

IEA DHC ANNEX TS10: THERMAL SOURCE NETWORKS

Advancing Community-Centered District Heating and Cooling Systems in an Integrated Future

Save-the-date for the online “Definition workshop”

14 and 15 October 2026

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Background:

The IEA DHC Technology Collaboration Programme

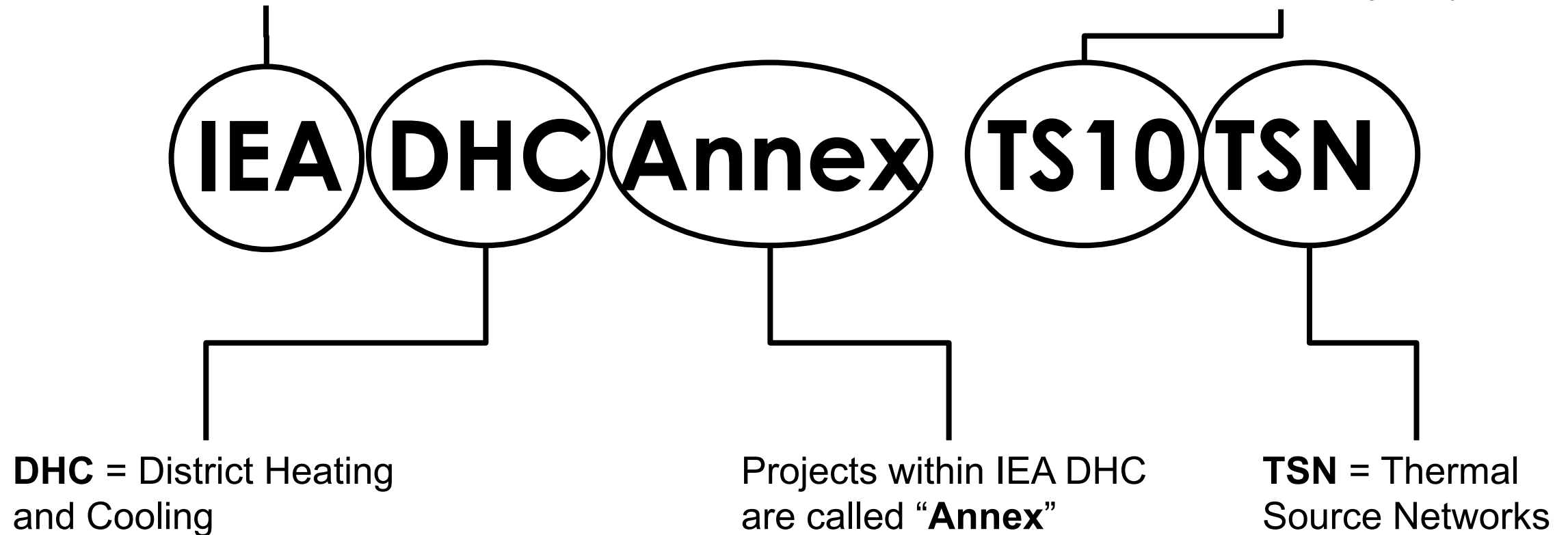
IEA DHC Technology Collaboration Programme

- **The IEA Technology Collaboration Programme (TCP) on District Heating and Cooling,**
 - deals with the design, performance and operation of distribution systems and consumer installations.
 - is dedicated to helping to make district heating and cooling and combined heat and power powerful tools for energy conservation and the reduction of environmental impacts of supplying heat
 - Current member states are Austria, Belgium, Canada, China, Denmark, Germany, Estonia, Finland, France, Italy, Ireland, Korea, Norway, Sweden, the Netherlands and the United Kingdom. Furthermore, IEA is a sponsor of the programme.
- **The projects within IEA DHC TCP are either**
 - Funded through a cost-sharing approach (by the member states, next opportunity will be open 2028)
 - Funded through a **task-sharing approach** (e.g. participants contribute resources in-kind for connecting existing national and international projects), e.g. the planned Annex TS10
- **More information:** <https://www.iea-dhc.org/home>

IEA DHC Annex TS10 TSN

The IEA DHC Technology Collaboration Programme (TCP) is organised under the auspices of the International Energy Agency (**IEA**) but is functionally and legally autonomous

TS = task-sharing = participants contribute resources in-kind (e.g. connecting existing national and international projects)



Background:

Thermal Source Networks

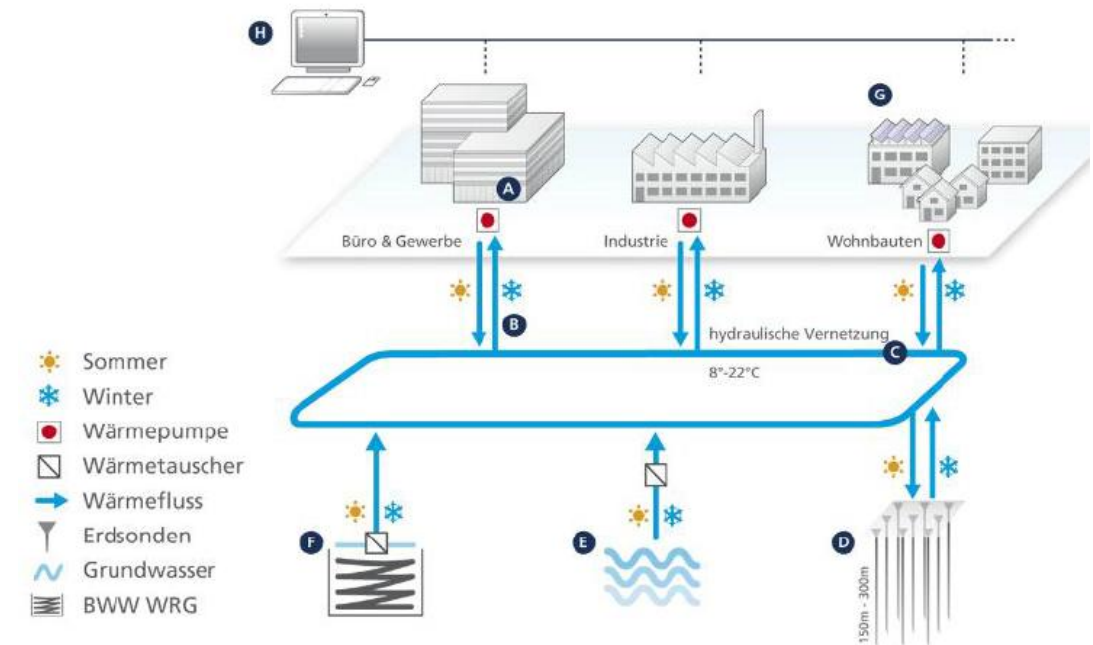
alternative wordings:

