

Improving the performance of District Heating Systems in Central and Eastern Europe

Pilot projects

Report on local working groups

Republic of Slovenia

Horizon 2020 (H2020-EE-2017-PPI)
Project N°784966



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N°784966.



This project received co-funding from the German Federal Ministry of Economic Cooperation and Development.

PROJECT INFORMATION

Lead partner for the deliverable	North-West Croatia Regional Energy Agency (REGEA)
Document type	report
Dissemination level	public
Date of submission	September 15, 2020
Author(s)	Nejc Jurko (KSSENA)
Reviewer(s)	Stefanie Schaedlich, GIZ Magdalena Sperl, GIZ Marko Čavar, REGEA

List of Abbreviations

AT	Austria
CEE	Central and Eastern Europe
CoM	Covenant of Mayors for Climate and Energy
CZ	Czech Republic
DisComEx	Dissemination, Communication and Exploitation
DG	Directorate-General of the European Commission
DHS	District Heating System
EBRD	European Bank for Reconstruction and Development
EU	European Union
GHG	Greenhouse Gas
HR	Croatia
KPI	Key Performance Indicator
LV	Latvia
LWG	Local Working Groups
NGO	Non-Governmental Organisation
RES	Renewable Energy Source(s)
SI	Slovenia
SRB	Serbia
UKR	Ukraine
WP	Work Package

Summary of the project

The project “KeepWarm - Improving the performance of district heating systems in Eastern Europe” is funded under the EU Horizon 2020 programme. Its objective is to accelerate cost-effective investments in the modernisation of District Heating Systems (DHS) in Central and Eastern Europe (CEE). KeepWarm is most active in seven countries: Austria (AT), Croatia (HR), Czech Republic (CZ), Latvia (LV), Serbia (SRB), Slovenia (SI) and Ukraine (UKR). The project focuses on this region, and these particular countries, because in most cases DHSs are frequently still inefficient and for the most part overly reliant on fossil fuels (especially gas, coal or oil).

The aim of this initiative, launched in April 2018, is to modernise DHSs around the whole region in a more sustainable manner. By improving system operations and promoting a switch to less-polluting sources, like renewable energy sources (RES), KeepWarm will contribute to reducing greenhouse gas (GHG) emissions. The eleven project partners strive to ensure that best practices for environmentally-friendlier heating and cooling will be taken up across Europe, replicating KeepWarm’s approach in other countries and regions, even beyond the end of the project in September 2020.

Project objectives

KeepWarm’s specific objectives are:

- At least 450 relevant stakeholders with increased capacities on technical, organisational, financial and managerial aspects – includes 150 DHS operators;
- At least 95 **DHS operators** are able to **develop business plans** and to identify the most suitable **financial model** for modernisation of their own DHS;
- At least 23 **business plans for the modernisation** of DHSs have been developed and **sources for investment** have been identified;
- DHS network **retrofitting** is addressed in at least 10 local **energy plans** and 7 regional or **national strategies** or plans;
- At least 23,300 **relevant stakeholders** (directly) and 125,000 (indirectly) **reached** across Europe in order to **replicate the project outputs** in primary and secondary target regions and ensure the project’s impact;
- **Support EU policies and initiatives**, such as the Covenant of Mayors for Climate and Energy (CoM) and DecarbHeat, by exploiting key lessons from KeepWarm activities and pilots to disseminate best practices across Europe.

KeepWarm consortium partners

LOGO	PARTNER NAME	SHORT	COUNTRY
 giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) GmbH	GIZ	Germany
	University of Zagreb Faculty of Mechanical Engineering and Naval Architecture	UNIZAG FSB	Croatia
	Landeskammer für Land- und Fortwirtschaft in Steiermark	LWK	Austria
	Regionalna Energetska Agencija Sjeverozapadne Hrvatske	REGEA	Croatia
	Jožef Stefan Institute Energy Efficiency Centre	JSI	Slovenia
	ICLEI European Secretariat GmbH	ICLEI Europe	Germany
	Teplarenske Sdruzeni Česke Republiky	TSCR	Czech Republic
	Biedriba Zemgales Regionala Energetikas Agentura	ZREA	Latvia
	Zavod Energetska Agencija za Savinjsko Salesko in Korosko	KSSENA	Slovenia
	LLC KT-Energy Consulting	KT-Energy	Ukraine
	Institut za Nuklearne Nauke Vinca	VINCA	Serbia

Content

List of Abbreviations	2
Summary of the project	3
Project objectives.....	3
KeepWarm consortium partners	4
Content	5
Executive summary.....	6
Introduction	9
Local working group – meeting 1.....	10
Local working group – meeting 2.....	12
Local working group – meeting 3.....	14
Local working group – meeting 4.....	16
Local working group – meeting 5.....	18
Local working group – meeting 6.....	20
Local working group – meeting 7.....	22
Local working group – meeting 8.....	24
Local working group – meeting 9.....	26
Local working group – meeting 10.....	28
Local working group – meeting 11	30
Future activities of local working groups	32

