of IP management and clarified the correlations between them. Apart from being discussed on a meta-level, all the matters have been further applied to the context of the OptEEmAL project. That in turn allowed the consortium to set a milestone for the further cooperation. Having defined the expectations, background knowledge, project results and the exploitable project results, it was the first step taken to be sure that the implementation phase becomes viable. WS1 gave the participants a strong foundation to fully benefit from the upcoming workshops.

2.2.2 Workshop 2 (Brussels)

2.2.2.1 Purpose of the workshop

The second Exploitation Workshop (WS2) took place on the 8th of November 2016 in Brussels. It was moderated by Dr. Maria Sol Rau and Dr. Frederik Metzger (SEZ). This time participants were to focus on the issues related to notions such as an ownership and the access rights. Together with the supervisors they were supposed to identify and define the meaning of ownership and to get to know the rules and conditions necessary to access the ERs. As mentioned before, WS2 built upon the findings and lessons learnt during WS1 (Chania, 16th of March 2016). The latter allowed for an introduction of the further matters such as exploitation claims, protection of the results and identification of a value proposition. The importance of the exploitation of project results and its benefits were stressed. Since the partners' exploitation claims were identified, possible exploitation conflicts could be detected and talked through. At the very end, the foundation for discussing the business model canvas has been laid.

2.2.2.2 Agenda and overview of workshop activities

As a first step, the overall structure and the methodology of WS2 as well as its relation to the other workshops were explained. After a short recapitulation of the WS1 results (IPR, BG, PR, ER) and a short summary of the purpose and benefits of the exploitation, the project partners' discussed their expectations regarding the workshop itself and the previously identified BGs, PRs and ERs, and subsequently updated the previously identified ERs. Further, the five most important ERs were selected and the roles of the main and the contributing partners for each of them were explained and discussed. Under the lead of SEZ, the consortium verified links between the BGs and ERs and assigned the missing BGs to the specific ERs.

The experts also elaborated on the various exploitation claims (ways of dealing with the ERs beyond the time scope of the project, i.e. commercialising the results, performing further research, licensing, performing consultancy etc.) and labelled the ERs according to a scheme specifying these exploitation intentions. This scheme and the outcomes of the workshop were available to the partners in the respective workshop report.

After being provided with relevant definitions regarding ownership and protection of the ERs by SEZ, the partners reflected on the scope (implementation, internal research, exploitation) and access to BG, PRs to modify their claims accordingly.

Potential IPR conflicts were identified and solutions discussed for four specific ERs (see workshop report).

After an introduction to the main elements of the Business Model Canvas by SEZ, the partner identified the three elements: customer segments, value proposition and the key partners for each of the mentioned ERs.

The agenda for the second exploitation workshop in Brussels is presented below:

Table 5: Agenda for Exploitation Workshop 2 (WS2)

#	Content	Time
1.	Introduction to the workshop	11:30 – 11:50
2.	Recapitulation: exploitable results from WS1	11:50 – 12:10
3.	Exploitation claims	12:10 – 13:00
	Lunch break	13:00 – 14:00
4.	Exploitation Strategies / Property and Access Right	14:00 – 14:30
5.	Business Model Canvas	14:30 – 15:00
6.	Wrap up and next steps	15:00 – 15:30

2.2.2.3 Conclusions and feedback

All planned activities were carried out successfully. An updated list of the BGs, PRs and ERs was created and used to discuss the future plans of the participants with regard to the ERs.

After identifying the exploitation claims it turned out that the following ERs are of the highest interest to the partners:

1. OptEEmAL platform,
2. ECM Catalogue,
3. Visualisation Interfaces,
4. Interoperability Framework.

During WS2, the ownership claims of the partners as well as potential conflicts thereof were discussed. The participants eventually came to the conclusion that it was simply too early to fully clarify the ownership related issues. They stated that the participation of all the consortium members would be highly recommendable at a later point in time in order to find the proper solution of the possible conflicts. Taking this into account, SEZ offered to schedule an extra time for the reconciliation activities and exercises.

