DOCUMENTATION ON DECISIONS OF 2ND "DEPLOYMENT DESK MEETING"

D.T1.1.3

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Content

1. Introduction

The document provides a summary of the 2nd deployment desk meetings, which took place in Slovenia, Croatia, Austria and Italy between December 2019 and September 2020. Detailed minutes of every deployment desk meeting can be found in the appendix.

The deliverable is structured in the following chapters:

Date and place, which shows the date and place the second deployment desk meetings took place,

Number and type of participants, which provides some information about the participants of the deployment desk meeting and

Topics tackled, which provides a content-related summary of the outcomes of the meetings. This chapter is divided in a transnational summary, which compares the countries/pilots with each other and a reginal summary, which is the summary of one deployment desk meeting in a specific country. Therefore, there is a subchapter for each country.

In the chapter Implemented actions and links to deliverables, outputs the procedure of the meetings is described in detail and the connection to the other deliverables is explained. Moreover, the implemented actions and the used promotion materials are listed.

The chapter Results, effects and the response describes the achievements during the deployment desk meeting. The main emphasize is on the expected effects, the impact that is obtained by having different (or single) action(s) and on the response of the targets, if possible, together with some measurable data (via feedback forms, etc.).

The last chapter provides a Conclusion, followed by the detailed protocols of the deployment desk meetings in the appendix.

2. Date and place

- The 2nd deployment desk meeting in Slovenia was held on 26th of May 2020 in the City hall of Municipality of Lendava.
- The 2nd deployment desk meeting in Croatia was held on 3rd of September 2020 at the pilot site of the Bračak Manor (Energy Centre Bračak), Bračak 4, 49210 Zabok, Croatia.
- The official 2nd deployment desk meeting, which was already the third come together, was held on 11th of December 2019 at Gasthof Ederer, Weizberg 2, 8160 Weiz, Austria.
- The 2nd deployment desk meeting in Italy took place on 9th of July 2020 in Cuneo at the meeting room of CRC Foundation, before the deployment desk began, the cross-fertilization event with SHREC Project was held in the same place and via online meeting.
- As there is no pilot site in Germany and the 2nd deployment desk meeting was mainly related to the pilot execution, a different procedure is worked out for Germany. The gained knowledge from the other deployment desk meetings will be disseminated to the German stakeholders at the Climate Alliance workshop (“Store4HUC seminar "Energy storage in historic urban buildings”) on 7th of October 2020.

3. Number and types of participants/target groups

- Slovenia:
  - Institute for Tourism and Development Lendava
  - Municipality of Lendava (PP2)
  - Local energy agency Pomurje
  - Development agency Sinergija (PP1)
  - *only the main stakeholders have attended the meeting due to Covid-19 requirements*
- Croatia:
  - [redacted]
- Austria:
  - [redacted]

- [redacted]

- Italy:

In the meeting room 16 participants took part in the deployment desk, belonging to different stakeholder groups:

- 6 representatives of different departments of the city of Cuneo
- 1 representative of the local Union of Mountain Communities
- 2 representatives of the local public transport company, interested to the integration of the pilot storage with charging points for electromobility
- 2 representatives of Envipark, including Mrs Alexia Boulanger as project manager of MED Renewable Energy project
- 3 professionals
- 1 representative from Polytechnic of Turin, with specific expertise on pilot actions at regional level for the implementation of Local Energy Communities

Around 90 participants took part to the deployment desk via online mode.

4. Topics tackled

4.1. Transnational summary

In every country at least two different thematic question blocks have been discussed with the participants of the deployment desk meetings. The first one consists of questions about the pilot execution and the second one was about the action plan for further steps. Some questions were the same for all countries and some rely on regional particularities. Moreover, it was free for every region to adjust the suggested questions according to their needs and to add further queries. This makes sure that every deployment desk deals with the most important topics for their stakeholders and gives the flexibility to adjust thematic fields, if requested by stakeholders in order to bring in also new aspects.

In general, the execution of the pilot project is progressing well, but there are also some delays. While the pilot in Weiz is already very far developed and the execution of the pilot in Cuneo is also on time, bureaucratic issues caused delays in Slovenia and Croatia because of the particular situation of the respective HUC. In Slovenia, it needs a lot of permits to get the allowance to start, and the institutions that issue them are working relatively slow. In Croatia, a detailed installation project presentation was mandatory in order to be able to apply for a building permit, which is, a pre-condition for the execution of works. In the meantime, the building permit has been obtained, which means that all pre-conditions of Croatian public law bodies for the start of works have been met but it took more time than expected. Moreover, the situation of the Covid-19 pandemic also slowed things down and caused some further delays. But even if there are some delays, and some special requirements must be fulfilled, no major time challenges occurred that would jeopardise the execution of one of the pilots.

In the second thematic block, the technical, economic and legal constraints as well as the potentials of energy storage and energy management systems in HUC have been discussed with the stakeholders. Moreover, some recommendations for further actions have been worked out together. A lot of the constraints are related to one specific pilot, as they are using different technologies and the legal situation is also different in every country and region. But there are also some constraints that are more or less harmonised at European level and related also to additional costs due to the location of the pilot in a HUC. The assessment of the potentials of energy storage and energy management systems in HUC in general as well as the evaluation of the specific pilot plant progress has been declared as very positive and should be replicated at European scale.

A detailed description of the second thematic block is available in the Deliverable D.T1.2.5, which deals with the assessment of the constraints for the establishment of energy storages and related action plans.

In Italy, another topic was in regards to the project replication as there is the Sustainable Energy and Climate Action Plan (SECAP) of the city of Cuneo that was signed up 2015. Ongoing initiatives of creating renewable energy communities have been discussed in order to achieve the SECAP targets.

In Germany, the second deployment desk meeting will take place together with the Climate Alliance workshop on the 7th of October 2020. As there is no pilot in Germany, the meeting will be used to inform the German stakeholders about the outcomes of the second deployment desk meeting in the other countries.

4.2. Regional summary

This chapter provides a short summary of the outcomes of the discussed topics, separated by country/pilot. Detailed minutes of the 2nd deployment desk meetings are available in the appendix.

4.2.1. Slovenia:

Summarised replies on discussed questions about pilot execution

The current situation in regard to the pilot implementation is declared as favourable. The feasibility study is being prepared, as well as the specification for the public procurement and other documentation (plans, calculations). At the same time, preparations are underway to obtain the necessary permits. Pilot investment activities are delayed due to bureaucratic obstacles and institutional communications. Another issue that slows down the pilot execution is the investment itself, as it is very complex and precedent in Slovenia. Therefore, it is necessary to profoundly study and revise the feasibility and find out how to optimize the investment in financial and construction terms.

Although the recommendation of the monument protection office was received fairly quickly (because there will be no major interventions in the building), it can happen that obtaining a building permit will take more time than originally planned.

From the economic perspective, probably the pilot would not be economical without corresponding subsidies. In this respect the pilot is a kind of lighthouse of having a monitored pilot showing the investment effectiveness. The investor of the pilot, the municipality of Lendava had some doubts that the investment will financially increase, but the municipality still prefers the use of renewable energy sources against fossil fuels. It will also improve the quality of the workplace in the library, as the stench of heating oil will disappear, what of course is priceless and cannot be straightforwardly evaluated when economic efficiency is taken into account.

It was mentioned on the 1st deployment desk meeting that there are disagreements between ministries, especially between different bodies of ministries when it comes to obtain instructions and directives. During the actual project period, they prepared a catalogue of recommendations for the energy renovation of protected buildings, which was not the case before. This catalogue contains general guidelines that are not specific for Store4HUC and the result is that most of other energy measures are disproportionate to the requirements of the Institute for the Protection of Monuments.

Further steps

The next steps for the pilot in Lendava will be:

- to get the construction permission
- to accurately calculate the capacities of storage
- to specify the works for public procurement
- to select the contractor
- to start with the installation and construction work.

There are no local restrictions to obtain permits, the energy storage itself does not need any particular permit. The construction part for the installation of the storage tank is somewhat challenging as it is necessary to pull the geothermal water line up to the protected building. Since the most non-invasive solution to pull the line through the building was found, no more difficult bureaucratic hurdles regarding monument protection are expected.

Recommendation for others:

The hot water storage pilot is especially suitable in cities that already use the energy of thermal water and have a developed grid-systems of geothermal water. It is also suitable in cases where the water temperature is higher. Of course, it is also important where the water connection is located, whether it is in the middle of the grid or at the end of the grid where the water temperature is already lower. The potential is also in facilities where there is a lack of space, as paraffin storage has a smaller volume. This advantage could be used in spatial issues in monumental-protected buildings. Such a storage can justify a higher cost. Other more general hints are:

- Involvement of all stakeholders from the beginning of the project;
- Good calculations of data, better knowledge on the topic, detailed knowledge of the existing geothermal grid, knowledge of the substation (temperatures, pressure, distances);
- Detailed knowledge of the legislation in regard to listed buildings.

4.2.2. Croatia:

Summarised replies on discussed questions about pilot execution

In general, the execution of the pilot project is progressing very well. Installation project for project execution has been prepared. The detailed installation project presentation was mandatory in order to be able to apply for a building permit, which is a pre-condition for performing the execution of works. The building permit has been obtained, which means that all pre-conditions of Croatian public law bodies for the start of works have been met. Immediately after the building permit was obtained, the preparation of the public procurement procedure for the execution of works began. Currently the project is in the process of market appraisal. Due to the situation with the Covid-19 pandemic, the preparation of project documentation was unexpectedly delayed and took longer than expected. This created a chain effect, so the building permit was obtained later than planned. For this reason, the execution of the works could not begin in September because not all requirements have been fulfilled yet.

In Croatia, as well as in the Krapina-Zagorje County, the biggest constraints related to energy storages, energy management systems and installations of photovoltaic systems in locations that are under cultural protection are related to the requirements given by the Ministry of Culture and Conservation Departments. Constraints are defined by the Law on Protection and Preservation of Cultural Heritage. The law prescribes the prevention of any action that could directly or indirectly change the properties, shape, meaning and appearance of a cultural property. It is also obligatory to protect and preserve cultural goods in their pristine and original condition, and to pass on cultural goods to future generations.