- *5GDHC – 5th generation district heating and cooling networks*
- *Cold heating networks (“Kalte Nahwärmenetze”)*
- *Anergy Networks*
- *ambient or geothermal loops*
- *Thermonet - Collective geothermal heating and cooling*
- *Bi-directional low temperature networks*
- *LowEx-heat networks*

Definition

- **Thermal Source Networks*** operate at neutral network temperatures ($\sim 5 - 20^\circ\text{C}$) and thus have very low heat losses and can efficiently integrate many heat sources. Buildings are connected via individual water/water heat pumps for providing heating and cooling in one system

* the IEA DHC ExCo recommends not using the term “5th generation district heating”, since it can be misunderstood as an upgrade over 4th generation district heating. Instead, the IEA DHC ExCo encourages labelling pipe networks that are used mainly as a source for heating and cooling by decentralized technologies such as heat pumps as “thermal source networks” (TSN). These TSNs should be considered a subclass of 4th generation DHNs https://www.iea-dhc.org/fileadmin/public_documents/2402_IEA_DHC_DH_generations_definitions.pdf



Grafik: Thomas Gautschi: „Anergienetze in Betrieb“, Städtische Wärmewende, 29. Jänner 2016, MuseumsQuartier Wien

IEA DHC Annex TS10: Thermal Source Networks



- **Aim** of the IEA DHC Annex TS10 is to assess TSN deployment barriers and success factors, evaluate techno-economic performance and competing 4GDH solutions including low-temperature and ultra-low-temperature networks, explore sector-coupling opportunities and flexibility services in thermal source networks, develop business and ownership models, and support replication and uptake through a guidebook and targeted dissemination activities.
- **Intended target audience:** District heating suppliers and network operator; as well as policy makers, regulative bodies and innovation policy makers, city authorities and urban planners
- **Planned results:** A guidebook, factsheets, policy briefs, country reports, data base of existing systems, webinars, conference presentations etc. (details tbd)
- **Participation:** Organizations from [IEA DHC member states](#) can participate with in-kind contributions

Methodology and planned tasks



- Task 1: Successful sites (Lead: tbd)
 - To be contacted as contributors: tbd
- Task 2: Techno-economic analysis and competing 4th Gen. DH solutions (Lead: tbd)
 - To be contacted as contributors: tbd
- Task 3: Opportunities enabled by sector-coupling (Lead: tbd)
 - To be contacted as contributors: tbd
- Task 4: Business and operator models for ownership structures (Lead: tbd)
 - To be contacted as contributors: tbd
- Task 5: Guidebook & Dissemination (Lead: tbd)
 - Contributors: all participants

Time schedule

2026	Mid 2027	2028	2029	2030	2031
Definition	Preparation	Working			Reporting

Date	Phase
June 2026:	Approval to start the Definition phase (IEA DHC ExCo Meeting)
Sept 2026:	Start Definition phase
Mid of 2027:	Start Preparation phase
2028:	Start Working phase (Final Annex text available)
2031:	Start Reporting phase
Mid of 2031:	End of the Annex

Collaboration

The new IEA DHC Annex TS10 TSN builds upon and continues the TS2 activities



Planned collaboration with:

- International Energy Agency Geothermal Implementing Agreement (*IEA-GIA*)
- International Energy Agency Technology Collaboration Programme on Heat Pumping Technologies (*IEA HPT TCP*)
- International Energy Agency Energy in Building and Communities Programme (*IEA-EBC*)

Collaboration options

- Alignment meeting
- Joint sessions at conference
- Perspective of collaboration partners featured in guidebook

Save-the-date

“Annex Definition workshop”

14 and 15 October 2026 → Online

Aim of the Annex Definition workshop

The aim of the definition workshop is to shape the upcoming IEA DHC Annex TS10 in terms of

- **Content and focus of the Annex**
 - Is the topic properly covered?
 - Is it too wide or do we need to expand it?
- **Methodology and task**
 - What activities are performed in this area of TSN?
 - Have we missed something important in the tasks?
- **Participants and possible subtasks leads**
 - Who can contribute their work to a specific task?
 - Who would volunteer to (co-)lead a task?

Also, some **networking between the participants** will be foreseen

Agenda

Day 1

- Introductory session TS10 TSN
- Participant presentations

Day 2

- Developing TS10 TSN tasks
- Discussions

→ Details will follow!

Please contact us if you are interested
a. in presenting your work on this topic (10 min slots) and/ or
b. in leading a subtask!

Contact us!

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