An introduction to the business model canvas and initial definition of the main elements within the OptEEmAL context served as a basis to build upon during the next workshops.

2.2.3 Workshop 3 (Brussels)

2.2.3.1 Purpose of the workshop

The third exploitation workshop (WS3) was moderated by Dr. María Sol Rau and Nathalie da Silva (SEZ) and carried out with the active involvement and input of the project partners. After the definition of BG, PRs, ER, exploitation claims and initial exploitation strategies, the purpose of this workshop was to provide the project partners with a deeper understanding of the potential business model for the OptEEmAL ERs.

With the help of several activities, the project partners defined and examined different elements of a business model such as the value proposition, customer segments, key partners and activities and many more to build a basis for further exploitation and market deployment activities. They examined the strengths, weaknesses, opportunities and threats with regards to the OptEEmAL Platform and also the innovation pressure from various factors in their environment.

2.2.3.2 Agenda and overview of workshop activities

To stress the importance of the exploitation activities for this project and to reintroduce the business model canvas, María Sol asked the partners about the meaning and potential use of a business model and the business model canvas as a tool (“what is a business model?” / “what is the business model canvas good for?”). Answers revolved around the “definition of the activities of a business and its offerings (value proposition/products/services)”. Ms. da Silva specified that this includes the definition of specific customer segments, a business’ or project’s key activities, resources, and other important elements, but that the tools not only helped to compare the own business model and activities to those of a competitor, but also allowed to evaluate innovation opportunities: e.g. modify certain aspects of the business model to innovate on products, services or internal processes, or apply the same business model to a different market. The entire workshop was dedicated to explore in further detail potential business models and exploitation strategies for the OptEEemAL Platform as a whole and as a one exploitable result.

The workshop activities included the definition of the selected elements of the business model canvas and the customer journey as well as touch-points for the OptEEemAL clients (platform users). Within the discussion on the different elements of the business model canvas, another activity was performed in order to give the partners a better understanding of the customer experiences with the OptEEemAL platform: the customer journey. Nathalie and María Sol asked the partner to define the steps, a potential OptEEemAL customer has to undergo during the awareness, consideration and purchase phases, when buying a product/service as well as the potential customer touch points during the process.

In addition, the partners also conducted a SWOT analysis to identify strengths and weaknesses of the platform as well as the opportunities and threats posed by its environment. They also examine the innovation radar to facilitate the identification of innovation pressures coming from competition, users, other markets/sectors and above all new disruptive technologies and to closely monitor the environment. This radar should be updated regularly by the partners not to lose sight of potential changes and development opportunities in innovation.

In preparation for future market deployment activities, another activity served to identify a “flag” or “slogan” for the future definition of a unique selling proposition. Since this could include various solution features, customer segments and customer pains of the same solution, i.e. different “slogans” for the same solution or offering, the one with the most disruption potential should be chosen by the partners to allow for a focus when going to the market for the first time. This activity helped the partners to define, which problem they want to solve for which customer and how. The partners performed this exercise in three separate groups and came up with the three different conclusions. The diverse answers of the partners indicate the fact that the different working groups lay their focus within the same project variously.

The agenda for the second exploitation workshop in Brussels is presented below:

Table 6: Agenda for Exploitation Workshop 3 (WS3)

#	Content	Time
1.	Business Model Canvas for the OptEEemAL Platform	09:45 – 11:00
2.	SWOT Analysis	11:00 – 11:30
3.	Innovation Radar	11:30 – 12:15
4.	Conclusions and End of the Workshop	12:15 – 12:30

2.2.3.3 Conclusions and feedback

The 3rd exploitation workshop was a success in terms of deepening the partners' understanding of the OptEEmAL platform exploitation's potential. It helped to move the participants closer towards the development a feasible business model and it resulted in a better understanding of the customer experience and customer touch points with regards to the platform. Moreover, the partners have been given the tools to assess strengths, weaknesses, opportunities and threats related to the project and its ERs. They could monitor their business environment and identify the risks, the pressures and their sources. All of that conducted early enough to innovate in order not to lag behind the competitors.