Since the Law on Protection and Preservation of Cultural Heritage prohibits any action that could directly or indirectly change the properties, shape, meaning and appearance of a cultural property, the installation of a photovoltaic system on the roof of a building is impossible. Therefore, it was necessary to look for other solutions and the conservation department accepted the construction of a canopy in the parking lot next to the castle on the same cadastral plot. In order to achieve that, it was necessary to obtain a building permit. Obtaining a building permit means that it was necessary to prepare an installation project and meet the special conditions of public bodies involved in the procedure. Specifically, for the pilot project Bračak it was necessary to meet the special requirements of the Conservation department, Civil protection service, Sanitary inspection, Distribution system operator and Natural gas distributor.

Quo vadis

Stakeholders are aware that interventions in historical urban centres meet strict architectural protection constraints and involve higher implementation costs than usually so the economic viability with current prices is questionable due to strict requirements prescribed.

Krapina-Zagorje County is rich in historical urban sites, old castles, and manors that have the status of cultural property. Most of these facilities are in poor condition and the use of energy storage systems and energy management systems should be considered when renovating them. Also, photovoltaic systems should be used to generate electricity to create efficient energy communities based on renewable energy sharing. Energy renovation of old buildings that are under cultural protection plays an important role in the energy transition and reduction of carbon dioxide emissions. Such a practice should be replicated throughout the Republic of Croatia, especially in the reconstruction of the City of Zagreb after the March 2020 earthquake.

4.2.3. Austria

Summarised replies on discussed questions about pilot execution

In Table 1 the timetable of the workplan is shown. It includes management aspects, the realisation of construction works and the implementation of the storage. In addition, dissemination activities are foreseen after the completion of the pilot set-up. The implementation of the storage is planned for the summer 2020 and from the current perspective it looks good that the plan can be followed (Update 09.2020: The storage is already implemented).

Table 1: Timetable of pilot Weizberg

Work packages / MMM.JJ	Mar 20		Apr 20		May 20		June 20		July 20		Aug 20		Sep 20		Oct 20		Nov 20		Dec 20		Jan 21		Feb 21	
Project management																								
Project start																								
Project documentation																								
Project controlling																								
End of Project																								
Implementation of the building measurements																								
Tenders																								
Implementation of building measures																								
Implementation storage																								
Preparation and planning																								
Implementation storage																								
Dissemination																								
Articles and newspapers																								
Workshop with members of biomass team																								
Monitoring																								
Ongoing measurements																								

One of the main reasons for the installation of a storage tank and other measures are to increase efficiency at the location of the heating plant in the historic monument and landscape protection zone of Weizberg, where the church and the parish buildings are protected as a historical monument and as protected site. The integration of large heat storage units and other measures for local heating networks in historical districts represents a great challenge due to the strict conditions imposed by the protection of the townscape and historical monuments. However, especially in these districts, which are protected as historic sites and monuments, there is a backlog with regard to energy efficiency and the use of renewable energy sources.

Quo vadis

The aim of the pilot in Weiz is to integrate the water buffer storage tank unobtrusively into the appearance of the local landscape. It should be shown that large thermal energy storage systems will be a technically and economically viable option for the provision of heating and cooling in buildings or districts under preservation order, especially in regard to the integration of renewable energy sources. Only the integration of the central heat storage unit will enable the implementation of a fully integrated, intelligent load management system, which will lead to a massive increase in the flexibility and efficiency of the pilot. The fact, that the location is a historical and listed district, is the most relevant constraint. The latter could be overcome via special structural measures that leads to higher costs.

Even though the pilot solution does not correspond to the original plans of the Biomasseheizwerk Weizberg, and higher costs occurred because of some additional requirements resulting from the fact the pilot is located in a HUC, the stakeholders form the Weizberg biomass heating plant are quite satisfied with the pilot solution. Although the wishes of the Weizberg biomass heating plant were included in the jointly agreed overall solution, the final decision was made by the local image protection officer. However, even with the compromises made, the procedure in Weiz can still be considered a good solution and should and can serve as a replication model in other regions of Europe.

4.2.4. Italy:

Summarised replies on discussed questions about pilot execution

The execution of the Italian pilot is going well so far. The project obtained the Landscape Permit from related Commission of the Municipality of Cuneo, since the pilot will be installed into a river park with landscape and environmental restrictions. The optimal size of the PV system and of the storage in relation to the useful surface of the site and to the energy needs of the pilot were defined. The delivery of the executive project is scheduled for the end of July 2020, on time with respect to the project deadlines.

Moreover, some additional implementations to the pilot in terms of services provided by the storage system were proposed. In fact, the storage will serve as both the slope elevator and a charging station for e-bikes. The opportunity to connect the system to other charging stations for electric vehicles installed in the parking of the nearby sports facilities is also under evaluation.

Quo vadis

The pilot implemented in the project is a particular case study, since it is a slope elevator that can be installed only in specific European areas. The Cuneo Pilot project will be replicated in the same municipality thanks to the new sustainable urban mobility plan that foresees the implementation of new elevators that will connect the HUC with intermodal parking. Also, in the Province of Cuneo other municipalities have similar public mobility systems where it is possible to implement similar solutions.

In general, the participants of the deployment desk meeting agree that the implementation of energy storages and energy management systems in HUCs could be an important driver to stimulate the installation of RES systems as well as the creation of energy communities, based on improving the self-sufficiency of RES systems. Due to the small size there are no major barriers and regulatory restrictions

concerning protection of architectural and environmental heritage that can prevent the installation of energy storages in Italian HUC.

There is developed a new Sustainable Energy and Climate Action Plan (SECAP) in the city of Cuneo. The SECAP promotes the realization of RES production and storage systems in several ways. It will contribute to modify the municipal building regulation in order to promote the installation of these systems in case of the refurbishment of residential buildings or define municipal subsidies to citizens that want to invest in these systems. The SECAP could also include the implementation of thermal storages in the district heating network, to optimize the system and to increase its efficiency.

Moreover, there is an ongoing initiative on the creation of energy communities in the Piedmont region. The Piedmont Region promotes the establishment of energy communities in order to optimise the process of decarbonisation of the economic and territorial system, and to facilitate the production, exchange and consumption of energy generated mainly from renewable sources, as well as ways of improving energy efficiency and reducing energy consumption. The Region particularly supports the creation of energy communities with an economical support provided to the entities who intend to establish an oil free zone. Already four energy communities are being formed in the following areas: Val Susa, Val Maira, Valle Po and Pinerolese.

5. Links to deliverables and outputs

The second deployment desk meetings were carried out in Slovenia, Croatia, Austria and Italy. It was possible to conduct all deployment desk meetings face-to face. In addition to that, Italy also offered the possibility of an online participation because of the Covid-19 situation. The Covid-19 situation was also the reason for some countries to decide to keep the number of participants low and to focus on the most important stakeholders. Nevertheless, it was possible to reach almost all important stakeholders with the deployment desk meeting even in these difficult times. As the members of the deployment desks are already involved in the project they have been mostly invited informally, via e-mail or phone. In Slovenia, Croatia and Austria, the questions have been divided into two topics:

- questions about pilot execution
- questions regarding the Action Plan for further steps

In Italy there was a third topic about the project replication. Moreover, the second deployment desk meeting in Italy was held on the side-lines of the cross-fertilization event in common with the European Project SHREC (Interreg Europe). Therefore, it was possible to reach more than 100 participants.

In Croatia, the results of EM tools were also presented, with a special focus on the Bračak pilot project.

In Germany there was no deployment desk meeting like in the other countries because the main topic of the second deployment desk meeting was the pilot execution and there is no pilot in Germany. However, the gained knowledge from the other deployment desk meetings will be disseminated to the German stakeholders at the Climate Alliance workshop on 7th of October 2020.

In the context of communication activities, on the 2nd Deployment Desk meetings promotion material like the solar power banks (D.C.3.3), the cotton bags (D.C.3.1) and the leaflets (D.C. 2.1) have been distributed to the participants in most of the countries. The project roll-up (D.C. 3.2) was used, too.

The outcome of the second topic regarding the action plan for further steps was a very important input for the deliverable D.T1.2.5 and a major basis for the definition of the recommendations for action. Furthermore, the deployment desk meetings are related to the deliverable D.T1.1.1 which outlines the concept of the deployment desks as well as to the deliverable D.C.1.1, the communication strategy.

6. Synthesis

The most important achievement of the second deployment desk meetings was that we have brought together all relevant institutions and organizations at local level again, to provide them an update about the current situation of the project/pilot and to discuss the next steps as well as the lessons learnt from the last months. By establishing the stakeholder deployment desks, we ensure, that the main actors are involved in the whole project. With this instrument, we will reach the relevant players to share the knowledge and transfer it to other external audiences that are not part of the inner circle. Especially in these difficult times with COVID-19 the deployment desk meetings were important to stay connected with the stakeholders and keep the project running. Of course, the option to have an online meeting instead of a physical meeting was offered to everyone.

In Slovenia, the local energy agency Pomurje has provided the documentation, which the Municipality of Lendava will forward to administrative institutions to obtain the permissions. The development agency Sinergija is taking control for this and is managing contingency plans for catching up the delays and remind all involved parties in the pilot implementation. The meeting also brought some decisions into the debate such as the capacity of the storage and where the pipeline will run from the station.

In Austria, the feasibility study as well as the timeframe of the implementation of the storage were discussed and the timeframe was fixed. There is an agreement among all participants of the deployment desk about the chosen timeframe. The main critical point was the integration into the landscape, which has been already solved. The participants of the deployment desk meeting also worried about the co-financing of the storage. Due to the fact, that the Biomass district heating network did not get any financial support for the storage from the Store4HUC project, the biomass district heating network needs financial support from the government of Austria. The W.E.I.Z and the external partner AEE INTEC support the biomass district heating network to get financial support for the storage implementation from the government of Styria. It is also requested by the stakeholders, that the chosen boilers can be used beyond the pay-back period.

In Croatia, slightly less people attended the meeting than at the first deployment desk meeting, which was attributed to the Covid-19 pandemic. At the meeting, all the guidelines of the Civil Protection Headquarters of the Republic of Croatia were respected. In general, all stakeholders were very satisfied with the meeting, which is confirmed by the feedback sheets that the stakeholders filled in anonymously after the meeting. What the stakeholders liked most about the meeting was:

- the opportunity to be actively involved in the implementation of the project,
- the open discussion,
- that the lecture was informative and understandable,
- new information about future steps,
- insight into specific activities and information how they contribute to energy savings,
- the presentation of the battery system,
- and the presentation on the pilot project.