Executive summary

The switch from a fossil fuel and inefficient DH system to clean and renewable alternatives with low level of losses is a challenging task. Moreover, other competitive heating solutions in heating sector make it difficult for other heating alternatives, such as DH to compete. Besides DH systems often were not able to provide appropriate value of their services from technical, environmental, societal as well as economic perspective. In other words, DH systems often are often in a difficult position due to many reasons. As a results, they often lack of ambitious plans and performing relevant activities such as development of feasibility studies, complicated public procurement procedures, evaluation of RES potential, successfully negotiation with both existing and future end-consumers, identification and application to both local/regional/national and EU funds (lack of investment strategy). On the other hand, they often lack work force and capacity to achieve ambitious plans due to lack of financial funds or know-how. To foster modernization of above-mentioned DHSs, the KeepWarm project focuses on modernization of pilot DH systems in 7 partner countries (Austria, Croatia, Czech Republic, Latvia, Slovenia, Serbia and Ukraine).

Planned investments in pilot DHSs developed in previous activities of projects such as feasibility studies, business plans and selection of pilot DHSs for creating investment opportunities during and beyond project period, project partners committed to provide support to DHSs representatives throughout an interdisciplinary approach with the aim of achieving investments. After identification of current state and barriers which hinder successful investments, KeepWarm consortium organized local working groups in each country the aim of providing tailor-made assistance to remove barriers. The goal of the local working groups was to include all relevant stakeholders, which can be identified through the stakeholder analysis, to provide input for business plan development and feedback on future retrofitting plans as well as on barrier removal for DHS. This report is created as country-by-country overview of organized local working group meetings with the aim of presenting systematic and continuous activities of KeepWarm partners toward DHSs representatives and other stakeholders with the aim of achieving investments. In addition to this, each project partner used a tailor-made KeepWarm approach which is a result of previously taken activities such as feasibility studies, business plans and selection of DHSs to be retrofitted.

In case of Slovenia, project partner KSSENA organized 11 meetings on different topics with respective DHSs representatives which were attended by 80 participants. In each initial meeting with DHSs, feasibility studies created through the project have been presented, as well as discussed in terms of modifications and further steps. Meetings taken afterwards have been a result of a continuous collaboration between Slovenian partner and DHSs representatives in achieving investments according to business plans.

DHS Velenje: implementation of scenario 1 of the elaborated feasibility study - optimization of the DH network, as well as comparison of alternative energy sources (and energy storage)

DHS Slovenj Gradec: implementation of scenario 3 of the elaborated feasibility study - new Biomass Boiler

DHS Ptuj: implementation of scenario 3 of the elaborated feasibility study which is the combination of scenario 1 (renewal of boiler house) and scenario 2 (new customers and grid expansion).

It should be mentioned that, due to the pandemic situation (COVID-19), most of planned and already organized meeting have been cancelled and adjusted to virtual platforms which definitively hindered implementation of scenarios and reduced a number of total meetings taken. Following table presents basic information:

LOCAL WORKING GROUP MEETING 1
Pilot: DHS Velenje Number of stakeholders: 8 Main topics: Intro to LWG, feasibility studies, on-going projects, twinning programme
LOCAL WORKING GROUP MEETING 2
Pilot: DHS Velenje Number of stakeholders: 8 Main topics: Capacity building, created documentation under KeepWarm, pre-feasibility study and feasibility study on alternative technical solutions
LOCAL WORKING GROUP MEETING 3
Pilot: DHS Velenje Number of stakeholders: 9 Main topics: Expert meeting on feasibility studies, twinning programme
LOCAL WORKING GROUP MEETING 4
Pilot: DHS Velenje Number of stakeholders: 7 Main topics: Feasibility studies, twinning programme
LOCAL WORKING GROUP MEETING 5
Pilot: DHS Velenje Number of stakeholders: 9 Main topics: Feasibility study, business plan
LOCAL WORKING GROUP MEETING 6
Pilot: DHS Slovenj Gradec Number of stakeholders: 5 Main topics: Feasibility study, business plan
LOCAL WORKING GROUP MEETING 7
Pilot: DHS Slovenj Gradec Number of stakeholders: 5 Main topics: Feasibility studies, on-going projects, external financing, legislative proposals
LOCAL WORKING GROUP MEETING 8
Pilot: DHS Slovenj Gradec Number of stakeholders: 5 Main topics: Public procurement process, preparation of application for national funds, strategic document – local energy concept

LOCAL WORKING GROUP MEETING 9

Pilot: DHS Slovenj Gradec

Number of stakeholders: 6

Main topics: Investment into biomass boiler – feasibility study and business plan, development of strategic document

LOCAL WORKING GROUP MEETING 10

Pilot: DHS Ptuj

Number of stakeholders: 9

Main topics: Feasibility study, business plan, identification of available national funds

LOCAL WORKING GROUP MEETING 11

Pilot: DHS Ptuj

Number of stakeholders: 9

Main topics: Investment into biomass boiler, biomass supply, twinning programme

Introduction

As defined in the Grant Agreement, this deliverable N°4.2 Report on local working groups is closely tight with the work package 4's objective – achieve at least 15 DHS investments in at least 5 countries, using suitable technical and financial approaches (developed in Work Package 3), which will lead to increased efficiency and RES use. Throughout the task 4.2 Support to DH operators/owners to remove barriers and achieve investments, it is stated in the Grant Agreement that the main objectives are to provide a tailor-made support, remove barriers and achieve above mentioned investments.