Despite the very good results such as developing a common understanding of the business environment, performed exercises clearly indicated a need for further cooperation in order to let the detailed and implementable business model crystalize. Sustainable revenue stream and an effective pricing mechanism still needed to be researched and discussed. During the workshop, the partners came up with three different "slogans" for their solution. However, another discussion would be needed to identify the most potential for disrupting the current environment/markets.

At this stage, SEZ offered to hold two more workshops around the other OptEEmAL ERs (within the duration of the project). Participants decided to analyse two additional ERs. Based on the continuous update of the exploitable results, exploitation claims and tools, the partners decided to perform the two additional workshops for two other very important exploitable results (from exploitation level 2): the ECMs catalogue (WS3) and the district simulation toolbox (WS5). Exercises regarding the business models, SWOT analysis and the innovation radar would be applied again to investigate these two ERs

2.2.4 Workshop 4 (London)

2.2.4.1 Purpose of the workshop

The fourth exploitation workshop (WS4) took place in London, within the frame of a technical workshop and the 6th Linked Data in Architecture and Construction (LDAC) 2018 workshop organised by TUC from June 19th to 21st at University College London (UCL).

The fourth and fifth workshops were planned and implemented following the same logic as the third exploitation workshop and served to define the exploitation strategies for the following, specific ERs of the OptEEmAL project: the ECMs catalogue (WS4) and the district simulation toolbox (WS5).

2.2.4.2 Agenda and overview of workshop activities

The first part of the one-day workshop was dedicated to further developing business models for the OptEEmAL platform. Under guidance of SEZ, the partners had a discussion on the value chain of the OptEEmAL platform and related business models. Afterwards, they discussed different sales and pricing models (licensing, sale, etc.) for the OptEEmAL Platform for different customer segments and potential multipliers.

During the second half of the workshop, the OptEEmAL consortium examined another ER: the district simulation toolbox (DST)¹. Different elements of the **business model canvas** were discussed, customer segments identified and ranked, value propositions and key partners, resources and activities, as well as potential cost structures and revenue streams examined. The consortium also performed the activity on the **customer journey** to better understand the customer perspective in order to create an improved customer experience with regards to any interaction with the customers.

¹ The initial plan was to discuss the ECM catalogue in WS4 and the district simulation toolbox in WS5. However, considering the attendance of the workshop, the partners agreed to switch the schedule to suit the presence of the partners who were more concerned by each ER.

A **role play**, including partners representing either customers or sellers of the product, also helped to see the OptEEemAL DST from both perspectives in order to better understand possible motivators and “demotivators” for purchasing/using the tool. Ideas for a sales strategy were developed within a subgroup of partners representing the sales team that tried to sell the DST to the potential customer(s) interested in using the solution.

Same as during the last workshop, the **SWOT analysis** served to identify strengths and weaknesses of the DST as well as the opportunities and threats from its environment. The, the partner created the innovation radar for the DST that would help facilitate the identification of innovation pressures coming from users, other competitors, the ecosystem of a surrounding platform (in which the DST is integrated into) and above all new disruptive technologies.

The last exercise encouraged the partners to come up with a clear summary of what their actual (business) offering was. It showed how the partners wanted to solve their customer’s problems and by which means. Going through this activity was important to understand the role of a clear and precise statement of what the actual added value of the tool was. Also the appropriate marketing strategy plays an important role. This exercise is a good basis for identifying a clear and unique selling proposition.