In Italy, the 2nd deployment desk meeting has given some good suggestions to the partners for carrying out the next actions foreseen by the project, in particular for the implementation of the pilot, but also a clear overview about the actual energy community's framework.

About possible future project synergies:

- Seminars organised by CRC Bank Foundation (Associated Partner) on the regional, national and European policies for energy efficiency and RES.
- Meetings organised by the Piedmont Region on the theme of energy communities in the framework of the Interreg Europe SHREC project

In regard to energy communities as part of the SECAP:

- Promoting a collective and territorial approach to the design of new efficient energy systems, that means creating dialogue and synergies between different initiatives (energy communities, European projects, etc.) to optimise both, the resources invested, and the services offered.
- Informing citizens and communities of opportunities offered by implementation of energy communities.
- At this moment there is an obstacle to the promotion of energy communities due to the regulatory framework as it is still in the definition phase which does not allow to clearly outline the costs and benefits related to the establishment of an energy community.
- Overcoming the market logic that currently defines the basis of the regulatory system: logic of selling and buying energy (actual energy market) Versus logic of producing and exchanging energy (energy community)

7. Conclusion

Even if it was more difficult this time to organize the second deployment desk meeting because of the Covid-19 situation, it was confirmed by almost all participants that such events are very important for the stakeholders to remain informed about the project progress and to have the possibility to be actively involved in the project as also for the project team to be able to get feedback and valuable input from the stakeholders. Therefore, it is planned to go ahead with the next deployment desk meetings in that way, of course with the possibility to switch to an online meeting if the national situation does not allow a physical meeting.

8. Appendix

- Minutes of 2nd “deployment desk meeting” in Slovenia
- Minutes of 2nd “deployment desk meeting” in Croatia
- Minutes of 2nd “deployment desk meeting” in Austria
- Minutes of 2nd “deployment desk meeting” in Italy

DOCUMENTATION ON DECISIONS OF 2nd „DEPLOYMENT DESK" MEETING

SLOVENIA

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Content

1. Summary

The present document reflects the actions set for the further pilot implementation in Slovenia in Municipality of Lendava. The 2nd deployment desk meeting was attended by limited stakeholders due to the restrictions. Only the representative of the core group met. At the meeting the most important issues have been discussed such as the financial aspects of the pilot as well as the practical and operational pilot implementation aspect. The current priority of the investor (municipality) is to speed up the whole process of permits obtaining and to find a cost-effective contractor.

2. Date and place

The 2nd Deployment desk in Slovenia was held on 26th of May 2020 in the City hall of Municipality of Lendava.

3. Number and types of participants/target groups

The meeting was attended by 5 participants. There was different type of the organisations:

- Institute for Tourism and Development Lendava;
- Municipality of Lendava;
- Local energy agency Pomurje;
- Development agency Sinergija.

The meeting was attended by less participants as on the previous meeting as there were still covid-19 measures. Only the main stakeholders that are directly connected to the pilot investment met.

4. Topics tackled

The aim of the 2nd Deployment desk meeting was to review the work done and to present the pilot in details. The purpose was also to determine the steps towards the public procurement for the pilot installation. It is very important how the open call will be defined so to be in line with the application form and the feasibility study.

In addition, the discussion included also the financial aspects of the pilot and the paper permissions which have to be issued by various public institutions. It was already examining that the permission of the monument protection institution is not necessary as the construction work won't damage the building envelop and there won't be no major and visible changes on the building. Therefore, there is no restrictions from this institution. Before launching the public procurement, the permission for construction work has to be gain.

The additional thoughts and concerns refer also to the capacities of the energy storage as the library building has limited space capacities. It was presented more installation options of energy storage.

4.1. First topic: Pilot execution

- How is the pilot execution running in general?
    - Give a short overview on the current status

The current situation with regard to pilot implementation is quite favourable. Feasibility study is being prepared, as well as the specification for the public procurement and other documentation (plans, calculations). At the same time, preparations are underway to obtain permits.

    - Is everything on schedule, or are there any delays expected? If yes, why?

Pilot investment activities are delayed due to bureaucratic obstacles. It takes a lot of permits to start an investment, and the institutions that issue them are slow. Another issue that slows down the investment is the investment itself, as it is very complex and precedent in Slovenia. Therefore, it is necessary to slowly study and recalculate everything and find out how to optimize the investment in financial and construction terms.

    - Did you have any issues regarding legal aspects? (cultural heritage protection, etc)

We are not facing any major problems in obtaining permits at the moment. In Slovenia, bureaucratic procedures are lengthy in one way or another. Although we received the opinion of the monument protection institute fairly quickly (because there will be no major interventions in the building), it can happen that obtaining a building permit will still be slower than originally planned. In fact, it is still unknown whether a building permit is required for such an intervention or not. As a result, the activity is delayed.

- How was/is the feasibility study running?
    - Is everything as expected?

The preparation of the feasibility study is slower than expected. The pilot investment is quite complex and innovative. The study is prepared by external experts, who must prepare measurements and documentation, as well as calculations on the feasibility.

    - What does the stakeholders think about the economic efficiency of the pilot?

The municipality of Lendava is the investor of pilot. They are keen in such a pilot measure, but they want to see the effect and the positive results. It is difficult to expect anything, as such a measure has not yet been implemented anywhere, so it is all in difficult anticipation. There are fears that the investment will financially increase, but the municipality prefers renewable energy sources over fossil fuels. It will also improve the quality of the workplace in the library, as the stench of heating oil will disappear, what of course is priceless when economic efficiency is taken into account.

    - Would it also be economical without any subsidies?

Probably a pilot would not be economical. If it would, the geothermal network operator would have already implemented it and gone into this investment himself. So, it’s suitable to have a pilot version first that will show the effectiveness of the pilot.

- Is there a need for additional tools for the storage planning?
    - If yes, what would be needed?

Maybe some tool for calculating the lifelong economy efficiency of the pilot.

- In DD1 you said that the cooperation at the national level is purely official and often inefficient, how are your experiences for this pilot so far? (Ways to improve?)

It was mentioned that there are disagreements between ministries, especially between different bodies of ministries when it comes to obtaining regulations. During this time, they prepared a catalogue of recommendations for the energy renovation of protected buildings, which was not the case before. This catalogue contains general guidelines, they are not specific and the result is that most of the energy measures are disproportionate to the requirements of the Institute for the Protection of Monuments.

4.2. Second topic: Action Plan for further steps (D.T.1.2.5)

- Are there any constraints for establishment of the energy storage you had to deal with?

There are no restrictions on obtaining permits, the storage itself does not need any permits. The construction part for the installation of the storage tank presents the most problems for everyone, as it is necessary to pull the geothermal water line to the protected building. Since we found the most non-invasive solution to pull the line through the building, we have now no more difficult bureaucratic hurdles regarding monument protection. However, it is true that the farther the line is from the main / intermediate station, the higher the cost of construction work.

- How do you see the potentials of energy storage and energy management systems in HUC?

It is very welcome at the moment, but it will be seen only after the realization what is the real potential.

- How do you see the potentials of your specific pilot solution for other cities/areas?

The hot water storage pilot is especially suitable in cities that already use the energy of thermal water and have a developed network/system of geothermal water. It is also suitable in cases where the water temperature is higher. Of course, it is also important where the water connection is located, whether it is in the middle of the grid or at the end of the grid where the water temperature is already lower.

The potential is also in facilities where there is a lack of space, as paraffin storage has a smaller volume. This advantage could be used in spatial issues in monument-protected buildings. Such a storage can justify a higher cost.

- If we think about an action plan, what recommendations for action would be very important from your perspective?

The action that need to be further carried out from our perspective:

- To get the construction permission.
- To calculate the capacities of storage.
- To specify the works for public procurement.
- Select the contractor.
- Start with the installation and construction work.

The recommendation for actions for others:

- Involvement of all stakeholders from the beginning of the project;
- Good calculations of data, better knowledge on the topic, detailed knowledge of the existing geothermal remote network, knowledge of the substation (temperatures, pressure, distances);
- Detailed knowledge of the legislation within protected buildings.

- In DD1 you said that a "*new long-term Strategic Sustainable Energy Plan with incorporated Regional Action plan for the energy efficiency and exploitation of renewable energy sources*" would be needed.
    - How could such a plan look like for Slovenia?

Such plan would be really useful, especially if the topic of geothermal energy will be integrated. Usually it is not included in such plans as this energy exists and is exploited only in the northeaster part of Slovenia.

    - What steps would be needed within the Store4HUC project to contribute best to the achievement of this goal?

Invite responsible persons to meetings (energy experts, ministries, institutes, facility owners, distributors, municipalities;

For a start, it would be very appropriate to include the use of geothermal energy at least in local and regional strategies.

5. Implemented actions and links to deliverables, outputs

The meeting was scheduled quite ad-hoc due to the covid-19 restrictions. It wasn't moderated, it was attended only by the most important stakeholders. They went through all important aspects of the pilot investment to speed up the pilot process. Especially it was discussed the financial aspects, the implementation itself and the obtaining of the official opinions for the permissions from different public institutions responsible for issuing the permissions.

6. Results, effects and the response

The meeting came by right time as it was finally agreed what is responsibility of each stakeholder. Local energy agency Pomurje has to send the documentation which will Municipality of Lendava forward to official institutions to obtain the permissions. Development agency Sinergija is taking control for this and is responsible for catching up the delays and remind all involved parties in the pilot implementation.

The meeting also brought some decisions such as the capacity of the storage and where the pipeline will run from the station.

7. Conclusion

The meeting was really effective as there a lot of time has passed from the last meeting. The responsibilities have been appointed between different stakeholders. The meeting has been carried out in due time and in critical moment when the actions need to be step forward. It was also important that the representatives of the municipality were so collaborative and proactive and showed the seriousness in taking part of the pilot implementation.

8. Annexes

8.1. Invitation and Agenda

Not applicable

8.2. List of participants

D.T1.1.3: 2. srečanje deležnikov, Lendava, 26.5.2020

8.3. Pictures

8.4. Media coverage

Not applicable

8.5. Web-links

Not applicable

DOCUMENTATION ON DECISIONS OF 2nd „DEPLOYMENT DESK" MEETING

CROATIA

D.T1.1.3

Version: final

09.2020

Title	Documentation on decisions of 2nd “Deployment Desk” Meeting in Croatia
Deliverable	D.T1.1.3
Authors	Matija Hrupački, Mario Vašak, Alois Kraußler, Robert Pratter, Reiterer & Scherling GmbH
Contributors	
Status	final
Reviewed by	
Submission	

Content

1. Summary

Documentation consists of 5 minutes on the meeting organized in Zabok where the pilot site Bracak Manor is located. It demonstrates decisions of the 2nd deployment desks connected to pilot execution.

