

Cool ways of using low-grade Heat Sources from Cooling and Surplus Heat for heating of Energy Efficient Buildings with new Low-Temperature District Heating (LTDH) Solutions.

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PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Quality control assessment

Issue	Date	Comment	Author
V1.0	12/08/2022	First version sent to reviewers	John Kapetanakis
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Scope of deliverable

This deliverable provides documentation for the organisation and of the two virtual events (webinars) focusing on tackling the challenges of cities and local authorities in the implementation of low-temperature district heating.

Context of deliverable

The organisation of two webinars addressing cities is part of the overall dissemination and communication strategy of the COOL DH project to promote the project's results and outcomes at the international/European level. The report, aiming to give an overview of the webinars and how they are connected with the project's goals, has the following structure: Introduction, followed by event organisation, description and impact of each webinar, and a conclusion.

Perspective of deliverable

The purpose of this deliverable is to contribute to reporting and assessing the overall impact of the dissemination tasks.

Involved partners

EHP (EHP-BE) organized the webinar and moderated the session. COWI (COWI-DK) and Kraftringen Energi (UTIL-SE) participated with speakers.

English summary

The report provides an overview of the organisation and implementation of 'Two webinars addressing cities'. This activity is part of the 'Task 6.7 Promotion at European / International level through the association' and as such is included in the communication and dissemination plan of the COOL DH project. The aim of the webinars is to inform and engage stakeholders at a European level about the implementation and deployment of innovative solutions for the district heating and cooling sector.

EHP organized the webinar in collaboration with the "Celsius Initiative". The main outcome of the webinars was that important project achievements and learnings of COOL DH were shared with the target group of local authorities and city-level stakeholders of DHC. Among the main takeaways was the presentation of the low-temperature business models giving inspiration to other cities. Furthermore, another important aspect is that the webinar provided knowledge for further development and discussion for the future of DHC (District Heating and Cooling).

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1. Introduction

Among the objectives of the COOL DH dissemination activities are to approach the end users and to inform stakeholders at a European level about the implementation and deployment of innovative solutions for the district heating and cooling sector. To achieve this aim, the Grant Agreement and subsequently the dissemination plan provided for two webinars targeting cities, planned to inform the DHC European community about the potential of the use of low-grade heat sources for low and ultra-low-temperature district heating networks.

Considering that the target group of these dissemination events is local authorities and stakeholders on a city level, it was decided by EHP who was leading the task, to collaborate with Celsius Initiative, an established network of cities and supporting organisations. The Celsius Initiative, which aims through knowledge sharing to help cities plan, develop and optimise their district heating and cooling networks, was regarded as a strategic partner for implementing this task and reaching the target group.

The first webinar took place on the 16th of April 2020 and was titled “*Low-Temperature District Heating*”. The second webinar was held on the 29th of September 2021 under the title “*5th generation heat networks in Europe*”. Both webinars were organised by COOL DH and Celsius Initiative.

2. Webinar 1: “Low-Temperature District Heating”

2.1 Event organisation

The virtual event was organised as part of the online series of CELSIUS Talks a concept developed by the “Celsius Initiative”. This first webinar addressing cities, titled “Low-Temperature District Heating”, was dedicated to clarifying what is a low-grade heat source and how it can be used to decarbonise the heating sector. Representatives of the project partners COWI (COWI-DK) and Kraftringen Energi (UTIL-SE) participated in the webinar as speakers. A guest speaker from the Danish Technological institute participated too. An EHP representative moderated the session.

The webinar was broadcasted by Celsius on its platform. The event was promoted on the websites of COOL DH (<http://www.cooldh.eu/district-heating/cooldh-celsius-talk-low-temperature-district-heating/>), EHP, and CELSIUS, as well as the social media accounts as *COOL DH – CELSIUS Talk: “Low-Temperature District Heating”* with the following banner and posts on Twitter:



Picture 1 Promotional banner of the first webinar.