The agenda for the second exploitation workshop in Brussels is presented below:

Table 7: Agenda for Exploitation Workshop 4 (WS4)

#	Content – Exploring Business Models for the District Simulation Toolbox	Time
1.	Feedback & Recap on Business Model, Value Chain & Pricing Models for the OptEEemAL Platform	09:00 – 10:20
2.	Business Model Canvas Part I, Arrow Scaler& Empathy Map	10:20 – 11:20
	Coffee Break	11:20 – 11:40
3.	Business Model Canvas Part II & Disruption Potential	11:40 – 13:00
	Lunch Break	13:00 – 14:00
4.	Customer Journey	14:00 – 14:45
5.	SWOT Analysis	14:45 – 15:45
	Coffee Break	15:45 – 16:00
6.	Innovation Radar	16:00 – 17:00
7.	Open questions and wrap up, next steps & end of the Workshop	17:00 – 18:00

2.2.4.3 Conclusions, and feedback

All activities of WS4 were successfully implemented and gave the partners a deeper understanding of the potential exploitation of the OptEEemAL Platform and the DST by getting closer to developing a feasible business model and better understanding of the customer experience and possible open questions related to both ERs.

Moreover, the partners obtained the tools to assess strengths and weaknesses as well as the threats and opportunities for the DST. They have learnt to monitor their “business” environment and identified the innovation-related pressures and their sources.

At this point, the SEZ agreed to hold one more workshop to further perform a role play for the OptEEemAL platform and examine the ECM catalogue going through the same exercises performed previously.

2.2.5 Workshop 5 (Anglet)

2.2.5.1 Purpose of the workshop

The purpose of the 5th exploitation workshop (WS5) which took place on the 3rd of October 2018 in Anglet, were the definition and description of business model elements, the SWOT matrix and innovation pressures for the ECM catalogue. The fifth workshop was planned and implemented following the same logic as the third and fourth exploitation workshops and was meant to help the partners set a basis for further business model considerations for the ECMs catalogue, which is one more crucial OptEEmAL project result.

Upon partners' request, a role play (activity first introduced in WS4) was performed for the OptEEmAL platform. The list of exploitable results was updated and a timeline of activities during the last months of the project and beyond was created. Further questions regarding the upcoming trainings, conferences and next steps were discussed.

2.2.5.2 Agenda and overview of workshop activities

All previous activities feeding into the development of business models, the assessment of the solution's strengths and weaknesses, the external opportunities and threats, and the innovation environment were performed for the ECM catalogue. The partners also performed the activity serving to come up with a clear summary of what their actual (business) offering was and ranked each other's suggestions.

Again, the **role play** activity was performed also for the OptEEmAL Platform to better understand possible criteria for decision-making or motivators and "demotivators" for potential users of the tool.

The workshop concluded with a joint exercise, defining the activities and important milestones to be carried out within the last six months of the project and during the first two years after the project.

The agenda for the second exploitation workshop in Brussels is presented below:

Table 8: Agenda for Exploitation Workshop 5 (WS5)

#	Content	Time
1.	ECM Catalogue: Business Model Canvas & ECMs Selection	09:00 – 10:15
2.	ECM Catalogue: SWOT Analysis & Innovation Radar & Disruption Potential	10:15 – 11:15
	Coffee Break	11:15 – 11:30
3.	OptEEmAL Platform Role Play	11:30 – 13:00
	Lunch Break	13:00 – 14:00
4.	Update of list of exploitable results	14:00 – 14:30
5.	OptEEmAL Next Steps: IP, Ownership & Roadmap for 2019/2020	15:00 – 16:00
6.	Open Questions (Final Conference / Trainings / Project Extension / etc.), Wrap Up & Next Steps	16:00 – 16:30

2.2.5.3 Conclusions

The activities of WS5 were carried out successfully. The partners established the basis for the potential exploitation of the ECM catalogue by closely examining business model elements, internal strengths and weaknesses as well as the external threats and opportunities and the innovation-related pressures and their sources.

The workshop concluded with a joint exercise, defining the activities and important milestones to be carried out within the last six months of the project and during the first two years after the project. This helped partners to prioritise and plan the upcoming

2.3 Summary and feedback of the workshop activities

Much work has been realised during the five OptEEmAL exploitation workshops. The discussions and outcomes of the workshops provide the basis for further exploitation of the OptEEmAL project results.