The recently renovated Bračak Manor is already equipped with wood pellets boiler for heating, micro CHP for hot water and power production during summer, air-water heat pump system for cooling and heating in transitional periods, wall insulation on the inside and energy efficient windows and doors, efficient lighting system, HVAC system, advanced central BMS for monitoring of heating, cooling and energy consumption, rainwater harvesting for irrigation of green areas and wastewater treatment as well as electric vehicle charging station. Through the implementation of the pilot project it is planned to add a properly sized photovoltaic system and battery storage to it. The already existing systems will be combined with the new ones through an advanced energy management ICT system as a coordination service that optimally exploits different available assets.

The main target of the second Deployment desk meeting was to bring together all relevant Stakeholders and present to them the installation project on the basis of which a public procurement for the execution of works will be carried out. Also, project partners from the University of Zagreb - Faculty of Electrical Engineering and Computing (PP9 UNIZGFER) through ppt presentation provided the stakeholders with general project results so far and with the results of energy management tools with a focus on the tools for Bračak manor.

2. Date and place

Deployment desk meeting was held on 3rd of September 2020. at the pilot site of the Bračak Manor (Energy Centre Bračak), Bračak 4, 49210 Zabok, Croatia.

3. Number and types of participants/target groups

The meeting was attended by 12 people in total.

- [redacted]

While individual persons changed since the last deployment desk meeting, the structure of the deployment desk and the involved organizations do not. Although all stakeholders were invited as at the first Deployment desk meeting the response was slightly lower which we attribute to the Covid-19 pandemic. At the meeting, all the guidelines of the Civil Protection Headquarters of the Republic of Croatia were respected.

4. Topics tackled

In the first part of the 2nd Deployment desk meeting, through the .ppt presentation representatives of University of Zagreb Faculty of Electrical Engineering and Computing (PP9, UNIZGFER) provided the stakeholders with general information on the project progress so far. Stakeholders were explained the working principle of energy management tools in HUC with a focus on energy storage systems. Also, it was explained how to optimize the power of the photovoltaic installation, the power of the battery converter and the battery capacity based on KPI criteria with the aim of minimizing the economic cost of energy and maintenance.

After that, the representatives of UNIZGFER (PP9) presented to the stakeholders through ppt presentation the results of energy management tools on pilots with a focus on the pilot project Bračak. After an introduction in which all pilot projects are briefly presented, the focus fell on the integration of the photovoltaic system with a battery bank into the existing advanced installation at the pilot site of the Bračak manor. Also, it was explained the importance of proper parameterization of the photovoltaic system and battery system to make the systems work with maximum efficiency.

In the second part of the meeting representatives of REGEA (PP8) through the ppt presentation provided the stakeholders with detailed description of installation project on basis of which a public procurement for the execution of works will be carried out. Stakeholders were presented with the concept of investment implementation (pilot project) during which the technical and economic aspect was explained. It was explained what type of battery system will be installed, its advantages over others and other important technical details such as capacity and mode of operation. Also, the stakeholders were explained about the concept of the photovoltaic power plant to be installed, its peak power, type of converters, wiring, system performance and its installation on the canopy for which it was necessary to obtain a building permit. It was explained the annual profile of electricity consumption of Bračak manor in comparison with the expected productivity of the photovoltaic system. It was also explained the planned concept of integration of batteries and photovoltaic system into central monitoring system as a coordination service which will optimally exploit different available assets in the building.

4.1. First topic: Pilot execution

In general, the execution of the pilot project is progressing very well. Installation project for project execution has been prepared. The detailed installation project was mandatory in order to be able to apply for a building permit, which is, a condition for the execution of works. The building permit has been obtained, which means that all conditions of Croatian public law bodies for the start of works have been met. Immediately after the building permit was obtained, we began to prepare the public procurement procedure for the execution of works. The current status of the project execution is that we are in the process of market research. Due to the situation with the Covid-19 pandemic, the preparation of project documentation was unexpectedly delayed and took longer than expected. This created a chain effect, so the building permit was obtained later than planned. For this reason, the execution of the works could not begin in September because then all the conditions for the start had not yet been met.

Stakeholders are aware that interventions in historical urban centres meet strict architectural protection constrains and involve higher implementation costs than normal so economic viability with current prices is not possible as in other locations that do not have such strict conditions prescribed.

4.2. Second topic: Action Plan for further steps (D.T. 1.2.5)

In Croatia, as well as in the Krapina-Zagorje County, the biggest constraints related to energy storage, energy management systems and installation of photovoltaic systems in locations that are under cultural protection are related to the constraints prescribed by the Ministry of Culture and Conservation Departments. Constraints are defined by the Law on Protection and Preservation of Cultural Heritage. The law prescribes the prevention of any action that could directly or indirectly change the properties, form, meaning and appearance of a cultural property. It is also obligatory to protect and preserve cultural goods in their pristine and original condition, and to pass on cultural goods to future generations.

Since the Law on Protection and Preservation of Cultural Heritage prohibits any action that could directly or indirectly change the properties, shape, meaning and appearance of a cultural property, the installation of a photovoltaic system on the roof of a building is impossible. Therefore, it is necessary to look for other solutions and the conservation department accepted the construction of a canopy in the parking lot next to the castle on the same cadastral plot. In order to achieve that, it is necessary to obtain a building permit. Obtaining a building permit means that it is necessary to prepare an installation project and meet the special conditions of public bodies involved in the procedure. Specifically, for the pilot project Bračak it was necessary to meet the special requirements of the Conservation department, Civil protection service, Sanitary inspection, Distribution system operator and Natural gas distributor.

Krapina-Zagorje County is rich in historical urban sites, old castles, and manors that have the status of cultural property. Most of these facilities are in poor condition and the use of energy storage systems and energy management systems should be considered when renovating them. Also, photovoltaic systems should be used to generate electricity to create efficient energy communities based on renewable energy sharing. Energy renovation of old buildings that are under cultural protection plays an important role in the energy transition and reduction of carbon dioxide emissions. Such a practice should be replicated throughout the Republic of Croatia, especially in the reconstruction of the City of Zagreb after the earthquake.

The actions from the pilot perspective:

- It is necessary to raise the awareness of decision makers about the importance of the renovation of buildings under cultural heritage and the implementation of renewable energy sources, use of energy storages and energy management systems,
- It is necessary to raise the level of knowledge about the importance of using energy storage systems, energy management systems and the use of renewable energy sources,
- It is necessary to create a legal framework for the restoration of buildings under cultural heritage and simplify procedures for the installation of energy storage systems, energy management systems and use of RES,
- It is necessary to legally define the possibility of installing renewable energy sources on the roofs of buildings that are under cultural heritage in such a way that such installation does not affect the visual identity of the building,
- The Law on the Protection and Preservation of Cultural Heritage needs to be adapted to the time of energy transition in order to facilitate the procedures for the installation of renewable energy sources in such localities.

5. Implemented actions and links to deliverables, outputs

We have approach stakeholders by contacting them by e-mail and phone. For the first Deployment desk meeting we provided roll-up as a promotional project material, and before the second DD meeting, we have produced cotton bags (D.C.3.1) and solar power banks (D.C.3.3). Organisation of 2nd deployment desk meeting relates to D.T.1.1.1 deliverable.

6. Results, effects and the response

A total of 12 people attended the meeting. Although all stakeholders were invited as at the first Deployment desk meeting the response was slightly lower which we attribute to the Covid-19 pandemic. At the meeting, all the guidelines of the Civil Protection Headquarters of the Republic of Croatia were respected. The stakeholders especially liked the fact that we gave them the opportunity to be actively involved in the implementation of the project and the way we approached them, which is confirmed by anonymous feedback forms on an questionnaire that we shared after the meeting. A total of 10 people filled out an anonymous feedback form. We evaluated the feedback forms whose statistics are shown in the table below.

Table 1: Feedback forms statistics

	Very dissatisfied	Dissatisfied	Indifferent	satisfied	Very satisfied	Satisfaction rate
Registration process				x,x	x,x,x,x,x,x,x,x	96,00%
Location					x,x,x,x,x,x,x,x,x,x	100%
Venue					x,x,x,x,x,x,x,x,x,x	100%
Drinks				x	x,x,x,x,x,x,x,x,x	98%
Food				x	x,x,x,x,x,x,x,x,x	98%
Presenters					x,x,x,x,x,x,x,x,x,x	100%
Hygiene					x,x,x,x,x,x,x,x,x,x	100%
Content				x	x,x,x,x,x,x,x,x,x	98,00%

Also, the stakeholders via feedback forms rated the meeting as excellent, it was written by 10/10 participants who filled out the questionnaire. What the stakeholders liked most about the meeting was: Open discussion; The lecture was informative and understandable; New information and what future activities are planned; Insight into specific activities undertaken and how they contribute to energy savings; clear presentation, constructive discussion; presentation of the battery system; Presentation on the pilot project.

7. Conclusion

By establishing the stakeholder deployment desk, we have reached the relevant players to share the knowledge and transfer it to other additional audience. Second Deployment desk meeting was held on 3rd of September 2020, at the location of Bračak Manor - location of CRO Pilot. At the meeting were invited all relevant stakeholders, to inform them about the activities connected to pilot execution. The meeting was attended by representatives of the Krapina-Zagorje County, Zagorje development agency, Ministry of Culture of the Republic Croatia – Conservation office in Krapina, University of Zagreb – Faculty of Electrical Engineering and Computing (FER), and North-West Croatia regional energy agency.