2.2.1 Agenda

1. INTRO

- *Welcome & short introduction of the COOL DH project*, by Moderator Gabriele Pesce, Project Officer at Euroheat & Power, DHC+
- *Introduction of Celsius Initiative* by Emilia Pisani, Communication Officer, Johanneberg Science Park

2. PRESENTATIONS

- *What is LTDH and how it opens the spectrum of possible waste heat sources to be used*, by Steen Gravenslund Olesen, Project Manager at COWI Smart Energy Systems.
- *The obstacles to be solved beforehand – the EU RELated project*, by Christian Holm Christiansen, Senior Specialist at the Danish Technological Institute (DTI).
- *Low-Temperature business plan for Lund, Sweden*, by Sara Kralmark, Project manager at Business Development, Kraftringen Energi.

3. Q&A SESSION



Picture 2 Twitter posts advertising the first webinar.

2.2 Event description

The purpose of the first webinar was to present some of the opportunities and challenges cities may encounter in their endeavour toward a sustainable and efficient energy system. Thus, the webinar covered how to plan the deployment of new DHC systems, as well as the extension and refurbishing of existing ones to a higher standard, using local low-grade heat sources.



Picture 3 Screenshot from the publicly available recording of the 1st webinar.

The introduction by **Gabriele Pesce** (EHP) provided an overview of the webinar and the presentation of the topic, following a short description of the DHC+ Platform and the COOL DH project. Emilia Pisani, representing the Celsius co-organiser gave a brief presentation on the Initiative.

The presentation by **Steen Gravenslund Olesen** (COWI) focused on the concept and technologies behind low-temperature district heating and the various benefits it presents. During his presentation ***“What is LTDH and how it opens the spectrum of possible waste heat sources to be used”*** he explained what LTDH is and the aim of the COOL DH project and presented the main achievement of the project until that day from the Danish side.



Picture 4 Screenshot from the publicly available recording of the 1st webinar.

The second presentation by **Christian Holm Christiansen** (Danish Technological institute) titled ***“The Obstacles to be solved beforehand”*** focused on some of the possible barriers that can be encountered by the district heating companies and heat suppliers that need to be addressed before the implementation. At the beginning of the presentation, he made a short introduction about the RELaTED project, which is a HORIZON 2020 project focusing on the LTDH and Ultra-low temperature district heating. He continued by

emphasizing the importance of planning and identifying surplus heat resources and ended with an overview of the barriers and challenges that surplus heat entails.

The third and final presentation by **Sara Kralmark** titled *"LTDH business plan for Lund, Sweden"* focused on the two price models and their pros and cons, i.e. price tariffs for LTDH consumers and LTDH producers, using the COOL DH example of the Swedish site. The last part of the session was dedicated to the audience, where questions were sent through chat and replied to by the speakers

2.3 Impact

The most important outcome of the session was the knowledge sharing and dissemination of findings of COOL DH regarding the opportunities and challenges cities may encounter in the implementation of LTDH. The webinar content covers how to plan for the deployment of new DHC systems, as well as the extension and refurbishing of existing ones to a higher standard, using local low-grade heat sources. Furthermore, by inviting a representative from a relevant EU project, there was a fruitful exchange of perspectives and findings between two projects with a very similar focus.

The session started for the audience at 10:30 on the 16th of April 2020 and was attended by 115 viewers from 19 different countries. The recording of the event and the presentation slides became publicly available soon after on Celsius' YouTube channel and website respectively. Aiming to increase the impact of the session, the publication of the recording was shared on social media.

The views on YouTube have reached 279 (as of 22/07/2022). The dedicated website post (accessed here: <https://celsiuscity.eu/ltdh-webinar-recording/>) includes the recording of the webinar (<https://www.youtube.com/watch?v=QyHxB7CR-M8>) and the slides of the speakers' presentations (<https://celsiuscity.eu/wp-content/uploads/2020/04/200416-LTDH-wbmr-master-presentation.pdf>).

Attendees' Country	No. of attendees per Country
Sweden	28
Denmark	15
Belgium	12
France	12
United Kingdom	9
Germany	7
Italy	7
Spain	5
Ireland	5
Lithuania	4
Poland	2
Latvia	2
Bulgaria	1
United Arab Emirates	1
Switzerland	1
Russian Federation	1
Netherlands	1
Austria	1
Croatia	1
Total	115

Table 1 A total of 115 viewers from 19 different countries attended the webinar.



