DELIVERABLE D.T2.3.4

Summary and documentation of study tours

English Version

Version n°1 03/2022

D.T2.3.4: Summary and documentation of study tours

A.T2.3 Capacity building

Issued by:	**Energie Agentur Steiermark n°6 - EASt**
Reviewed by:	**AEE Institut für Nachhaltigen Technologien n° 3 - AEE INTEC**
Version date:	**31.03.2022**
Version. Revision	**1.0**
Circulation	**PU - Public**

Document History

Date	Version	Description of Changes
31.03.2022	v 1.0	Document issued by PP6°

Partners involved

PPn°6 - PP Energie Agentur Steiermark - EASt

PPn°3 - PP Institut für nachhaltige Technologien – AEE INTEC

Interreg CENTRAL EUROPE

Priority:	2. Cooperating on low-carbon strategies in CENTRAL EUROPE
Specific objective:	2.2 To improve territorial based low-carbon energy planning strategies and policies supporting climate change mitigation
Acronym:	**ENTRAIN**
Title:	**Enhancing renewable heaT planning for improving the aiR quality of commuNities**
Index number:	CE1526
Lead Partner:	Ambiente Italia Ltd
Duration:	01.04.2019 31.03.2022

Table of contents

1. EXECUTIVE SUMMARY

The original idea of the study tours was to visit best practice local heating networks together with the project team in the framework of the train the trainer workshops, and/or in the framework of the local trainings together with regional stakeholders.

However, due to Cov-19-situation, all train the trainer sessions and most of the local trainings had to be organized as online events.

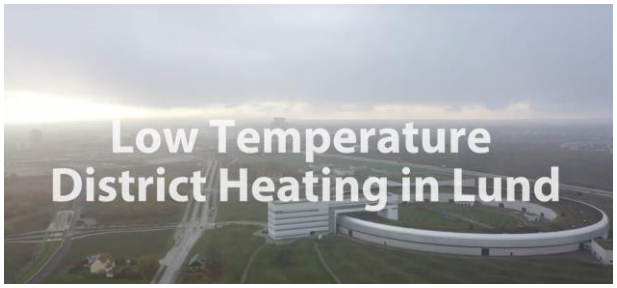
Therefore, the project consortium decided to organize virtual study tours instead of on-site study tours.

By using Youtube, it was possible to translate the texts of the videos into all languages of the target regions very easily.

In the next chapter you will find a collection of the study tours that have been compiled by our partners within the past 2 years.

2. VIRTUAL STUDY TOURS

A virtual study tour to the world's largest LTDH-grid



Since the pandemic prevents COOL DH project from welcoming visitors and arranging study tours, Lund Municipality and Kraftringen decided to arrange a virtual study tour to Brunnshög that you can join whenever you like. In this video Markus Paulsson, energy strategist in Lund municipality and Sara Kralmark, project manager at Kraftringen, guide us through some of the highlights of the low temperature district heating grid in Lund. Please click here to watch the video. (10:42 min)

Biggest solarthermal plant of Berlin

In Berlin Köpenick, Vattenfall has commissioned the city's largest solar thermal plant to date (2018).

https://www.youtube.com/watch?v=cPVuPza4bsQ
(2:05 min)

Randegg heating network - Interviews mit Bene Müller, Solarcomplex AG und Clemens Fleischmann, Randegger Ottilien-Quelle

https://www.youtube.com/watch?v=p74kCshN5i4
(0:36 min)

https://www.youtube.com/watch?v=hhT_Rya2jEk

(6:05 min)
https://www.youtube.com/watch?v=QxmqWxa9qPY
(0:38 min)

In August 2018, a solar thermal collector field will be commissioned in the Randegg heating network in addition to the biomass boilers. Bene Müller from Solarcomplex AG expects that the boilers will thus remain switched off during the summer months. (www.solare-waermenetze.de)

This video was created as part of the Solnet4.0 project.

Solarthermal energy for the district heating system Potsdam

https://www.youtube.com/watch?v=XN4Gc1GsJfc (5:16 min)

Interview with Eckard Veil (Technical Managing Director Energie und Wasser Potsdam) about the new over 5.000 m² solar thermal plant, which provides heat for the Potsdam district heating network.

Germany´s biggest solarthermal plant

https://www.youtube.com/watch?v=m_CajygkcXE

(2:47 min)

In Ludwigsburg und Kornwestheim Germany´s biggest solarthermal plant was build.

It supplies the district heating system of the municipal utility with renewable energy.

The video reports on the construction work and explains the motivation of Stadtwerke Ludwigsburg-Kornwestheim (SWLB).

Solarenergyvillage Mengsberg

https://www.youtube.com/watch?v=ig-BGwnvy2Q (3:57 min)

The solar energy village of Mengsberg, winner of the German Solar Prize, has been successfully supplying its residents with sustainable energy from the sun and biomass since 2018.

2nd biggest solarthermal plant of Austria feeds into the district heating system of the Stadtwerke Mürzzuschlag

https://www.youtube.com/watch?v=XkAWTpV5UgE&t=362s (from min 1:54 – min 5:50)

In October 2020, the second biggest solar thermal plant of Austria was put into operation in Mürzzuschlag, one Styrian municipality.