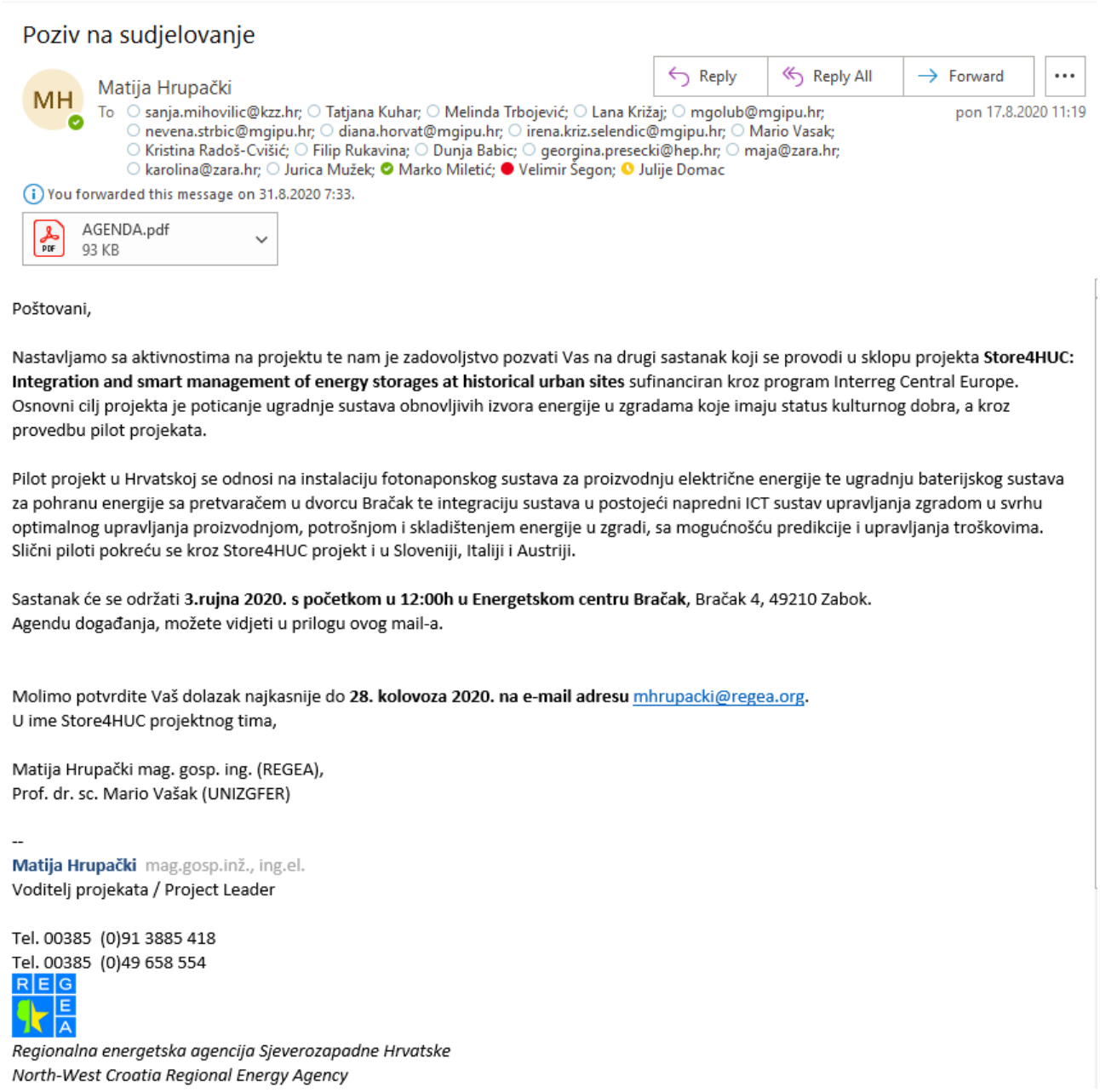
The second deployment desk meeting was constructive, where general information on project progress was presented to stakeholders through power point presentations. Also, the results of EM tools were presented, with a special focus on the Bračak pilot project. Besides that, REGEA (PP8) through the ppt presentation provided the stakeholders with detailed description of project documentation on basis of which a public procurement for the execution of works will be carried out. Stakeholders were presented with the concept of investment implementation (pilot project) during which the technical and economic aspect was explained. It was explained what type of battery system will be installed, its advantages over others and other important technical details such as capacity and mode of operation. Also, the stakeholders were explained about the concept of the photovoltaic power plant to be installed, its peak power, type of converters, wiring, system performance and its installation on the canopy for which it was necessary to obtain a building permit. It was explained the annual profile of electricity consumption of Bračak manor in comparison with the expected productivity of the photovoltaic system. It was also explained the planned concept of integration of batteries and photovoltaic system into central monitoring system as a coordination service which will optimally exploit different available assets in the building.

In general, all stakeholders were very satisfied with the meeting, which is confirmed by the feedback forms that the stakeholders filled in anonymously after the meeting.

8. Annexes

8.1. Invitation and Agenda

Invitation mail is shown below:



Poziv na sudjelovanje

MH Matija Hrupački

Reply | Reply All | Forward | ...

To sanja.mihovilic@kzz.hr; Tatjana Kuhar; Melinda Trbojević; Lana Križaj; mgolub@mgipu.hr; nevena.strbic@mgipu.hr; diana.horvat@mgipu.hr; irena.kriz.selendic@mgipu.hr; Mario Vasak; Kristina Radoš-Cvišić; Filip Rukavina; Dunja Babic; georgina.presecki@hep.hr; maja@zara.hr; karolina@zara.hr; Jurica Mužek; Marko Miletić; Velimir Šegon; Julije Domac

pon 17.8.2020 11:19

You forwarded this message on 31.8.2020 7:33.

AGENDA.pdf
93 KB

Poštovani,

Nastavljamo sa aktivnostima na projektu te nam je zadovoljstvo pozvati Vas na drugi sastanak koji se provodi u sklopu projekta **Store4HUC: Integration and smart management of energy storages at historical urban sites** sufinanciran kroz program Interreg Central Europe. Osnovni cilj projekta je poticanje ugradnje sustava obnovljivih izvora energije u zgradama koje imaju status kulturnog dobra, a kroz provedbu pilot projekata.

Pilot projekt u Hrvatskoj se odnosi na instalaciju fotonaponskog sustava za proizvodnju električne energije te ugradnju baterijskog sustava za pohranu energije sa pretvaračem u dvorcu Bračak te integraciju sustava u postojeći napredni ICT sustav upravljanja zgradom u svrhu optimalnog upravljanja proizvodnjom, potrošnjom i skladištenjem energije u zgradi, sa mogućnošću predikcije i upravljanja troškovima. Slični piloti pokreću se kroz Store4HUC projekt i u Sloveniji, Italiji i Austriji.

Sastanak će se održati **3.rujna 2020. s početkom u 12:00h u Energetskom centru Bračak**, Bračak 4, 49210 Zabok.
Agendu događanja, možete vidjeti u prilogu ovog mail-a.

Molimo potvrdite Vaš dolazak najkasnije do **28. kolovoza 2020. na e-mail adresu** mhrupacki@regea.org.
U ime Store4HUC projektnog tima,

Matija Hrupački mag. gosp. ing. (REGEA),
Prof. dr. sc. Mario Vašak (UNIZGFER)

--
Matija Hrupački mag.gosp.inž., ing.el.
Voditelj projekata / Project Leader

Tel. 00385 (0)91 3885 418
Tel. 00385 (0)49 658 554

Regionalna energetska agencija Sjeverozapadne Hrvatske
North-West Croatia Regional Energy Agency

Figure 1: Invitation-mail

Agenda is shown below:

STORE4HUC

AGENDA

2ND „DEPLOYMENT DESK" MEETING

CROATIA

D.T1.1.3

Version 1

08.2020

Drugi sastanak dionika pri provedbi investicije u spremnike energije na zaštićenoj lokaciji dvorca Bračak (HR deployment desk meeting)

Datum: 3. rujna 2020.

Lokacija : Energetski centar Bračak - dvorac Bračak; Bračak 4

Vrijeme: 12:00 h

Terminski plan događanja

Croatian deployment desk meeting No. 2

- 12:00: Doček sudionika ispred Energetskog centra Bračak
- 12:10: Pozdravni govor domaćina (REGEA)
- 12:20: Kratka prezentacija do sada dobivenih rezultata na projektu Store4HUC (FER)
- 12:30: Prezentacija - Investicije i pilot projekti koji se provode u sklopu projekta Store4HUC (FER)
- 12:40: Prezentacija - Projektna dokumentacija za provedbu pilot projekta na lokaciji Dvorca Bračak (REGEA)
- 13:00: Pitanja i odgovori
- 13:15: Druženje uz ručak

8.2. List of participants

List of participants is shown below:

Drugi sastanak dionika pri provedbi investicije u spremnike energije na zaštićenoj lokaciji dvorca Bračak (2nd HR deployment desk meeting D.T1.1.3)

Datum: 3. rujna 2020.
Lokacija: Energetski centar Bračak - dvorac Bračak; Bračak 4
Vrijeme: 12:00 h

"Osobne podatke koje REGEA i Fakultet elektrotehnike i računarstva, Sveučilišta u Zagrebu prikupljaju na potpisnim listama prikupljaju se dana 3.9.2020. od 11 do 14 sati u svrhu provedbe projekta pod nazivom Store4HUC, odnosno, u svrhu evidencije i dokaza broja sudionika na drugom radnom sastanku (2nd HR deployment desk meeting), slijedom čega se isti neće upotrebljavati za niti jednu drugu svrhu osim ovdje navedene, te se isti neće dostavljati bilo kojim trećim osobama u Republici Hrvatskoj i/ili inozemstvu."

"Svi sudionici radnog sastanka projekta Store4HUC dana 3.9.2020. od 11 do 14 sati mogu biti fotografirani za potrebe vidljivosti, a fotografije mogu biti korištene za potrebe slanja priopćenja za medije, za potrebe objava na društvenim mrežama, te u druge reklamne i/ili promidžbene svrhe. Fotografiranje će obaviti Matija Hrupački. Ako ne želite biti na fotografiji, odnosno, ako ne želite da se Vaša fotografija koristi za potrebe slanja priopćenja za medije i/ili objave na društvenim mrežama i/ili u druge reklamne ili promidžbene svrhe molimo da se obratite na mail ibelic@regea.org."

Regionalna energetska agencija Sjeverozapadne Hrvatske i Fakultet elektrotehnike i računarstva, Sveučilište u Zagrebu postupaju u cijelosti u skladu s odredbama UREDBE (EU) 2016/679 EUROPSKOG PARLAMENTA I VIJEĆA od 27. travnja 2016. godine o zaštiti pojedinaca u vezi s obradom osobnih podataka i o slobodnom kretanju takvih podataka te o stavljanju izvan snage Direktive 95/46/EZ (Opća uredba o zaštiti podataka).

