Start 15:00 (CEST)

Web briefing

„100 good reasons to use geothermal energy in heating and cooling networks“

G. Goetzl, C. Schifflechner, J. Figueira

Online, 23 May 2022

cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

Funded by the Horizon 2020 Framework Programme
of the European Union

GEOTHERMAL DHC
Towards Decarbonized Heating and Cooling!

Agenda

- Welcome and brief introduction to the initiative
- Fact sheet online survey, Assistance through the process by the core team
- Q&A round

Former geothermal DH system Fuerstenfeld, Austria (photo: Gregor Goetzl)

Please note that this meeting will be recorded!

The team

Gregor Goetzl (Austria)

gregor.goetzl@geologie.ac.at

- **Overall coordination of the initiative**
- **Affiliation**: Geological Survey of Austria, department of hydrogeology and geothermal energy
- **Background and work focus**: Geophysics, geothermal energy research since 2004, chair of the COST Action CA18219 Geothermal-DHC, chair GeoEnergy Expert Group EuroGeoSurveys

The team

Christopher Schifflechner (Germany)

c.schifflechner@tum.de

- **Direct geothermal energy use in DH networks (G2-G4)**
- **Affiliation**: Technical University of Munich – Chair of Energy Systems
- **Background and work focus**: Mechanical Engineer focusing on deep geothermal systems for flexible CHP and trigeneration (heating, cooling, power generation) systems

The team

Joao Figueira (Portugal)

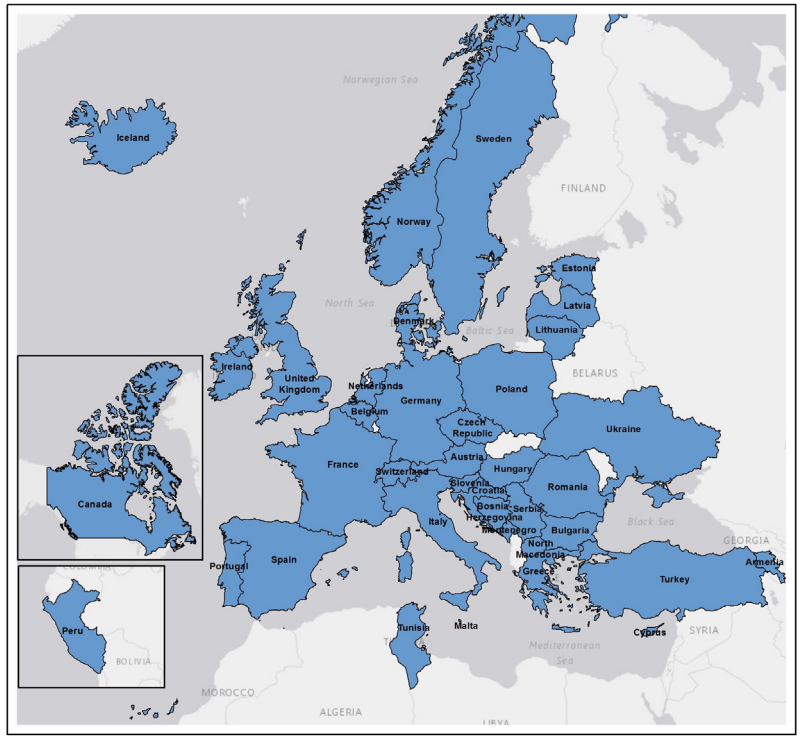
joao.figueira@tecnico.ulisboa.pt

- **Shallow geothermal in local HC networks (G4-G5)**
- **Affiliation**: CERIS, University of Lisbon
- **Background and work focus**: Shallow geothermal energy use, Ad Hoc WG leader shallow geothermal inside Geothermal-DHC, geotechnical engineering, ailing dams

CA18219 Geothermal-DHC

„Research network on the integration of geothermal energy in decarbonized heating and cooling networks"

- Operating period November 2019 – October 2023
- Currently ~140 researchers from 35+ countries
- Open access network – financial support for traveling, dissemination and organizing events
- Chairs: **Gregor Goetzl (Austria), Dejan Milenic (Serbia)**