The specific topics and focus of the conducted meetings were defined based on the needs of each DHS operator/owner and related stakeholder which is defined throughout the Task 4.1 Selection of DHS for retrofitting, investments and working groups. Working groups are established for each DHS to be retrofitted and include at least representatives of DHS operators/owners, local government and end consumers (and possible other key stakeholders if needed). The local working groups are responsible for the implementation and monitoring of the DHS retrofits. KeepWarm partner were mainly facilitator, discussion leader and triggering reflections and provide support in planned actions

In addition, the working groups will consider results of the Work Package 3 in order to provide an adequate support to secure investments:

- Supporting choices in the optimal financial approach and business model (combination of public and private capital, financing schemes like on-bill financing and similar)
- Support and guidance in preparation and application for potential grants (for example, EU structural funds through the Integrated Territorial Investment mechanism, and others)
- Supporting negotiations with customers (joint meetings with project partners as facilitators)
- Support on specific technical issues (in addition to the ones analysed in WP3)
- Support with legal issues (e.g. unclear ownership/responsibilities of heating substations)
- Exchange with twins – and including lessons learnt
- Conclusions for future scenarios – long-term orientation

The outcome of Task 4.2 is the realization of 15 actual investments in DHS retrofits. Therefore, this document presents steps taken towards the above-mentioned goal through the activity of local working groups in terms of identification of problems, discussions, exchange of knowledge, remove of barriers and proposing relevant solutions.

Local working group – meeting 1

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Velenje
Date	December 2 nd , 2019
Location	Velenje
Number of participants/ Stakeholder groups	3 participants from KSENA 4 participants from Municipality of Velenje, Šoštanj and Šmarto ob Paki 1 participant from KP Velenje (DHS Velenje)
Topics(s)	Intro to LWG, feasibility studies, on-going projects, twinning programme
Minutes by	Nejc Jurko

Agenda



Trajnostni razvoj sistema daljinskega ogrevanja v Šaleški dolini

Srečanje bo potekalo v sredo 2. 12. 2019 v Velenju med 10:00 in 14:00

10.00 – 11.00	Strateške usmeritve pri razvoju sistemov daljinskega ogrevanja <i>Uvodni pozdrav (Boštjan Krajnc, Direktor energetske agencije KSENA)</i>
11.00 – 12.00	Predstavitev načrtov razvoja KP Velenje
12.00 – 13.00	DISKUSIJA in SPREJEM PLANA DELA
13.00	KOSILO

Minutes and main Conclusions

For Velenje (Šaleška Valley) district heating system KSSENA had started with the working group (WG) meetings with high representatives of company founders. These are Municipalities of Velenje, Šoštanj and Šmarto ob Paki, Mayors and Municipal leaders attended this meeting together with the CEO of KP Velenje.

KSSENA had presented the KeepWarm project and key concepts for the future development of the DH network in Šaleška Valley. The attendees agreed that LWG continues with the KeepWarm activities, and in the next step, KP Velenje should prepare a technical feasibility study on alternative energy sources and a couple of other documents.

Firestone will address the comparison of alternative energy sources for end-users and second will be the feasibility study for PV power plants on the facilities of KP Velenje.

The decision-makers agreed that KP Velenje continues with grid renovation, depending on their available budget.

The next meeting shall be organized in the next six months, and the main topic will be a presentation of the documents listed above.

Twinning activities

Twin partners were presented and Velenje is paired with Samobor (Croatia). KSSENA will be in touch with the twin partners soon. The WG agreed with further cooperation.

Monitor of retrofit implementation steps

In the next WG meeting detail grid renovation plan will be presented, by technical experts.

Local working group – meeting 2

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Velenje
Date	December 19, 2019
Location	Velenje
Number of participants/ Stakeholder groups	2 from KSSENA 4 from Municipality of Velenje, Šoštanj and Šmarto ob Paki 2 from KP Velenje (DHS Velenje)
Topics(s)	Capacity building, created documentation under KeepWarm, pre-feasibility study and feasibility study on alternative technical solutions
Minutes by	Nejc Jurko

Agenda



Trajnostni razvoj sistema daljinskega ogrevanja v Šaleški dolini - srečanje delovne skupine