Potpisna lista

[redacted]

REGIONALNA ENERGETSKA AGENCIJA SJEVEROZAPADNE HRVATSKE
REGIONAL ENERGY AGENCY NORTH-WEST CROATIA
FER

Interreg CENTRAL EUROPE
STORE4HUC

[redacted]

REGIONALNA ENERGETSKA AGENCIJA SJEVEROZAPADNE HRVATSKE
REGIONAL ENERGY AGENCY NORTH-WEST CROATIA
FER

8.3. Pictures

Picture from the meeting is shown below:

Figure 2: Photo from the 2nd deployment desk meeting

8.4. Media coverage

Not applicable

8.5. Web-links

Link to the news of the meeting:

https://www.facebook.com/regeaSZhr/posts/3381461281994578

Figure 3 shows a screenshot of the news of the meeting held

Figure 3: Screenshot of the news page

DOCUMENTATION ON DECISIONS OF 2nd „DEPLOYMENT DESK" MEETING

AUSTRIA

D.T1.1.3

Version: final
05.2020

Title	Documentation on decisions of 2nd “Deployment Desk” Meeting in Austria
Deliverable	D.T1.1.3
Authors	Andrea Dornhofer, Rafael Bramreiter, Alois Kraußler, Robert Pratter, Reiterer & Scherling GmbH,
Contributors	
Status	final
Reviewed by	
Submission	

Content

1. Summary

The topics of the second deployment desk were the implementation of the storage, the definition of the life cycle costs calculation and several planning issues. Most of the members of the Deployment Desk (which were defined in the first stage of project) participated again. Within this meeting, also the timeline of the implementation was discussed and the financial issues, the costs of the construction and the boiler itself. Also, several funding options concerning the implementation of the storage at the historical side were discussed. The funding of the storage is not part of the project but very important for realisation and the life cycle cost calculation. Within support of external resources, we can provide additional financial support coming from the Austrian government.

2. Date and place

Weiz, Gasthof Ederer, Weizberg 2, 8160 Weiz

11th of December 2019, 07:30 pm

3. Number and types of participants/target groups

In Austria, 14 stakeholders participated at the 2nd Deployment Desk meeting. While individual persons changed since the last deployment desk meeting, the structure of the deployment desk and the involved organizations did not.

Participants of the 2nd Deployment Desk meeting:

- Nikolaus Büchel
- Johannes Schinagl
- Michael Steinbauer
- Michael Hofer
- Maria Toswald
- Josef Hochegger
- Franz Steinbauer
- Christoph Weber
- Josef Frieß
- Patrick Strobl
- Andrea Dornhofer
- Michael Heidenreich,
- Robert Pratter
- Rafael Bramreiter

4. Topics tackled

The aim of the project is the integration of a central heat storage tank into the existing heating plant of the local heating network in the historic monument and landscape protection zone of Weizberg as well as the implementation of a new control system with a fully integrated, intelligent load management with mutual communication of all plant components.

The boiler section of the heating plant is currently operated mainly in the disadvantageous partial or low load range due to the lack of a central heat storage tank. This leads to increased fuel consumption and pollutant emissions (CO, NOx, dust and volatile unburned CnHm emissions). In addition, due to the lack of a central storage tank, the heating network is used as a thermal buffer to absorb the heat supplied by the boilers, particularly in the burnout phase, in order to be able to supply the decentralised hot water storage tanks at the customers' premises. In this way, the heating network is constantly maintained at correspondingly high flow temperatures and unnecessary heat losses of the network (distribution losses) occur.

In the 2nd deployment desk, the current state, and the next steps of the pilot execution has been discussed.

4.1. First topic: Pilot execution

Only the implementation of the fully integrated, intelligent load management of all system components in interaction with the central heat storage tank and the decentralised heat storage tanks at the customers' premises makes it possible to minimise the disadvantageous operating mode of the boiler plant and prevents the local heating network from being used as a thermal buffer. These planned measures thus increase the flexibility and energy efficiency of the entire biomass heating plant. Essentially, the following positive effects will be achieved:

- Use of the heating network as a thermal buffer is avoided → lower heat losses (distribution losses), optimised fuel utilisation;
- Operation of the heating network during the summer months only at certain times when hot water is required and after communication with the decentralised storage → Lower heat losses (distribution losses) and savings on pump energy;
- Saving of primary energy (fuel savings) by increasing efficiency → CO2 savings through lower energy expenditure for the provision of the wood chips (production, transport, etc.);
- Lower emissions of pollutants (carbon monoxide (CO), dust, NOx and volatile organic carbon compounds (CnHm));
- Increase of the service life of the plant components → Significant saving of ecological resources, which would result from an early complete renewal of the boiler plant.

One of the main reasons for the lack of a storage tank and other measures to increase efficiency is the location of the heating plant in the historic monument and landscape protection zone of Weizberg, where the church and the parish buildings are protected as a historical monument and a protected site. At present, the integration of large heat storage units and other measures for local heating networks in historical districts represents a great challenge due to the strict conditions imposed by the protection of the townscape and historical monuments. However, especially in these districts, which are protected as historic sites and monuments, there is a backlog demand with regard to energy efficiency and the use of renewable energy sources.

4.2. Second topic: Action Plan for further steps (D.T. 1.2.5)

In table 1 the timetable of the workplan is shown. It includes management aspects, the realisation of construction work and the implementation of the storage. In addition, dissemination activities are foreseen after the completion of the work.

Table 1 Timetable pilot Weizberg

Work packages / MMM.JJ	Mar 20		Apr 20		May 20		June 20		July 20		Aug 20		Sep 20		Oct 20		Nov 20		Dec 20		Jan 21		Feb 21	
Project management																								
Project start																								
Project documentation																								
Project controlling																								
End of Project																								
Implementation of the building measurements																								
Tenders																								
Implementation of building measures																								
Implementation storage																								
Preparation and planning																								
Implementation storage																								
Dissemination																								
Articles and newspapers																								
Workshop with members of biomass team																								
Monitoring																								
Ongoing measurements																								

With the innovative approach described here and despite additional effort of the used approach, it is to be shown that flexibility and energy efficiency measures in general, but especially for biomass heating plants in historical and listed districts, are both economically and technically feasible. Especially the fact, that the location is in a historical and listed districts, is the most relevant constraint, what could be solved by special structural measures, but leads to higher costs.

The aim of this project is to integrate the planned water buffer tank unobtrusively into the overall picture. It can thus be shown that large thermal energy storage systems will in future also be a technically and economically viable option for the provision of heating and cooling in buildings or districts under preservation order, especially with regard to the integration of renewable energy sources. Only the integration of the central heat storage unit will also enable the implementation of fully integrated, intelligent load management, which will lead to a massive increase in the flexibility and efficiency of the system.

With regard to recommendations for action and policy on joint planning of legal constraints in Weiz, it can be said that the actors at the Weizberg biomass heating plant have become satisfied with the solution worked out. However, it has to be said that this solution does not correspond to the original wish of Biomasseheizwerk Weizberg and that it will result in additional costs for the local operator. For example, the size and colour of the buffer storage tank as well as the materials of the panelling were given. Although the wishes of the Weizberg biomass heating plant were included in the joint overall solution, the final decision was made by the local image protection officer. All in all, if one looks beyond the compromises made, the procedure in Weiz can still be considered a good solution and should and can serve as a model in other regions of Central Europe.

5. Implemented actions and links to deliverables, outputs

The W.E.I.Z. has set up the 2nd local deployment desk as part of its project work until now. In this context, various interest groups (local decision makers, members of the community, members of the biomass district heating network, sectoral authorities, energy experts, etc.) were involved in the process of controlling and planning energy storage. In this context, two deployment desk meetings were held. The launch of the deployment desk Meeting on 14 June 2019 and a second meeting on 11 September 2019 were used to discuss the feasibility study and the timeframe of the project.

As well the inputs will feed into the Deliverable T1.2.3 Feasiblity study and in 2.1.4 Investment specification concept

In the context of communication activities, the W.E.I.Z. provided inputs regarding D C.1.1 - the common communication strategy. The W.E.I.Z. also purchased a project rollup. A solar power bank was also purchased by W.E.I.Z. In addition, the Austrian partners purchased project cotton bags and leaflets.

The most important (transnational) meetings, besides the project meetings in Slovenia and Italy, was the participation cross fertilization WS of Climate alliance in Rostock and the participation on 12th of September in a national event with the focus on "Energyinfrastructur". On the 29th of August, a workshop on energy was organised by Weiz and the project "Store4HUC" was presented there.

The Store4HUC project is also on the W.E.I.Z. website and an article was written for regional newspaper. Numerous project meetings have been held. Further articles in newspaper and online will follow and many activities are ongoing at project level (newsletter etc.). Finally, there will be an opening ceremony with relevant regional and local economic, scientific and political actors.

6. Results, effects and the response

Within this deployment desk we discussed the feasibility study which we are going to carry out for the WEIZ Pilot. A feasibility study is simply an assessment of the practicality of a proposed plan or project. It takes all relevant factors into account—including economic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully and is therefore used to discern the pros and cons of undertaking a project before a lot of time and money is invested into it. As the name implies, the study deals with the question, if the project/pilot is feasible or not. The main goals can be defined as follows:[1]

- To understand thoroughly all aspects of a project, concept, or plan;
- To become aware of any potential problems that could occur while implementing the project;
- To determine if, after considering all significant factors, the project is viable — that is, worth undertaking.

As well the timeframe of the implementation of the storage was discussed and the timeframe was fixed.

Among these issues there is an agreement among all participants of the deployment desk and the chosen timeframe. The main critical point was the integration into the landscape, which has been already solved.

The participants of the deployment desk also worried about the subsidies and the financing of the storage. Due to the fact, that the Biomass district heating network didn´t get any financial support for the storage from the Store4HUC, the Biomass district heating network needs financial support from the government of

[1]Kenton, Will (11.08.2019): Feasibility Study. URL: “https://www.investopedia.com/terms/f/feasibility-study.asp [10.10.2019].

Austria. The WEIZ and the external partner AEE INTEC will support the Biomass district heating network to get any support for the storage implementation from the government of Styria.

It is also essential for the stakeholders, that the boilers can be used for a longer period of time due optimised operation and thus costs can be saved.

7. Conclusion

The timeframe of the project was fixed and as well the feasibility study and the investment specification concept will be provided by the WEIZ. There was no additional questions or feedback.