CA18219 participating countries

Visit https://www.geothermal-dhc.eu/JoinIn for entering the COST Action

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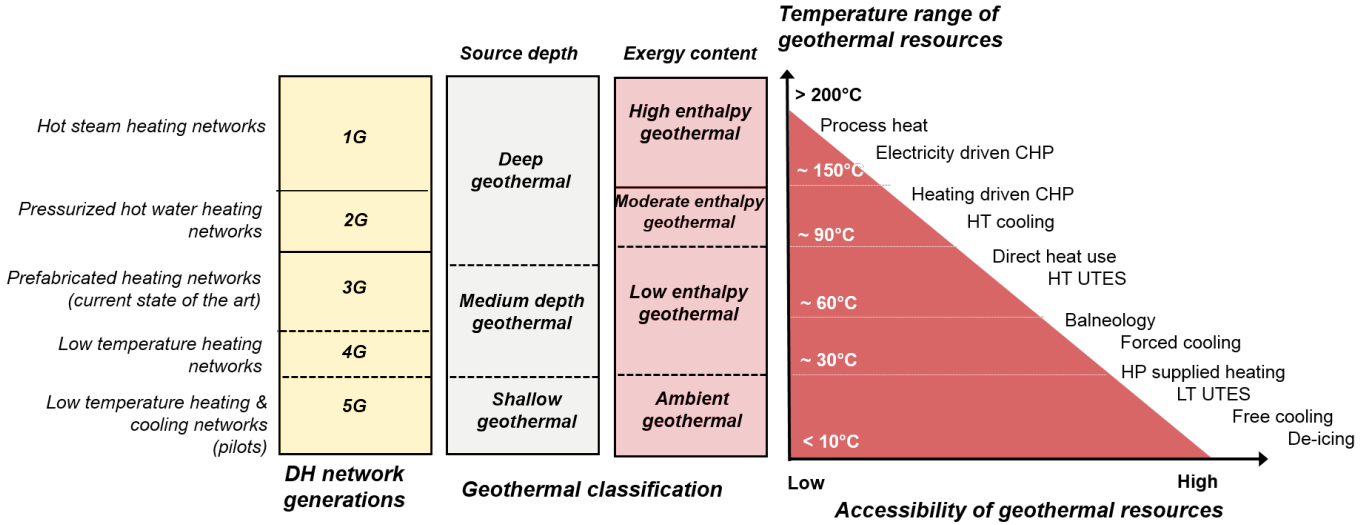
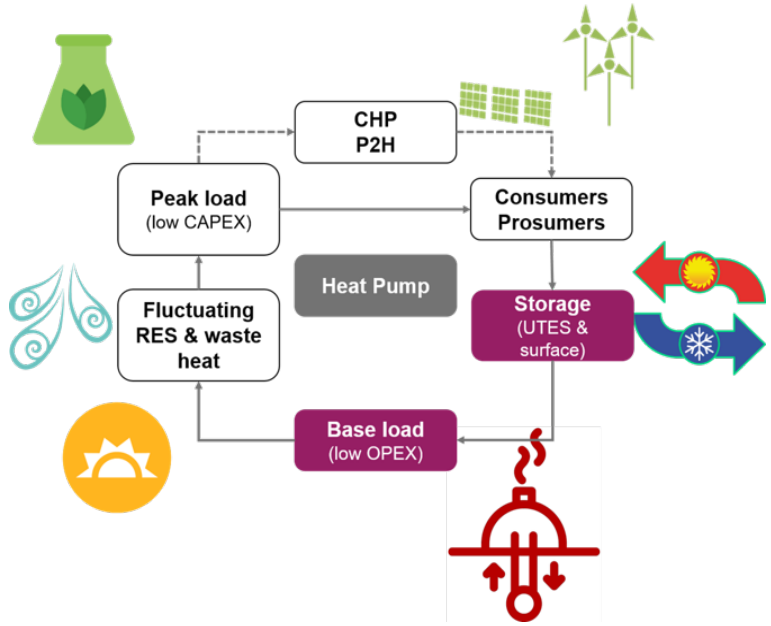
Geothermal-DHC investigates the full spectrum of technological options



Source: CA18219 Geothermal-DHC



Multivalent geoHC networks
Source: CA18219 Geothermal-DHC

Market ready-, market close- & future concepts

At least 350 to 400 cases studies on geothermal energy use in HC networks existing in Europe