To guarantee the conditions for the collaborative development of the OptEEmAL platform, the project partner needed a deeper understanding of IPR management, including the definition of intellectual property rights, project background knowledge, project results and exploitable results, as well as ownership and exploitation claims and access rights. The activities performed for this purpose and the continuous development of the OptEEmAL project results laid the basis for further decision on which project results should be further exploited and in which way.

In a second step, the partners also needed to explore and define first elements of potential business models, i.e. potential customer segments, value propositions, key partners, activities and resources needed to exploit the results in further research activities, commercialisation and other ways. Further considerations such as cost structures, revenue streams potential channels and customer relationship management are equally important in order to validate the initial ideas around what customers need or want and what they are willing to pay for or even which efforts they are willing to undertake and what will stop them from buying our product or service in question. To make this issue clear, role plays were performed by the partners assuming the role of potential customers or OptEEmAL “sales representatives” to better understand the different perspectives, expectations of various customer groups and the challenges related to selling a product or services. The partner understood the importance of defining their unique selling proposition and other values or benefits for addressing potential customers.

The partners discussed, for the three selected exploitable results, these and other questions on the internal strengths and weaknesses of the respective project results, their external opportunities and threats, and the innovation pressures coming from the competition, users (buyers), markets and disruptive technologies, i.e. specific products, services and technologies within the contexts of retrofitting, construction and energy efficiency. It is important for the project partners to stay aware of what the competition in the field is doing and what new technologies can affect the OptEEmAL exploitable results. This means that the technological, economic and political environments have to be monitored constantly.

All activities and exercises performed during the workshops revealed technological and user-related improvements that would have to be implemented with regard to all three exploitable results and their features. Other important considerations and helpful ideas for implementation of the exploitation and business model and pricing strategies came up.

Once again, it is important to mention that all the outcomes of the performed activities will need to be deepened and reevaluated in order to create a successful business model featuring specific and sustainable revenue streams and effective pricing mechanisms.

In the course of the debate another important point was made: It would be very beneficial for the OptEEmAL project if the users could provide feedback, which could be used to improve the functionalities of the platform.

The **feedback** from the project partners regarding the workshops and performed activities was good to very good overall, though very demanding at times. It became clear that the partners' had different expectations and background knowledge regarding exploitation and IPR management issues. At an early stage of development (and technology readiness level), it was difficult for all



partners to think about the market and business opportunities, but with the progression of the project and the solutions, the ideas around these issues became clearer and could be captured. All activities

Through participating in the workshops led by SEZ, the partners had the opportunity to think about things they usually would not consider (e.g. pricing, how to approach the customers) and gained an overview of different perspectives. Some partners felt they now understood better where they were going and could start conceptualising how to further use or sell the OptEEemAL products or services.

Further support from the respective agents who are responsible for exploitation in each company will be needed to develop and implement the exploitation plans and strategies once the products and services have reached a higher level of maturity or technology readiness level.

The described workshops, carried out by SEZ and implemented in collaboration with all partners, have greatly supported the exploitation activities and planning of the OptEEemAL project and given the partners the necessary tools and knowledge to continue exploitation activities beyond the project.



3 Trainings

The OptEEemAL trainings were an essential part of the project's dissemination and exploitation activities foreseen in ST6.3.1 and ST6.3.2 in WP6 "Platform Validation and Demonstration on Technical and Societal Levels". The idea was to use the first training to communicate about the project from a general perspective and to a wide audience (not only people that will be involved in the use of the platform). The second training was then oriented towards people directly involved in the use of the platform (real users of the platform according to the IPD methodology). The trainings were organised by the demonstration sites on a local level (DTTN, FSS, LUND) and the partners responsible for the content and overall organisation of the trainings (CAR, NBK, SEZ).

3.1 Contributions of partners

The following Table 9 depicts the main contributions from participating partners in the development and implementation of the trainings.