8. Annexes

8.1. Invitation and Agenda

Dieses Projektes „Store4HUC" wird durch Mittel des transnationalen Interreg CENTRAL EUROPE Programmes zur nachhaltigen Entwicklung und Umsetzung von Energiestrategien und -maßnahmen in zentraleuropäischen Städten und Regionen gefördert!

AGENDA

Workshop: 2. Deployomentdesk (incl. Kick off 3 Deployomentdeskmeetings)

Ort, Datum: Weiz, 11. Dezember 2019, 19:30

1) Begrüßung:

Johannes Schinagl, Biomasse Heizwerk Weizberg, Johann Neuhold, Biomasseheizwerk Weizberg

2) Speicher Weizberg, Vorstellung Umsetzung und Kosten

Andrea Dornhofer

8.2. List of participants

Participants of the 2nd deployment desk meeting:

1) Nikolaus Büchel
2) Johannes Schinagl
3) Michael Steinbauer
4) Michael Hofer
5) Maria Toswald
6) Josef Hochegger
7) Franz Steinbauer
8) Christoph Weber
9) Josef Frieß
10) Patrick Strobl
11) Andrea Dornhofer
12) Michael Heidenreich,
13) Robert Pratter
14) Rafael Bramreiter

Dieses Projektes „Store4HUC“ wird durch Mittel des transnationalen Interreg CENTRAL EUROPE Programmes zur nachhaltigen Entwicklung und Umsetzung von Energiestrategien und -maßnahmen in zentraleuropäischen Städten und Regionen gefördert!

Workshop: T1 Deploymentdesk meeting

Ort, Datum: Weiz, 11.12.19; 18:30

VORNAME, NACHNAME	ORGANISATION	UNTERSCHRIFT	Ja, ich stimme zu, dass das Innovationszentrum W.E.I.Z. meine persönlichen Daten speichert und verarbeitet.	Ich bin damit einverstanden per E-Mail, und Post weitere projektbezogene Informationen zu erhalten.	Ich bin damit einverstanden, dass Fotos von mir, im Zusammenhang der Veranstaltung veröffentlicht werden dürfen.
Johannes Schinagl	Biomasseheizwerk	[signature]	☒	☒	☒
Hildegard Steinbauer		[signature]	☐	☒	☒
MICHAEL HOFER		[signature]	☒	☒	☒
MARIA TOSWALD		[signature]	☒	☒	☒
Josef Hochegger		[signature]	☒	☒	☒

By signing, you agree that your personal data may also be used for the purposes of the narrative and financial control of the provider of funds and other public authorities to control the use of public funds. Your data are protected by public authorities in accordance with the European and Austrian regulations. The consent is required by the General Data Protection Regulation. If you do not want to share your personal information, enter only the name and surname and your signature.

Dieses Projektes „Store4HUC“ wird durch Mittel des transnationalen Interreg CENTRAL EUROPE Programmes zur nachhaltigen Entwicklung und Umsetzung von Energiestrategien und -maßnahmen in zentraleuropäischen Städten und Regionen gefördert!

Workshop: T1 Deployment desk meeting

Ort, Datum: Weiz, 11.12.19, 18:30

VORNAME, NACHNAME	ORGANISATION	UNTERSCHRIFT	Ja, ich stimme zu, dass das Innovationszentrum W.E.I.Z. meine persönlichen Daten speichert und verarbeitet.	Ich bin damit einverstanden per E-Mail, und Post weitere projektbezogene Informationen zu erhalten.	Ich bin damit einverstanden, dass Fotos von mir, im Zusammenhang der Veranstaltung veröffentlicht werden dürfen.
Franz Steinbauer		[signature]	☒	☒	☒
NIKOLAUS BÜCHEL		[signature]	☒	☒	☒
CHRISTOPH WEBER		[signature]	☒	☒	☒
Josef Friess		[signature]	☐	☐	☐
Patrick Strobl		[signature]	☒	☒	☒

By signing, you agree that your personal data may also be used for the purposes of the narrative and financial control of the provider of funds and other public authorities to control the use of public funds. Your data are protected by public authorities in accordance with the European and Austrian regulations. The consent is required by the General Data Protection Regulation. If you do not want to share your personal information, enter only the name and surname and your signature.

Dieses Projektes „Store4HUC" wird durch Mittel des transnationalen Interreg CENTRAL EUROPE Programmes zur nachhaltigen Entwicklung und Umsetzung von Energiestrategien und -maßnahmen in zentraleuropäischen Städten und Regionen gefördert!

Workshop: T1 Deployment desk meeting

Ort, Datum: Wien, 11.12.19, 19:30

VORNAME, NACHMNAME	ORGANISATION	UNTERSCHRIFT	Ja, ich stimme zu, dass das Innovationszentrum W.E.I.Z. meine persönlichen Daten speichert und verarbeitet.	Ich bin damit einverstanden per E-Mail, und Post weitere projektbezogene Informationen zu erhalten.	Ich bin damit einverstanden, dass Fotos von mir, im Zusammenhang der Veranstaltung veröffentlicht werden dürfen.
Andreas Dornhofer	W.E.I.Z.		☐	☐	☐
Michael Heidenreich	CES		☒	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

By signing, you agree that your personal data may also be used for the purposes of the narrative and financial control of the provider of funds and other public authorities to control the use of public funds. Your data are protected by public authorities in accordance with the European and Austrian regulations. The consent is required by the General Data Protection Regulation. If you do not want to share your personal information, enter only the name and surname and your signature.

8.3. Pictures

8.4. Media coverage

Particularly noteworthy in this context is the ground breaking ceremony on 14.02.2019, about 2 months after the deployment desk meeting.

meinbezirk.at

Spatenstich für die Heizhaus-Erweiterung

14. Februar 2020, 17:51 Uhr • 252× gelesen • 0 • 0 •

hochgeladen von Susanne Mostögl

Autor: Susanne Mostögl aus Weiz

Das Biomasseheizwerk Weizberg, das seit 1999 regionales Waldhackgut als Brennstoff verwendet, baut nun aus und der Spatenstich dazu wurde hochkarätig besucht.

Am 14. Februar 2020 luden Obmann Johann Neuhold, Geschäftsführer Johannes Schinagl und Aufsichtsratsvorsitzender Nikolaus Büchel zum Spatenstich für die Erweiterung des Heizhauses und die Integration eines zentralen Wärmespeichers am Weizberg ein. Unter anderem waren Landtagsabgeordneter DI Andreas Kinsky, der Weizer Bürgermeister Erwin Eggenreich, Vizebürgermeisterin Mag.a Iris Thosold, der Thannhausner Bürgermeister Gottfried Heinz, Pfarrer Mag. Anton Herk-Pickl sowie Franz Rosenberger zu Gast.

Die Direktorin der VS Weizberg Mag. Karin Traussnig-Stacherl ist froh, dass die Bauarbeiten in den Semesterferien anfangen und zeigt sich zuversichtlich, dass der Unterricht auch nach Schulbeginn nicht zu stark gestört wird. Auch die Pfarre Weiz könnte von Behinderungen durch die Arbeiten betroffen sein, weshalb sich die Verantwortlichen bereits im Vorhinein für das Verständnis bedanken.

Der vom Weizer Energie Innovationszentrum als Partner unterstützte Ausbau soll in Zukunft viele Vorteile bezüglich der Wärmeversorgung in Weiz bringen. Dazu zählen beispielsweise Brennstoff- als auch CO2-Einsparungen, weniger Verteilverluste, eine längere Lebensdauer der Anlage, dadurch eine Einsparung ökologischer Ressourcen und in diesem Zusammenhang soll ein umweltschonenderes Heizen ermöglicht werden. Und all dies wird in einem denkmalgeschützten Gebiet durchgeführt, weshalb die stattfindende Realisierung dieses Erweiterungsprojekts nicht selbstverständlich ist.

8.5. Web-links

www.innovationszentrum-weiz.at

http://weizberg.heimat.eu/info.htm

DOCUMENTATION ON DECISIONS OF 2nd „DEPLOYMENT DESK" MEETING

ITALY

D.T1.1.3

Version final

09.2020

Title	Documentation on decisions of 2nd “Deployment Desk” Meeting in Italy
Deliverable	D.T1.1.3
Authors	Stefano Dotta, Luca Galeasso, Mauro Cornaglia, Robert Pratter, Alois Kraußler, Reiterer & Scherling
Contributors	
Status	final
Reviewed by	
Submission	

Content

1. Summary

The second deployment desk meeting was held on the sidelines of the cross-fertilization event in common with the European Project SHREC (Interreg Europe) and took place both via online meeting and in presence at the meeting room of CRC Foundation of Cuneo.

The main topic of the second deployment desk was to exploit the opportunities offered by the integration of energy storage in the optimization of energy communities and in boosting the energy transition of our communities.

During the second deployment desk meeting, the stakeholders have also discussed how the municipal planning tool as the SECAP could contribute and encourage the spreading of energy communities and energy storage systems. Another key point discussed is related to the regulatory aspects that hinder the implementation of energy communities in our territory.

2. Date and place

The second deployment desk meeting took place on 9th July 2020 in Cuneo at the meeting room of CRC Foundation from 11 am to 13 pm, before the deployment desk meeting, the cross-fertilization event with SHREC Project was held in the same place as online meeting.

3. Number and types of participants/target groups

In the meeting room 16 participants took part in the deployment desk, belonging to different stakeholder groups:

- 6 representatives of different departments of the city of Cuneo
- 1 representative of the local Union of Mountain Communities
- 2 representatives of the local public transport company, interested to the integration of the pilot storage with charging points for electromobility
- 2 representatives of Envipark, including Mrs Alexia Boulanger as project manager of MED Renewable Energy project
- 3 professionals
- 1 representative from Polytechnic of Turin, with specific expertise on pilot actions at regional level for the implementation of Local Energy Communities

Around 90 participants took part to the deployment desk via online mode.

The complete list of participants is reported in annex 8.2

4. Topics tackled

The main topics discussed during the second deployment desk meeting were related to the progress of the pilot execution and the opportunities offered by the storage systems in the context of the energy transition and the energy communities.

All topics discussed were contextualized in the reality of the Municipality of Cuneo, however the results and suggestions that emerged could be similar to those of Municipalities settled in other regions or countries.

The following questions provided the basis for the discussion.