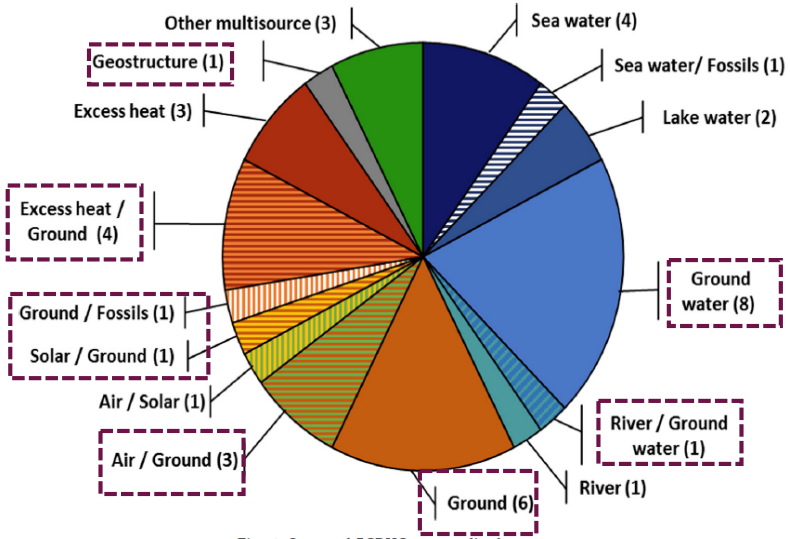
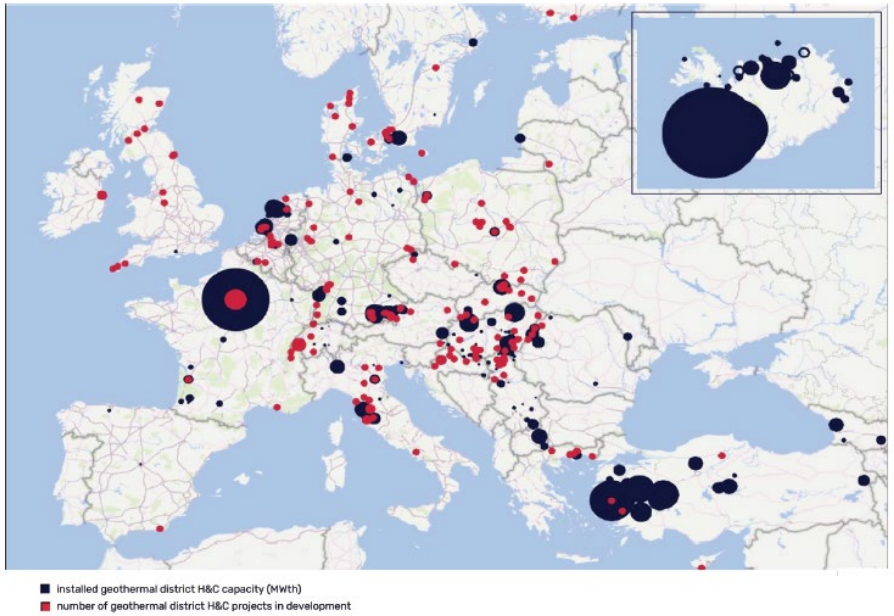


Fig. 4. Surveyed 5GDHC case studies by source.

Heat pump supplied 5th generation heating and cooling networks
Source: Buffa et al. (2019)

Fig. 13 | Map of geothermal district heating and cooling in Europe



Direct use of geothermal energy in heating and cooling networks
Source: EGEC Geothermal Market Report 2021

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Making geothermal energy use in HC networks more visible

***Our ambition**: collecting at least 100 case studies and create a persistent web tool*

- Raise awareness among stakeholders not familiar with geothermal energy
- Disseminate proven and promising solutions
- Collect key characteristics of case studies to improve the understanding of geothermal in HC networks
- CA18219 Geothermal-DHC is happy to share this initiative with other networks and groups

Cooperating partners

EGEC GEOTHERMAL

Geothermie-Allianz Bayern

CROWDTHERMAL

Please contact CA18219@geologie.ac.at to become a cooperating partner

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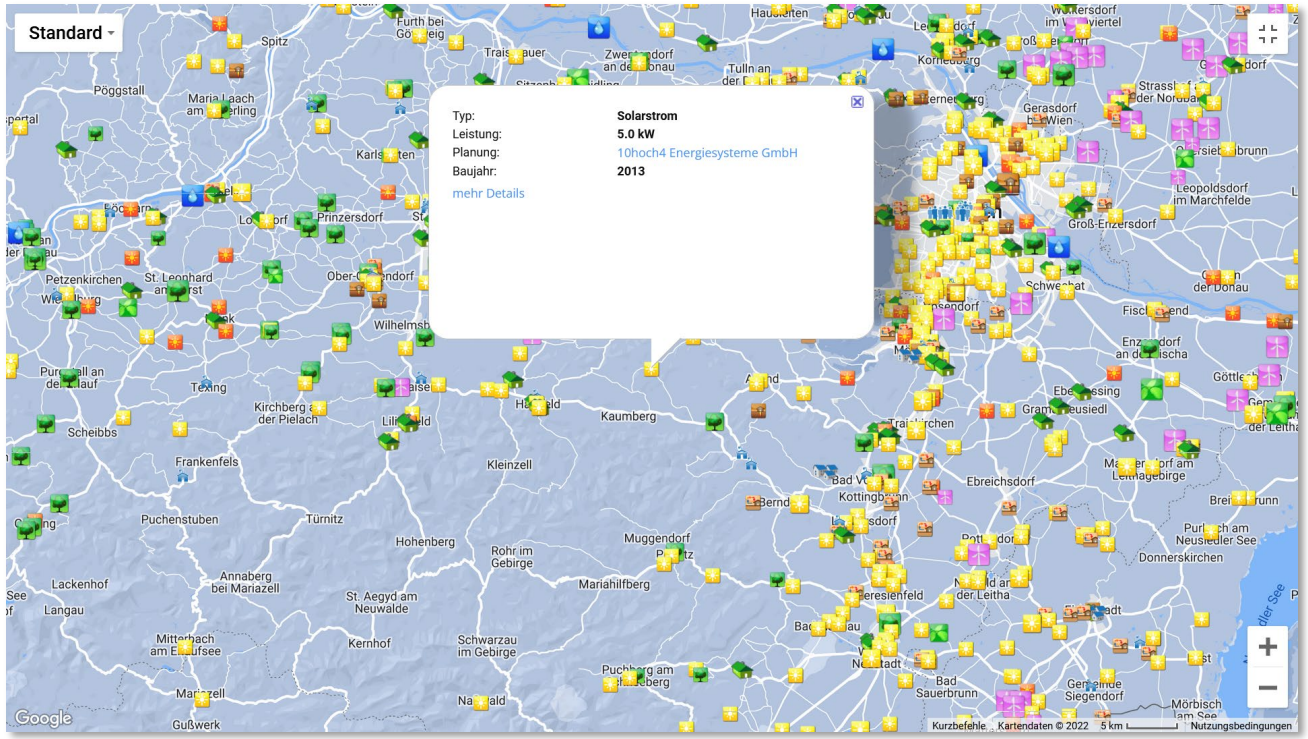
The aimed outcomes of the initiative