It feeds heat into the district heating system of the Stadtwerke Mürzzuschlag. It covers 100% of the heat demand in summer and 10% of the total heat consumption of the district heating system all over the year.

https://www.youtube.com/watch?v=JRYXnt5zB0k

The first solar district heating system in Italy

The 990 m^2 solar thermal plant provides heat to the district heating network in the city of Varese. It uses already existing water storage tanks with a total volume of 215 m^3. To obtain a lower average working temperature for the solar collectors, however, the solar circuit can also pre-heat the cold water which is needed to restore water losses in the grid and which is taken from public water supply at 10 °C.

Video (4:04, in Italian) on technical aspects:

https://www.youtube.com/watch?v=UaCaL7xx5cU

Video (1:24:46, in Italian) telling the whole story of the plant, also including the authorisation procedures:

https://www.youtube.com/watch?v=2BumxOc1V64

Article (in English): https://www.solarthermalworld.org/news/italy-first-solar-district-heating-system-990-m2-big

Virtuous best practice in Pomaretto (Piedmont)

Thermal power plant fueled by wood chips serving the town district heating network of the Italian Municipality of Pomaretto. The plant was put to operation in early 2018 and heats up the Town Hall, the Waldensian Hospital, the nursery and elementary schools of Pomaretto

Project co-financed by PSR 2007/13 Piedmont Region.

Video in Italian -> click on subtitles, automatic translation into English, the translation is very good:

https://youtu.be/OMHb4gKCxVw

(6:06 min)

Pokupsko – the first energy sustainable community in Croatia

The Municipality of Pokupsko is located in North-Western part of Croatia. In 2015, the first and only communal biomass heating plant was constructed which now provides heating to public and commercial buildings as well as households located in the centre. Currently 30 consumers are connected to the district heating system, while there are plans to connect other parts of the municipality.

Almost 70% of the area of the Municipality of Pokupsko is covered with forests, many of them private, and this is one of the main reasons why the biomass heating plant has been established right here. Also a biomass trade and logistic centre was established in Pokupsko, which provides a big support to the utilisation of local wood for heating.

The final result is that currently more than 75% of energy needs in Pokupsko are satisfied through local resources, with the plans to reach 100% within next five years!

https://www.youtube.com/watch?v=kd7TYl5XaHI&t=85s (9:56 min)

Biomass DHS system: Nahwärmeheizwerk Murau Stolzalpe

Murau is a small Austrian town, which is situated in a strongly wooded area. Murau´s energy vision is to be energy self-sufficient. For this reason the small town build a biomass DHS, that is able to cover the heat demand of the biggest heat consumers of the town – inter alia the rehabilitation centre Stolzalpe and the Murau´s brewery.

In 2019 three wood gasification and power to heat plants were installed. Now it is possible to switch off the initial heating boiler plant during the off-peak periods. This is responsible for a much better efficiency of the whole system.

	By now the route length of the DHS is 11 km and it supplies heat to 93 customers. https://youtu.be/fauUYy1e-NM (9:51)

Hoje-Taastrup Kommune – Cool District Heating

	The COOL DH-project has now run for more than three years and the results are starting to show! In this video you will see how low-temperature district heating and large heat pumps are an essential element in Høje Taastrup District Heating and Høje-Taastrup Municipality's collaborative journey towards an efficient, flexible and smart energy system. Many exciting and innovative solutions for energy efficiency and low temperature district heating are coming together, engaging both businesses and citizens in creating a sustainable city district. https://celsiuscity.eu/a-smart-energy-system-coming-to-place-in-danish-hoje-taastrup/ (7:38 min)

ENTRAIN pilot region Neckar-Alb: Rosenfeld

	The transition of our heat supply is one of the most important aspects on the way to climate neutrality. The municipality of Rosenfeld shows that climate protection and comfort can be well combined by a heating network. For almost 10 years, a wood-fired heating plant has been supplying the community based on the locally available raw material of forest residues. Originally initiated to supply the municipal buildings, many citizens as well as industrial companies quickly wanted to connect to the network as well. (5:48 min)

ENTRAIN pilot region Neckar-Alb: Breitenholz

	Wood energy and solar thermal energy are a perfect pair for the heat turnaround in rural areas: After an intensive three-year planning phase, Breitenholz is becoming a solar and bioenergy village initiated by the cooperative Bürger-Energie Tübingen eG. The entire village will be connected to district heating. The heat in it comes to 100% from renewable energies. A solar coverage of 37% saves valuable resources. (5:14 min)

ENTRAIN pilot region Neckar-Alb: Mehrstetten - Prfonstetten

Energy supply is a central issue for sustainable and future-oriented community development in rural as well as urban areas. Starting from the municipal buildings, renewable heating networks have been created in the villages Mehrstetten and Pfronstetten on the Swabian Alb. The district heating systems are to be operated in a cooperative model by Energie für Bürger Mehrstetten eG and by the municipality of Pfronstetten itself.

(06:03 min)