4.1. First topic: Pilot execution

- How is the pilot execution running in general?

  The project obtained the Landscape Permit from the Landscape Commission of the Municipality of Cuneo, since the pilot will be installed into a river park with landscape and environmental restrictions.

  The optimal size of the photovoltaic system and of the storage in relation to the useful surface of the site and to the energy needs of the pilot were defined. The delivery of the executive project is scheduled for the end of July, on time with respect to the project deadlines.

- Is there a need for additional tools for the storage planning?

  Some additional implementations to the pilot in terms of services provided by the storage system were proposed. In fact, it will serve both the slope elevator and a charging column for e-bike. The opportunity to connect the system to other charging columns for electric vehicles installed in the parking of the nearby sports facilities is also under evaluation.

4.2. Second topic: Action Plan for further steps (D.T. 1.2.5)

- Are the any constraints for establishment of the energy storage you had to deal with?

  Actually, there aren't barriers and regulatory constrain concerning protection of architectural and environmental heritage that prevent the installation of energy storages in HUC.

- How do you see the potentials of energy storage and energy management systems in HUC?

  The implementation of energy storage and energy management systems in HUCs could be an important driver to stimulate the installation of RES systems in these contexts and also the creation of energy communities, based on sharing of renewable energy.

- How do you see the potentials of your specific pilot solution for other cities/areas?

  The pilot implemented in the project is a particular case study, since a slope elevator is only installed in some specific area.

  After this premise the Cuneo Pilot project could be replicated on the same Municipality thanks to the new sustainable urban mobility plan that foresees the implementation of new elevators that will connect the HUC with intermodal parking. Also, in the Province of Cuneo other Municipality have similar public mobility system where it is possible to implement the same technologies and solutions.

4.3. Third topic: Project replication (national topic)

- The new SECAP of the city of Cuneo and verify how this model is present among the actions foreseen in the Plan.

  The SECAP could promote the realization of RES production and storage systems in several ways. It could foresee to modify the municipal building regulation in order to promote the installation of these systems in case of refurbishment of residential buildings or define municipal subsidies to citizens that want to invest in these systems. The SECAP could also include the implementation of thermal storages in the district heating grid to optimize the system and increasing its efficiency.

- The ongoing initiatives on the creation of energy communities in the Piedmont region

  The Piedmont Region promotes the establishment of energy communities in order to optimise the process of decarbonisation of the economic and territorial system, and to facilitate the production, exchange and consumption of energy generated mainly from renewable sources, as well as ways of improving energy efficiency and reducing energy consumption. The Region particularly support the creation of energy communities with an economical support provided to the entities who intends to establish an oil free zone. Four energy communities will be formed in the following areas: Val Susa, Val Maira, Valle Po and Pinerolese.

5. Implemented actions and links to deliverables, outputs

The 2nd deployment desk meeting involved about one hundred people, some via online call and others in the meeting room. The participants were local decision makers, members of the community, members of the biomass district heating network, sectoral authorities, energy experts, etc. involved in the process of controlling and planning energy storage and implementing energy communities.

In the context of communication activities, during the 2nd deployment desk meeting a rollup of the project was exposed and the solar power banks were also distributed to participants in combination with the project cotton bags and leaflets.

6. Results, effects and the response

During the 2nd deployment desk meeting, two groups were formed to discuss about the pilot execution, the opportunities offered by the installation of storage systems for energy transition and as driver to boost energy communities. The main regulatory and technical constraints for the spread of energy communities were also discussed. At the end of the meeting, the two working group leaders presented the results of the discussions. Afterward a short discussion of the result was carried out.

The 2nd deployment desk meeting has provided the participants with some good ideas for carrying out the next actions foreseen by the project, primary for the implementation of the pilot but also an overview about the actual energy community's framework was given.

About possible future project synergies:

- Seminars organised by CRC Bank Foundation (Associated Partner) on the regional, national and european policies for energy efficiency and RES.
- Meetings organised by the Piedmont Region on the theme of energy communities in the framework of the Interreg Europe SHREC project

About the energy communities:

- Promoting a collective and territorial approach to the design of new efficient energy systems, that means creating dialogue and synergy between different initiatives (energy communities, European projects, etc.) to optimise both the resources invested and the services offered
- Informing citizens and communities of opportunities offered by implementation of energy communities.
- At this moment there is an obstacle to the promotion of energy communities due to the reason that the regulatory framework is still in the definition phase which does not allow to clearly outline the costs and benefits related to the establishment of an energy community.
- Overcoming the market logic that currently defines the basis of the regulatory system: logic of selling and buying energy (actual energy market) Versus logic of producing and exchanging energy (energy community)

7. Conclusion

At the end of the meeting, a brief feedback was collected from the participants, who considered it useful to participate in the deployment desk meeting.

8. Annexes

8.1. Invitation and Agenda

8.2. List of participants

Participants of the 2nd Deployment Desk meeting:

LIST OF PARTICIPANTS: D. T.1.1.3 2nd Deployment Desk meeting, Cuneo, 09.07.2020

N°	NOME E COGNOME	ENTE/ORGANIZZAZIONE	CONTATTO	FIRMA
1	SILVIA AGNELLO	COMUNE CUNEO / PROM. SVILUPPO SOSTENIBILITÀ TERRITORIO	silvia.agnello@comune.cuneo.it	
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5	PIER-ANGELO MARSANI	Comune di Cuneo	pierangelo.marsani@comune.cuneo.it	
6	BRUNO BRIGNONE	STUDIO BRIGNONE	Comune Cuneo	
7	MAURO CORNAGLIA	ENVIPARK	mauro.cornaglia@envipark.com	

LIST OF PARTICIPANTS: D. T.1.1.3 2nd Deployment Desk meeting, Cuneo, 09.07.2020

N°	NOME E COGNOME	ENTE/ORGANIZZAZIONE	CONTATTO	FIRMA
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13	Walter MARTINETTO	COMUNE CUNEO	walter.martinetto@comune.cuneo.it	
14	Alexia BOULANGER	Environment Park	alexia.boulanger@envipark.com	

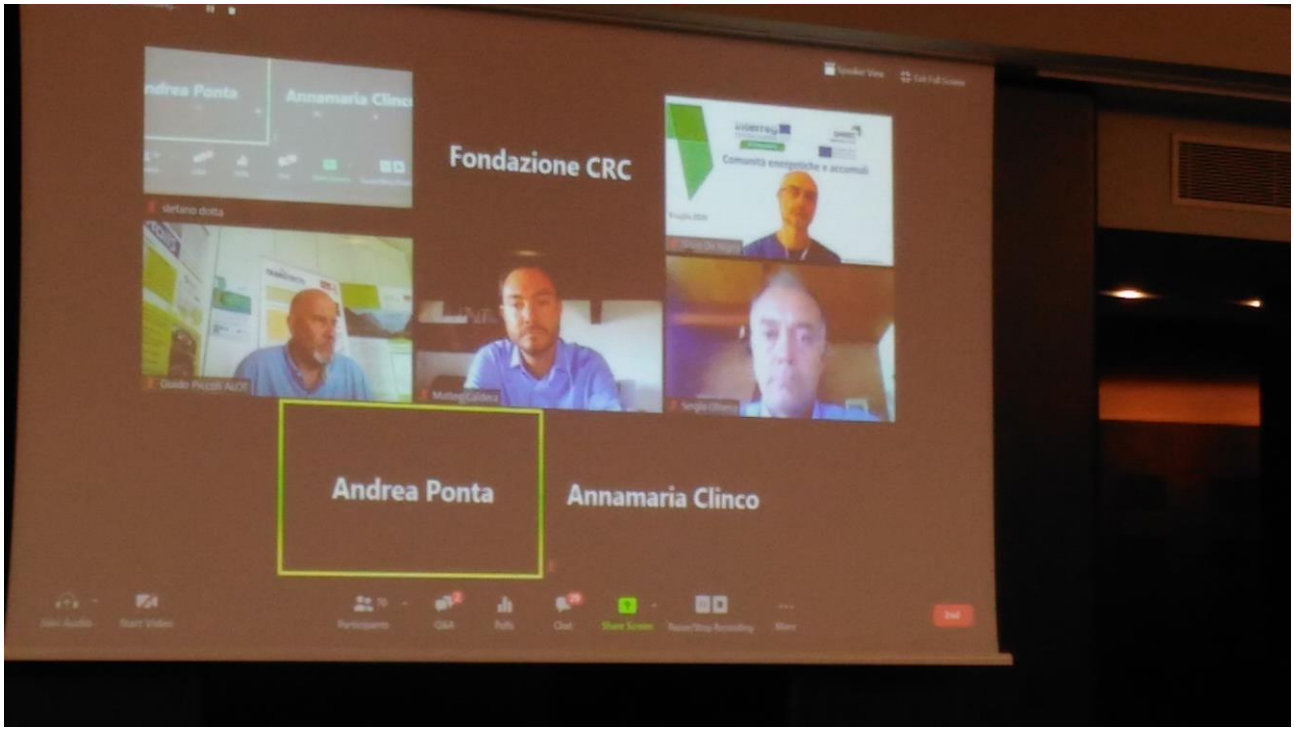
LIST OF PARTICIPANTS: D. T.1.1.3 2nd Deployment Desk meeting, Cuneo, 09.07.2020

N°	NOME E COGNOME	ENTE/ORGANIZZAZIONE	CONTATTO	FIRMA
15	Dario ALBERTO	~~Cittu~~ LIBERO PROFESS.	ad.ing@live.it	
16	Angelo TARTAGLIA	Politecnico Torino	angelo.tartaglia@polito.it	
17				
18				
19				
20				
21				

8.3. Pictures

Speakers' table

Meeting room



Discussion via online connection

Discussion in the meeting room

8.4. Media coverage

Fondazione CRC official page

8.5. Web-links

https://www.targatocn.it/2020/07/10/leggi-notizia/argomenti/attualita/articolo/ascensore-inclinato-panoramico-di-cuneo-tornano-a-riunirsi-gli-stakeholder-del-tavolo-store4huc.html

https://www.ideawebtv.it/2020/07/10/cuneo-ascensore-inclinato-panoramico-tornano-a-riunirsi-gli-stakeholder-del-tavolo-store4huc/

https://it.geosnews.com/p/it/piemonte/cn/ascensore-inclinato-panoramico-di-cuneo-tornano-a-riunirsi-gli-stakeholder-del-tavolo-store4huc_30109594