Delavnica bo potekala 19. 12. 2019 v Velenju med 9:00 in 14:00

9.00 – 11.00	Pregled aktivnosti v okviru projekta KEEPWARM
	<i>Uvodni pozdrav (Boštjan Krajnc, Direktor energetske agencije KSSENA)</i>
	<i>Podrobna predstavitev projekta KEEPWARM (Nejc Jurko)</i>
	<i>Predstavitev načrta za obnovitev omrežja (Ervin Miklavžina)</i>
	<i>Predstavitev priprave študij izvedljivosti za postavitev sončnih elektrarn na objekte KP Velenje (Sašo Mozgan)</i>
11.00 – 12.00	DISKUSIJA in izmenjava MENENJ
12.00 – 13.00	Predstavitev zahtev za izdelavo dokumenta: Študija izvedljivosti alternativnih virov proizvodnje toplotne energije za sistem daljinskega ogrevanja Šaleške doline
13.00	KOSILO

Minutes and main Conclusions

Throughout the meeting, consortium provided support to DHS representatives in various forms and areas. Several documents regarding future development, prepared modernization, decarbonisation and optimisation of Velenje district heating system, a project partner, KSSENA. Due to KeepWarm project, KSSENA organised training for the key employees of Velenje utility company (Komunalno podjetje Velenje, hereinafter KPV). Training itself was focused on organisational issues, preparation of business plans and feasibility studies. A meeting involved a conversation about KPV's immense knowledge and their very own design and engineering group. LWG decided to prepare a pre-feasibility study regarding alternative energy sources and a feasibility study, which consists of comparison of the most interesting technical solutions.

On another hand, legal opinion and private investors investing in public infrastructure were discussed. However Slovenian legislation and regulatory framework make it legal and possible for a private investor to invest in public infrastructure. Attracting private investors was another topic mentioned and discussed meanwhile having a meeting. However, KSSENA will continue developing sustainable environmental and financial projects with added value for community.

Twinning activities

Twin partners were presented and Velenje is paired with Samobor (Croatia). KSSENA will be in touch with the twin partners soon. Moreover, project partners have already started discussing the documents, which will be shared with twin partners. It will allow both partners to prepare each own data collection and create documentation, which will later be shared with the partners. However, participants agreed on contributing with collecting and sending all necessary information to complete the project. Soon, all the visits and dates will be discussed and announced.

Monitor of retrofit implementation steps

Mr. Miklavžina presented the grid and substation retrofitting plan for 2020. The technical documentation is under preparation and will be ready by march and investment work are scheduled in the summer.

Local working group – meeting 3

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Velenje
Date	February 21, 2020
Location	Velenje
Number of participants/ Stakeholder groups	3 participants from KP Velenje 1 participant from engineering company 2 participants from IDE (Institute for district heating) 3 participants from KSENA
Topics(s)	Expert meeting on feasibility studies, twinning programme
Minutes by	Nejc Jurko

Agenda



Trajnostni razvoj sistema daljinskega ogrevanja v Šaleški dolini - srečanje tehnične delovne skupine

Srečanje bo potekalo 21. 02. 2020 v Velenju med 9:00 in 14:00

9.00 – 11.00	Predstavitev študije izvedljivosti
	<i>Uvodni pozdrav (Sašo Mozgan, KSENA)</i>
	<i>Podrobna predstavitev projekta KEEPWARM in »twinig« sistema v Samoborju (Nejc Jurko, KSENA)</i>
	<i>Predstavitev pričakovanj od študije izvedljivosti (Ervin Miklavžina KPJ)</i>
	<i>Predstavitev priprave študij izvedljivosti (Sašo Mozgan)</i>
11.00 – 12.00	DISKUSIJA in izmenjava MENENJ o alternativnih virih energije
12.00 – 13.00	Priprava načrta za dokončanje dokumenta
13.00	KOSILO

Minutes and main Conclusions

The 3rd working group meeting had been called for technical experts for the development of Feasibility study on alternative energy sources for Šaleška Valley district heating systems. The meeting was attended by experts' from KP Velenje, an engineering company, from institute for District heating (IDE) and KSSENA. All attendees had been noticed a few weeks before, so they had prepared material for the discussion and finalization of FS. WG discussed possible alternative sources and different scenarios for technical viability of heat available technology, for each of the alternative energy sources. Furthermore, WG designated the actions, and distribute the task until the next meeting, when the document will be finalized.

Twinning activities

The technical WG examine the business plan of DH in Samobor, with emphasis on solar thermal installation. The representative of DH Velenje was very interesting in their solution, and KSSENA will gather more information, including the technical specification of the solar field, etc

Monitor of retrofit implementation steps

The technical WG designated detail time plan, for the preparation of the FS.