3. Webinar 2: "5th Generation heat networks in Europe".

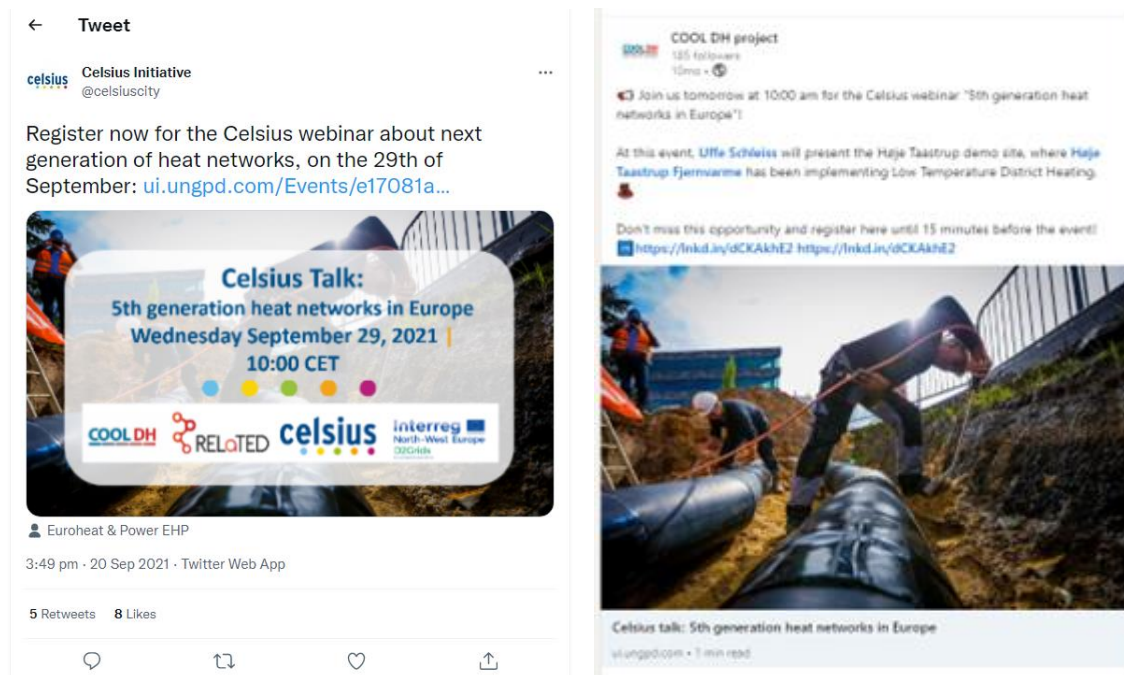
3.1 Event organisation

Similarly to the first webinar, this one too was organised as part of the online series of CELSIUS Talks a concept developed by Celsius Initiative. The second webinar was dedicated to discussing the topic and definition of the 5th Generation District Heating, presenting different approaches and examples from the projects represented. Apart from COOL DH, representatives of the EU projects D2Grids and RELaTED participated in the webinar as speakers. A representative from EHP moderated the session.

The webinar was broadcasted by Celsius on its platform. The event was promoted through COOL DH, EHP, and CELSIUS websites, as well as the social media accounts as "CELSIUS Talk: 5th Generation heat networks in Europe", with the following banner and posts on Twitter:



Picture 6 Promotional banner of the second webinar



Picture 7 Posts on Twitter (right) and LinkedIn advertising the webinar.

3.2.1 Agenda

1. INTRO

- *Welcome and Introduction of Celsius Initiative*, by Moderator Alessandro Provaggi, Head of DHC+ Platform, Euroheat & Power (EHP)