Table 9: Contribution of partners to OptEEemAL trainings

Participant short name	Contributions
NBK	Delivering of training materials, Lead and presentations on training days
SEZ	Organisational support providing event-related materials, Review of training materials
DTTN, FSS, LUND	Organisation of the trainings at local level (invitations, venue, etc.)
CAR	Review of training materials, Organisational support

All training materials are available in the public deliverable D6.3 (WP6).

3.2 Purpose and contents of the trainings

The training activities consisted of two separate training day events, a more general training, providing an introduction to the OptEEemAL Platform, project and context on the first day and a more specific and targeted training on the second day performing a technical training, with more detailed explanations on how to use of the platform.

On the first day, stakeholders were introduced to the topic of energy efficiency in buildings, the retrofitting sector and the role of the OptEEemAL Platform within these two area. The project partners helped them to understand how the platform works in general manner and how it can be use it in an appropriate and efficient way. After a brief welcome and introduction by the respective demo site partner, Maxime Pousse from NBK presented the platform and the IPD supporting tools, and answered questions from the audience. The different end-users were guided through the different steps of the platform following the IPD methodology and associated E-guide. Expected outcomes and roles of the stakeholders and the Technical Offices were discussed.

The second day welcomed participants from the municipalities and their technical offices, as well as industry professionals from energy, architecture and construction companies and offered them the unique possibility to take an active part and use the platform in order to familiarise themselves with the platform. Considering their key role in the use of the platform (and thus in how the platform will be useful), these target groups received more details regarding the real case study performed with the platform (from case studies performed in task 6.2) and the next steps of the project.

All participants of the OptEEemAL general and technical trainings have received communication material, such as the two OptEEemAL flyers (2016, 2018), OptEEemAL Business Cards and the OptEEemAL Final Booklet.

Participants of the second day OptEEemAL technical training have also received the “How to use” guide (extract of the E-guide, D1.1, WP6).

At the end of the technical training on the second day, participants also received a technical questionnaire inquiring about the (1) Platform overall assessment and the (2) Graphical User Interfaces assessment. A summary of the results of the technical questionnaires are available in D6.3 “Report on stakeholders and IPD implementation to demonstrate the OptEEemAL platform” (WP6).

The project partners involved succeeded in attracting the planned target groups of municipalities and their technical offices, as well as industry professionals from energy, architecture and construction companies. According to registration information, representatives of the following stakeholder groups attended the trainings:

- municipalities and public authorities: 16%
- energy, architecture and construction companies: 70%
- research and other (e.g. ICT): 14%

3.2.1 Training 1 (Lund)

Experts from different backgrounds were invited by the Municipality of Lund to join the trainings, learn about the OptEEemAL Platform, discuss challenges and benefits and give feedback on the current state of development specific measures or features that could potentially be adapted. Participants mainly came from the following institutions:

- environmental strategy departments of the Lund Municipality,
- Department of Architecture of the Built Environment of Lund Technical University, and
- Skåne Energy Agency.

Important discussions took place on country-specific technical and administrative requirements, the flexibility of the applied ECMS, data gathering and file formats. The exchange showed that there is a need to further look into the country specific information and parameters included in the platform including building standard and climate information of different countries in the EU.

3.2.2 Training 2 (San Sebastian)

Fomento San Sebastián, the municipal company dedicated to the economic and social development and promotion of the city of Donostia - San Sebastian organised the OptEEemAL general and technical trainings for invited stakeholders to learn about the OptEEemAL Platform, discuss challenges and benefits and give feedback on the current state of development specific measures or features that could potentially be adapted. Participants came from the following institutions:

- Giroa – Veolia,
- BASE Arquitectura,
- AGM Arquitectos,
- Andrasa,
- EHU-UPV Kanpo Harremanetarako Zuzendariordea – Eiber,
- GO2 arkitektura,
- Augar Rehabilitaciones, S.L.,
- CEIT,
- FRL ARQ,
- Construcciones Sukia,
- Ayuntamiento San Sebastián,

- DPO Ingenieros,
- Colegio Oficial Ingenieros Industriales de Gipuzkoa,
- KPS Arquitectura,
- IDOM,
- Construcciones Moyua,
- GRANDE INGENIEROS, S.L.,
- Wintel,
- Telefónica,
- Asesor Energético y Ambiental,
- Laboratorio C.C. Gobierno Vasco.