Local working group – meeting 4

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Velenje
Date	March 5, 2020
Location	Velenje
Number of participants/ Stakeholder groups	3 participants from KSSENA 2 participants from KP Velenje 3 participants from engineering company
Topics(s)	Feasibility studies, twinning programme
Minutes by	Nejc Jurko

Agenda



Trajnostni razvoj sistema daljinskega ogrevanja v Šaleški dolini - srečanje tehnične delovne skupine

Srečanje bo potekalo 05. 03. 2020 v Velenju med 9:00 in 14:00

9.00 – 11.00	Zaključek izdelave idejne študije <i>Uvodni pozdrav (Sašo Mozgan, KSSENA)</i> <hr/> <i>Podrobna predstavitev projekta KEEPWARM in »twinig« sistema v Samoborju (Nejc Jurko, KSSENA)</i> <hr/> <i>Predstavitev pričakovanj od študije izvedljivosti (Ervin Miklavžina KPVI)</i> <hr/> <i>Predstavitev priprave študij izvedljivosti (Sašo Mozgan)</i>
11.00 – 12.00	Predstavitev izdelave študije o alternativnih virih ogrevanja za končne uporabnike
12.00 – 13.00	Predstavitev priprave študije izvedljivosti za postavitve sončnih elektrarn na objektih <u>KP Velenje</u>
13.00	KOSILO

Minutes and main Conclusions

The second technical WG meeting was called out for finalization of the Feasibility study and presentation of a final solution to the representatives of DH Velenje. Moreover, KSSENA presented key outlines for study on alternative sources for residential users in Šaleška Valley, mainly ones that are connected to the DH network and Feasibility study for solar power plants on the facilities for the KP Velenje., with analyses of their consumption and cost comparison.

Attendees agreed that documents, when finished, are ready for presentation to KP Velenje founders and municipal leaders.

Twinning activities

KSSENA presented the case of Samobor and shared contacts for development of detail technical analysis for the solar thermal field.

Monitor of retrofit implementation steps

The three documents:

- Feasibility study on alternative energy sources for Šaleška Valley DH,
- Comparison of alternative energy sources for end-users, and
- Feasibility study for solar power plants on the facilities of KP Velenje,

will be finalized in next months and then will be presented to the management of KP Velenje and municipal leaders

Local working group – meeting 5

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Velenje
Date	June 4, 2020
Location	Velenje
Number of participants/ Stakeholder groups	3 participants from KSSENA 2 participants from KP Velenje 3 participants from MOV (municipality of Velenje)
Topics(s)	Feasibility studies, comparison of various energy sources, identification of available internal and external funds, screening of Slovenian legislation
Minutes by	Nejc Jurko

Agenda



Trajnostni razvoj sistema daljinskega ogrevanja v Šaleški dolini - srečanje delovne skupine

Delavnica bo potekala 4. 6. 2019 v Portorožu med 14:00 in 18:00

14.00 – 15.00	<p>Predstavitev Idejne zasnove za alternativne vire toplote v sistemu daljinskega ogrevanja Šaleške doline</p> <p>Uvodni pozdrav (Boštjan Krajnc, Direktor energetske agencije KSSENA)</p> <p>Nejc Jurko (KSSENA), Sašo Mozgan (KSSENA)</p>
15.00 – 16.00	<p>Diskusija in odgovori na vprašanja ter razjasnitev posameznih tehnologij.</p>
16.00 – 17.00	<p>Predstavitev študije o alternativnih virih ogrevanja za končne uporabnike</p> <p>Sašo Mozgan (KSSENA)</p> <p>Predstavitev študije izvedljivosti o postavitvi sončnih elektrarn na objekte KP Velenje (Sašo Mozgan, Nejc Jurko, KSSENA)</p>
17.00 – 18.00	<p>Razprava o zagotovitvi finančnih sredstev za investicije (Vodi Boštjan Krajnc KSSENA)</p>
18.00	<p>Pogostitev</p>

Minutes and main Conclusions

The main topic of this final Working Group Meeting was a presentation of Feasibility studies and other documents developed under the KeepWarm Project.

First experts from KSSENA presented the FS on alternative energy sources and in detail explain the key technical characteristic of each energy source. Then the potential environmental impact of each technology and impact on the local economy were discussed.

Furthermore, LWG discussed the detailed list of potential financial resources for DHS investments, which was prepared by KSSENA - focused on larger investment described in the feasibility study as funds for grid renovation and modernization are reserved for companies and municipal budget. After reviewing EU funding schemes, KSSENA came to a conclusion, that there is a potential to combine grants and EIB loans for carbon-free heat generation.

Further on, KSSENA presented a case study with a comparison of various energy sources for end consumers. However, LWG concluded, which states that DHS network is the optimum choice for inhabitants. In conclusion, the study projects that in forms of comfort, economic and environmental possibilities, DHS is still the best option of space heating. KSSENA also mentioned that KPV will use the results of the study for consumer relations and marketing materials.

On another hand, legal opinion and private investors investing in public infrastructure were discussed. However Slovenian legislation and regulatory framework make it legal and possible for a private investor to invest in public infrastructure. Attracting private investors was another topic mentioned and discussed meanwhile having a meeting. However, KSSENA will continue developing sustainable environmental and financial projects with added value for community.

Twinning activities

KSSENA inform the regional WG than study visit has been cancel and postponed to the autumn. If the s COVID situation will still prevent the physical meeting, KeepWarm consortium will organize the online event.

Monitor of retrofit implementation steps

The presented studies have been only first step in new energy source for DH Velenje. In the meantime, the management of KP Velenje will focused on grid renovation and lowering the operating water temperatures. KSSENA will further develop municipal building renovation plan and project the energy use for space heating in the municipality.