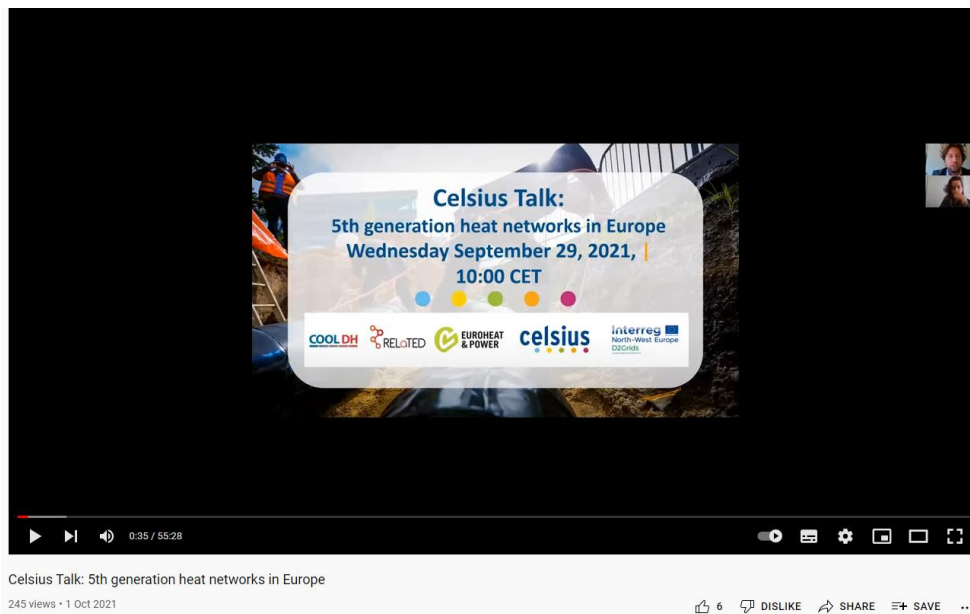
2. PRESENTATIONS

- *RELaTED and the 5th generation district heating and cooling - Iurreta demo case*, by Olaia Eguiarte, Tecnalia
- *Developing 5GDHC definitions from the D2Grids projects*, by Herman Eijdens, Director Innovation Strategy, Mijwater Energy B.V
- *Actions taken in Høje-Taastrup for the green transition towards 5th generation DH*, by Uffe Schleiss, Technical Director, Høje-Taastrup Fjernvarme, Denmark

3. Q&A SESSION

3.2 Event description

The purpose of the second webinar was to clarify the definition and concept of the 5th Generation District Heating and Cooling that has been more and more frequently used in the sector, but there is no consensus on what it contains. The second webinar started with the introduction by **Alessandro Provaggi**, who presented the topic of the webinar, "**5th generation heat networks in Europe**" and highlighted that there is no clear definition of the 5th generation DH but there are many different interpretations. Afterwards, he gave a short presentation about the Celsius Initiative and introduced the three different projects participating in the session, which are COOL DH, RELaTED, and D2Grids, and their representative speaker and the DHC+ platform.



Picture 8 Screenshot from the publicly available recording of the second webinar.

The first presentation **“RELaTED and the 5th generation district heating and cooling- Iurreta demo case”**, was given by **Olaia Eguiarte**, who presented the aim and mission of the RElated project and its pilot sites, and focused her presentation on the Iurreta pilot case. The second presentation titled **“Developing 5GDHC definitions from the D2Grids projects”** was given by **Herman Eijems**, who presented the theory which is developing during the project “Interreg North-West Europe - D2Grids” which is called “5th generation”, examining the evolution of heating rates.

The third and final presentation titled **“Actions taken in Høje-Taastrup for the green transition towards 5th generation DH”** was given by **Uffe Schleiss (UTIL-DK)**, representing COOL DH. After giving an overview of the COOL DH project, he presented in detail the implementation at the Høje-Taastrup demo site. The last part of the session was dedicated to the audience, where questions were sent through chat and replied to by the speakers.



Picture 9 Screenshot from the publicly available recording of the second webinar.

3.3 Impact

The most important outcome of the session was the key points given by the speakers about what ‘5th Generation district heating’ is, by presenting their different perspectives on the topic. Among the major learnings that were provided during the final discussion was that the 5th generation actually differs from the 4th generation. Furthermore, the speakers highlighted that the highest priority is to make the local system greener and reduce CO₂ emissions. Concerning the concept of 5th generation district heating, it was mentioned that it is important that the DH Community continues the discussions and collaboration for reaching a common understanding and agree on a definition.