The discussions held were mainly related to the use of BIM files for existing buildings (and also new buildings) and to the needed relationships with citizens in district retrofitting projects (inclusion of their wishes, conviction about the benefits, etc.). Regarding the BIM files, participants all acknowledged the benefits of the BIM methodology and associated files. However, they also highlighted the difficulties (time, money, skills, etc.) they encounter when using them in their daily practices or day-to-day business.

3.2.3 Training 3 (Trento)

In Trento, our partner Habitech/Distretto Tecnologico Trentino, a technological cluster with approximately 180 members, invited experts and professionals from the target segments to participate in the general and technical trainings, learn about the OptEEmAL Platform, discuss challenges and benefits and give feedback on the current state of development specific measures or features that could potentially be adapted. Participants mainly came from the following institutions:

- Consorzio Lavoro Ambiente
- Architect Association of Trento, and
- I&S Informatica & Servizi.
- Also included were freelancers from engineering.

Discussions were mainly related to the potential of a platform, such as OptEEmAL, for local authorities in the definition and design of retrofitting projects at large scale (i.e. district scales). OptEEmAL can be integrated in such processes to help define the most interesting measures to be applied and the associated costs (budget planning, etc.). The local specificities to be accounted for (some specific ECMs, specific costs, inclusion of existing local incentives, etc.) were also discussed. Finally, the interest to link OptEEmAL's outputs with Facility Maintenance tools was highlighted as a very interesting functionality for the tool in the future.

3.3 Summary and feedback of the trainings activities

During the OptEEmAL Project Final Conference a questionnaire was handed out to the participants to collect important feedback and information on the impressions of the potential stakeholders attending the trainings. In the following paragraph the feedback given by those participants will be evaluated separately for the general and technical trainings.

An overview of the quantifiable feedback for the general and technical trainings can be found below.

Table 10: Quantifiable feedback from the general trainings in Lund, San Sebastian and Trento

1. ORGANISATION		Total
Were you satisfied with the structure of the training?	very much	9
	it was satisfying	15
	not that much, there is space for improvement	1

How was the organisation (information before the training, friendliness)	very good	9
	good	16
	not that good	0
2. YOUR BENEFIT		
Did the event meet your expectations?	yes, fully	7
	mostly	13
	not that much	5
	not at all	0
Did you receive new information?	yes, much	11
	yes, some	10
	not much	3
	not any	0
Was the event useful for your future activities and cooperation?	very useful	5
	useful	13
	not that useful	6
	not useful at all	1

The total number of feedback questionnaires filled by participants for the OptEEmAL general training is 25. Out of the 25 participants who filled out the questionnaires, 9 (36%) were very much satisfied with the structure of the training and 15 (60%) were satisfied. One participant was not much satisfied. The organisation of the trainings was very good for many participants (9 votes, 36%) and good for the majority (16 votes, 64%). The expectations of the participants were fully met for 7 (28%) participants and mostly met for 13 (52%) participants. 5 (8%) attendees claimed the event did not meet their expectations that much. 11 (44%) participants received much new information, 10 (40%) received some new information and only 3 (12%) not much information. 18 (72%) participants felt the event was useful or very useful for your future activities and cooperation. 6 (24%) attendees found the event not that useful for the same purpose and only one found it not useful at all.

Overall, the consortium received positive feedback from the participants regarding the organisation and structure of the general trainings (98%). The training met the expectations of the majority of the attendees (80%) fully or mostly. Most participants (84%) received much or at least some new information and categorised the training as (very) useful for future activities and cooperation.