Local working group – meeting 6

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Slovenj Gradec
Date	October, 3, 2019
Location	Velenje
Number of participants/ Stakeholder groups	3 participants from KSSENA 2 participants from Komunala Slovenj Gradec (DHS)
Topics(s)	Feasibility study, business plan
Minutes by	Nejc Jurko

Agenda



Trajnosti vir energije za daljinski sistem v Slovenj Gradcu - srečanje delovne skupine

Delavnica bo potekala 3.10.2019 v Velenju med 12:00 in 14:00

12.00 – 13.00	Usmeritve pri razvoju sistema daljinskega ogrevanja - biomasa <i>Uvodni pozdrav (Boštjan Krajnc, Direktor energetske agencije KSSENA)</i> <i>Biomasa (Nejc Jurko)</i> <i>Zasnova poslovnega načrta (Sašo Mozgan)</i>
13.00 – 14.00	Praktične rešitve za zagotavljanje trajnostne in varne oskrbe z lesnimi gorivi ter predstavitev mednarodnih standardov za uporabo lesnih goriv <i>Onesnaženost zraka s PM delci zaradi izgorevanja biomase (Nejc Jurko)</i>
14.00	KOSILO

Minutes and main Conclusions

The first working group meeting for DH system in Slovenj Gradec took place in Velenje, where KSENA presented the KeepWarm project and discuss key elements of the feasibility study and business plan. Representative of Komunala Slovenj Gradec (which operates the municipal district heating) agrees that KSENA prepares a business support document and analyses of potential biomass supply. In the next phase, the Komunla SG will develop technical documentation and KSENA will support them in a public tender for technology supplier and in process of obtaining national co-financing.

The participants agree that the project will be presented to the Mayor and municipal leaders by the end of the month in order to follow a very ambitious timeline.

Twinning activities

This meeting did not include any activities focused on twinning.

Monitor of retrofit implementation steps

This meeting did not include any activities on retrofit implementation plans.

Local working group – meeting 7

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Slovenj Gradec
Date	October 24, 2019
Location	Slovenj Gradec
Number of participants/ Stakeholder groups	3 participants from KSENA 2 participants from Komunala Slovenj Gradec (DHS)
Topics(s)	Feasibility studies, on-going projects, external financing, legislative proposals
Minutes by	Nejc Jurko

Agenda



Trajnosti vir energije za daljinski sistem v Slovenj Gradcu - srečanje delovne skupine

Delavnica bo potekala 24. 10. 2019 v Slovenj Gradcu med 10:00 in 14:00

PROGRAM:

9.30 – 10.00	Uvodni pozdrav (Tilen Kugler in Boštjan Krajnc)
10.00 – 11.00	Pomen sodelovanja deležnikov za razvoj sistemov daljinskega ogrevanja <i>(Boštjan Krajnc, Direktor energetske agencije KSENA)</i>
11.00 – 11.30	DISKUSIJA
11.30 – 13.00	Predstavitev investicije v posodobitev kotlovnice in prehod na nov energetski vir v daljinskem sistemu Slovenj Gradec Sašo Mozgan (KSENA)
13.00 – 14.00	Zagotavljanje kakovosti zraka
14.00	KOSILO

Minutes and main Conclusions

It has been decided that both KSSENA and Komunalno Podjetje Slovenj Gradec. agreed on developing a long-term plan for each pilot project in order to access the overall potential for modernization of all of them. Moreover, KSSENA will prepare both, feasibility study and business plan. Municipality of Slovenj Gradec and Komunalno podjetje Slovenj Gradec attended training where they contributed to discussions an increased technical concerns and capacity of preparation of project's documentation. On another hand, the investment on biomass boilers is demanding.

In upcoming months KSSENA will take care and prepare quality management guides for operating the biomass DHS. In terms of technical support, KSSENA provide various documentation and training seminars with topics about secure and sustainable biomass supply.

The investment in new biomass boilers is the first step towards a comprehensive renovation of DHS. KSSENA will continue working on local energy concept for the municipality of Slovenj Gradec. Moreover, the operator applied for the national grants, that have been distributed under the Ministry of infrastructure "Call for Co-Financing". The application process itself has been quite complex and knowledge gain with KeepWarm projects helped the KPSG, to successfully apply for the grants. Conversely, KSSENA is directly involved in the development of the Local energy concept (similar to SEAP).

In terms of legal support, KSSENA prepared the legal basis of including private investors in the modernization of DHS. Further on, KSSENA came across an agreements, which states that KSSENA will prepare framework for sustainable biomass supply and quality management standards.

In addition, the Municipality will define main heating resources for the urban area of Slovenj Gradec. The goal is, to set a regulation where district heating system will be recognized, as the main option for space heating in the central town area. Even though, the road is the main concern in terms of new investment in biomass boilers, building a bypass is one of the main priorities. Moreover, PRSG and Slovenj Gradec established a working group in order to inform inhabitants about the positive effects of investments

Twinning activities

This meeting did not include any activities focused on twinning.