- Collect key characteristics and information from case studies in Europe to exhibit the technological spectrum of market proven and future concepts
- Create digital case study profiles linked to a simple GIS tool (programmed in CA18219 Geothermal-DHC)
- Create a digital dissemination booklet on representative case studies (2023)
- Voluntary assessment of key characteristics to better understand past market drivers and technological improvements



Source: https://www.repowermap.org

What does the initiative cover?

Commercial use, in preparation, in planning

IN ☺

Geothermal direct use in heating networks (G2- G4)

Heat pump supplied use of shallow geothermal in HC networks (G4- G5)

Combined heat & power

Monovalent to multivalent, UTES

Heating network combined with spas

OUT ☹

Single building, single consumer supply

Geothermal electricity without heating network supply

HC networks without geothermal

The “100 good reasons” roadmap

31/07/2022 collection date

Survey based data collection

Data checks and summaries

20/10/2022 Side event at EGC2022 (Berlin)

Elaboration of web tool

Launch of the tool & dissemination of the initiative

10/23 – 04/24: End of CA18219

Operation of permanent tool

Long-term maintainer of the system needed from 2024 on

April 2023 / 2024 Geothermal DHC day events

Information campaigns, dissemination materials

Participating at the fact finding mission

Case 1: Operator / owner of geothermal HC network

Until October 2022 / collection date 31/07

- Use offline form to collect data

https://projects-gba.geologie.ac.at/s/sc2AryiYLrobFtn

- Enter data in electronic form

https://form.jotform.com/220974357193362

From October 2022 on

- Enter and edit data in “case study profiles” at Geothermal-DHC web portal

https://www.geothermal-dhc.eu

Case 2: Participant / supporter of the initiative

- Identify suitable case studies and contact operator / owner
- Support fact finding through consultation / interviews with operators
- Optional: Fill-out survey on behalf of operator / owner according to case 1

Please note: Identify maintainer of the later case study profile at the Geothermal-DHC web portal

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Technical support during the fact finding mission

- Direct geothermal energy use in DH networks (G2-G4) — Christopher Schifflechner, c.schifflechner@tum.de
- Shallow geothermal in local HC networks (G4-G5) — Joao Figueira (Portugal), joao.figueira@tecnico.ulisboa.pt
- General requests and support — CA18219 Action Office, CA18219@geologie.ac.at
- Country reports of past WGC 2020+ and EGC 2019
  https://projects-gba.geologie.ac.at/s/gWtfosDwm8cT5Ci

Country representatives inside CA18219 represent interlink to national stakeholders

Data privacy rules

Public accessible tools and materials

- Sensitive data are shown in ranges only
- Plausibility and conformity checks performed

Non published data to identify technological and market related drivers

- Voluntary contribution of specific key values
- Summary to statistics or anonymized examples
- No publishing of non-anonymized data without prior consent of data owner

Data owner have access to editable “case study profile” at web portal from autumn 2022 on

Data owner have the right to delete survey results or profiles at any time

Introduction to the survey

Christopher Schifflechner

Link to the survey: https://form.jotform.com/220974357193362

Q&A on the online survey form

Your input is appreciated

- **Do you have specific questions on the content of the survey?**
- **Any amendments you would like to propose based on your first impression?**

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Thank you attending the briefing

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