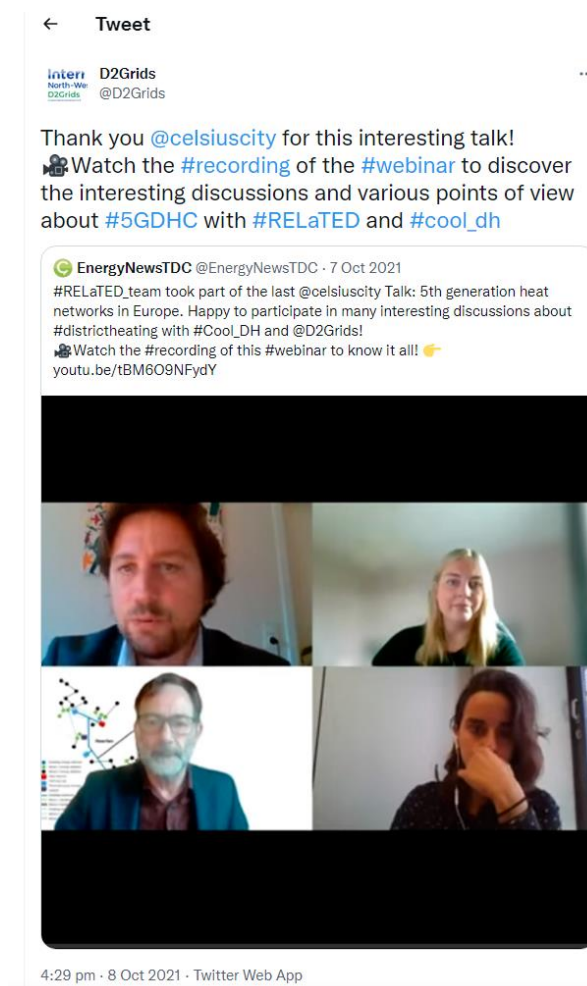
The session started for the audience at 10:00 on the 29th of October 2021 and it was attended by about 64 viewers from 18 different European countries. The recording of the event became publicly available soon after on Celsius’ YouTube channel and website. Aiming to increase the impact of the session, the publication of the recording was shared on social media and the COOL DH website:

<http://www.cooldh.eu/webinar/webinar-actions-taken-in-hoje-taastrup/>.

The views on YouTube reach 247 as of 22/07/2022. The dedicated website post including both can be accessed here: <https://celsiuscity.eu/celsius-talk-5th-generation-heat-networks-in-europe/>.

Attendees' Country	No. of attendees per Country
Italy	9
Netherlands	8
Sweden	7
Denmark	6
Belgium	6
Spain	5
France	5
Luxembourg	3
Finland	3
Lithuania	2
United Kingdom	2
Austria	2
Ireland	1
Germany	1
Croatia	1
North Macedonia	1
Russia	1
Latvia	1
Total	64

Table 2 A total of 64 viewers from 18 different countries.



Picture 10 Screenshot from a tweet about the second webinar recording.

4. Conclusion

According to the dissemination plan, the two webinars addressing cities were planned and organised in an effort to inform stakeholders at a local level about the implementation and deployment of innovative solutions in the district heating and cooling sector. Through these online events, COOL DH had the chance to reach a total of over 200 people of the target audience. The presentations and messages in these webinars delineated how to facilitate the uptake and use of low-grade heat sources, providing examples of technical solutions and business models developed by COOL DH, which could be replicated by cities around Europe.

The strategic choice of partnering with Celsius Initiative in organizing and hosting these webinars proved to be effective in terms of reaching easily the specific target group of city-level stakeholders. Furthermore, by inviting relevant project representatives to the sessions, COOL DH was able to exchange experiences with other related projects. As a result, the synergies achieved through these activities helped significantly with promoting COOL DH results to a wider audience within the DHC community at the European level.

All in all, both webinars focused on promoting COOL DH and increasing the audiences' awareness of the benefits, challenges and solutions of low-grade heat integration in the district heating systems. Additionally, the recordings being available online would also serve as supplementary material for further understanding the COOL DH results, increasing, as a result, the impact of the dissemination activity. The webinars addressing cities were carried out in an effective and meaningful way, fulfilling the activities aim and contributing to the implementation of the overall task of dissemination on the European / International level.