Monitor of retrofit implementation steps

This meeting did not include any activities on retrofit implementation plans.

Local working group – meeting 8

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Slovenj Gradec
Date	November 25, 2019
Location	Slovenj Gradec
Number of participants/ Stakeholder groups	3 participants from KSENA 2 participants from Komunala Slovenj Gradec
Topics(s)	Public procurement process, preparation of application for national funds, strategic document – local energy concept
Minutes by	Nejc Jurko

Agenda



Trajnosti vir energije za daljinski sistem v Slovenj Gradcu - srečanje delovne skupine

Delavnica bo potekala v sredo 25. 11. 2019 v Slovenj Gradcu med 9:00 in 12:00

PROGRAM:

09.00 – 10.00	Predstavitev poslovnega načrta za investicijo na kotel na biomaso
	<i>Predstavitev poslovnega načrta (Sašo Mozgan)</i>
10.00 – 12.00	Opredelitev potreb po nadaljnji podpori DS Slovenj Gradec
	Prijava na razpis MZI (Nejc Jurko)
	Trajnostna oskrba z biomaso (Nejc Jurko)
13.00	KOSILO

Minutes and main Conclusions

In this technical WG meeting, the future activities in preparation of the public procurement procedures for the selection of technology supplier and preparation of the application for the call of the Ministry of infrastructure were discussed. KSSENA will support Komunala Slovenj Gradec in all activities.

The experts went through Business plan developed under KeepWarm project and discuss different scenarios and risk of implementation. Additionally, KSSENA will start with the preparation of strategic document - Local energy concept, where primary energy sources for the municipal areas going to be designated and this will be the first step for grid renovation and potential expansion.

Twinning activities

This meeting did not include any activities focused on twinning.

Monitor of retrofit implementation steps

The attendees discuss on mitigation of risks and they confirm the ambitious time schedule for the investment.

Local working group – meeting 9

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Slovenj Gradec
Date	May 27, 2020
Location	Slovenj Gradec
Number of participants/ Stakeholder groups	3 participants from KSENA 1 participant from Komunala Slovenj Gradec 2 participants from Municipality of Slovenj Gradec
Topics(s)	Investment into biomass boiler – feasibility study and business plan, development of strategic document
Minutes by	Nejc Jurko

Agenda



Trajnosti vir energije za daljinski sistem v Slovenj

Gradcu - srečanje delovne skupine

Delavnica bo potekala 27. 05. 2019 v Slovenj Gradcu med 9:00 in 14:00

PROGRAM:

10.00 – 11.00	Predstavitve poslovnega načrta in razvoja projekta <i>(Boštjan Krajnc, Direktor energetske agencije KSENA)</i>
11.00 – 11.30	DISKUSIJA
11.30 – 13.00	Tehnične značilnosti novega kotla Sašo Mozgan (KSENA)
13.00 – 14.00	Priprava lokalnega energetskega koncepta
14.00	KOSILO

Minutes and main Conclusions

Representatives of the Municipality of Slovenj Gradec received information about the investment and future steps for achieving a high standard of operation and sustainable biomass supply. The technical characteristic of new biomass boiler and energy storage unite, have been presented.

The second part of the meeting was intended to develop a strategic document, Local energy concept (like SEAP), where energy efficiency measures for the whole municipality will be set and described. The renovation and expansion of the DH network is a must and one of the key priorities for the Municipality. Moreover, Municipal representative wants to set even higher EE measures, with an ambitious goal to become carbon neutral municipality by 2030. This goal does not include emissions caused by traffic.

Twinning activities

This meeting did not include any activities focused on twinning.

Monitor of retrofit implementation steps

The members of WG discussed the achievements so far. The technology supplier has been selected through the public procurement process and application for national co-funding was submitted.

Local working group – meeting 10

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Ptuj
Date	August 2 nd , 2019
Location	Ptuj
Number of participants/ Stakeholder groups	2 participants from KSENA 1 participant from MO Ptuj 1 participant from Bistra 2 participants from LEA 2 participants from JSP 1 participant from Top Energija, d.o.o.
Topics(s)	Feasibility study, business plan, identification of available national funds
Minutes by	Nejc Jurko

Agenda



Prenova sistema daljinskega ogrevanja na Ptuju - srečanje delovne skupine

Delavnica bo potekala 02. 10. 2019 na Ptuju med 9:00 in 14:00

PROGRAM:

9.00 – 11.00	Načrti za daljinsko ogrevanje na Ptuju <i>Predstavitev tehničnih značilnosti novega kotla in širitve omrežja (g. Petek, LEA Ptuj)</i> <i>Pomembnost trajnostne oskrbe z energijo (Nejc Jurko, KSENA)</i>
11.00 – 12.00	Predstavitev študije izvedljivosti in priprava poslovnega načrta Franci Voglar JSP
12.00 – 13.00	Strateški okvir za regionalni energetske načrt (Bistra)
13.00	KOSILO –

Minutes and main Conclusions

District heating system in the city of Ptuj will be renovated in two steps. Installation of biomass boiler and building of all the necessary infrastructure will be done by the operator Javne Službe Ptuj-municipal-owned company. The second step will involve enlargement of environmentally friendly heat supply including low carbon footprint. Moreover, the use of biomass as the main heating source will have a positive impact on the local economy and job creation. Further on, the meeting brought us to an agreement, which states, that KSSENA supports JSP Ptuj in several steps as, a technical adaptation of the DH network, expected training seminars focusing on the use of biomass in the DH and other operations such as, preparation of feasibility studies, business plans and cost-benefit analyses, marketing of sustainable biomass DHS, consumer relations and financing of investment.