Table 11: Quantifiable feedback from the technical trainings in Lund, San Sebastian and Trento

ORGANISATION		Total
Were you satisfied with the structure of the training?	very much	10
	it was satisfying	1
	not that much, there is space for improvement	0
How was the organisation (information before the training, friendliness)	very good	9
	good	2
	not that good	0
YOUR BENEFIT		
Did the event meet your expectations?	yes, fully	6
	mostly	5
	not that much	0
	not at all	0
Did you receive new	yes, much	10

information?	yes, some	1
	not much	0
	not any	0
Was the event useful for your future activities and cooperation?	very useful	5
	useful	5
	not that useful	1
	not useful at all	0

The total number of feedback questionnaires filled by participants for the OptEEmAL general training is 11. Out of these 11 participants, 10 (91%) were very much satisfied with the structure of the training and 1 (9%) was satisfied. The organisation of the trainings was very good for most participants (9 votes, (82%) and good for the rest of the participants (2 votes, 18%). The expectations of the participants were fully met for 6 (55%) participants and mostly met for 5 (45%) participants. 10 (91%) participants received much new information and 1 (9%) person received at least some new information. 5 (45%) participants felt the event was very useful and another 5 (45%) attendees found it useful for your future activities and cooperation. Only 1 (9%) attendee found the event not that useful for the same purpose.

Overall, the consortium received very positive feedback from the participants regarding the organisation and structure of the technical trainings (100%). The training met the expectations of all of the attendees (100%) mostly or fully. All participants (100%) received much or at least some new information and categorised the training as (very) useful for future activities and cooperation.

The following paragraphs will provide an overview of the qualitative feedback for the general and technical trainings.

As indicated by the summary of the quantifiable feedback in the above paragraphs, the trainings were well received. Many written comments of from the questionnaires confirm this impression. The trainings:

- provided information regarding a new, interesting and useful tool,
- included a good presentation,
- were led by a good and well-prepared speaker with a lot of knowledge
- were technical but informative,
- offered information on new tools and potentials in energy optimisation
- provided room for exchange on the topics
- are fundamental in sharing the idea of the project with colleagues and clients, being the most important stakeholders who have to understand that BIM and integrated platforms must be used in the future of building markets

The participant gave the following suggestions for improvement of the trainings:

- further details about the files used in the platform and how to prepare them
- less information about background/introduction about energy use and statistics
- more examples of platform application, e.g. indicating % of energy reduction per scenarios
- (Trento) share the information in the local language to reach more stakeholders
- more training possibilities, i.e. try the platform with the participants own project
- missing definitions for several aspects and analyses
- need for more country specific information, because of the large differences of building standards and climates in different European countries

More specific feedback was given regarding the OptEEmAL Platform and integrated tools. The participants stated that the platform:

- is user-friendly and offers many opportunities within the participants working field

- conveyed the OptEEmAL Platform as supporting tool for designers in the future,
- showed the urge of the use of new technologies and new software in the future,

The platform-related challenges include:

- the use of BIM as input
- the difficulty to generate the base files
- the estimation/simulation of many different data sets before being able to work with the platform
- the complexity of the platform, being like a "black box", and the need to discuss more about parameters that the user can set and how s/he can control them
- the integration of renewables because of changes in politics
- the integration/consideration of behavioural attitudes of the owners of the buildings, e.g. with increase/decrease values, or sensitivity of the results to the owners' habits
- the flexibility of ECMs in the future
- the compatibility of the OptEEmAL Platform and other OptEEmAL solutions with the projects, processes and tools of the users

Potential additional technological aspects to consider where:

- the control and energy management systems when renewables are integrated
- energy storage systems, e.g. batteries

This feedback is very important for the further development and implementation of future trainings and respective materials as well as for the development of the OptEEmAL Platform and other tools.

All feedback questionnaires from the general and technical trainings and their evaluations have been compiled and made available to the partners through the OptEEmAL Owncloud.

4 Conclusions

This deliverable has given an overview on the organisation, contents and procedures of the workshop and training activities carried out over the course of the project. It is public and its final version (M42) was made available on the OptEEemAL website.

The outcomes of the exploitation and training activities will be considered in D7.13 Roadmap towards the exploitation of project results.