Firstly, a detailed feasibility study and business plans, with a detailed description of investment and future steps were prepared. Secondly, JSP Ptuj is advised in order to prepare technical documentation, such as the project's main design and technical studies where KSSENA work closely with engineering companies.

In terms of Financial support, KSSENA connected JSP Ptuj with the financial officer and CEO with Slovenian investment and development bank (SID). Moreover, KSSENA is helping JSP Ptuj with the preparation of the application from the national co-financing call, which is issued by the Ministry of infrastructure. However, JSP Ptuj has a succinct and clear communication strategy, regarding the installation of biomass boilers near the town centre. In agreement with everyone, participants are aware, that they have to remain open among citizens and try to minimize the partial interest with presenting a bigger picture of CO2 reduction.

Twinning activities

The participants were informed that twinning partner of DH Ptuj is from Serbia. This is DH in Priboj. The attendees agreed that they will discuss about Priboj investment plans in next meetings.

Monitor of retrofit implementation steps

-

Local working group – meeting 11

General Info

SHORT INFORMATION ABOUT THE LOCAL WORKING GROUP MEETING	
Country	Slovenia
Pilot city name	DHS Ptuj
Date	June 10, 2020
Location	Ptuj
Number of participants/ Stakeholder groups	2 participants from KSSENA 2 participants from LEA Spodnje Podravje 2 participants from ZRS Bistra Ptuj 1 participant from JSP 1 participant from MO Ptuj 1 participant from Opsen, d.o.o.
Topics(s)	Investment into biomass boiler, biomass supply, twinning programme
Minutes by	Nejc Jurko

Agenda



Prenova sistema daljinskega ogrevanja na Ptuju - srečanje delovne skupine

Delavnica bo potekala 10. 06. 2020 na Ptuju med 9:00 in 14:00

PROGRAM:

9.00 – 11.00	Predstavitve napredka projekta <i>Pregled poteka aktivnosti (Nejc Jurko, KSSENA)</i> <i>Predstavitve tehničnih značilnosti novega kotla (Franci Voglar JSP)</i>
11.00 – 12.00	Zagotavljanje kakovosti zraka in komunikacija z uporabniki Franci Voglar, Sašo mozgan in predstavniki BISTRE Ptuj
12.00 – 13.00	Trajnostna oskrba z biomaso
13.00	KOSILO

Minutes and main Conclusions

In the Second WG meeting, the participants get informed about the progress of investment in a new biomass boiler. The representative of JSP Ptuj presented the project documentation and next steps for a successful application for national co-financing.

One of the hot topics of discussion was secure and sustainable biomass supply and KSSENA presented an idea of Biomass logistic centre operated by JSP. The Company maintain large areas, not only in the Municipality of Ptuj but in all Lower Podravje region. With appropriate equipment (chipper and manipulation machines) they could produce their own biomass and be able to procure raw biomass from sustainable sources. This will be a point of discussion in future meetings.

Twinning activities

KSSENA presented the Business plan for DH Priboj. Members of WG have a few comments but in general, they evaluated the business plan positively. Unfortunately, the stud visit was cancelled due to COVID prevention measures, but WG members support future visits or online events to share the experience in biomass-based DH network.

Monitor of retrofit implementation steps

Since the political climate change within the municipality, the political support for the biomass project was a little shaky. Fortunately, with help of KeepWarm, the JSP Ptuj manage to present a project in a way, that political support is no longer a question. The investment implementation, with construction works and technology supply, will continue in 2021.

Future activities of local working groups

As the project period comes to its end, there will be additional meetings of local working groups organized in order to continue above-mentioned activities in terms of achieving investments. Working groups will continue to work in their respective areas and KSSENA will keep providing support to the decision makers with a goal, which is to reduce CO₂ emission.

Meeting with Municipality of Velenje (MOV)

The new topic in discussion with MOV will be:

- development of SECAP
- promotion of DH sector

Meeting with public authorities in Slovenj Gradec

Future discussion with MoSG will include:

- development of SECAP
- promotion of DH sector
- negotiation about potential end-users.

Meeting with JSP Ptuj

KSSENA opened some interesting points of discussion:

- biomass logistic centre and quality control of biomass
- grid extension
- development of Regional biomass centre.

Meeting with KP Velenje

These meetings will be necessary to find an optimum solution for a sustainable energy source in Velenje. KSSENA have a mission to find suitable financing opportunities for implementation of the renewable energy source as the main heat supply source for Šaleška Valley heating system.