

IEA Technology Collaboration Programme on District Heating & Cooling

Introduction

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Chair, IEA-DHC

What is the IEA District Heating & Cooling TCP?

- IEA-DHC was established in 1983
- Established as a cost-shared TCP that carries out research projects in three-year 'annexes' which comprise 4 – 6 projects
- Also initiated task-sharing in 2011
- Current members are: Austria, Canada, China, Denmark, Finland, France, Germany, Korea, Norway, Sweden, UK, USA
- Potential new members: Belgium, Netherlands, Italy.

IEA-DHC: what it does

- Cost-shared projects carried out in three-year ‘annexes’ which comprise 4 – 6 projects chosen by competitive bidding
- Task-shared projects emerging alongside the cost-share programme
- Approximately 80% of projects are technically focused; 20% policy focused
- Research topics cover all aspects of DHC technology focusing on reducing cost and improving performance: eg pipe materials, installation techniques, system optimisation, pro-active maintenance, thermal storage, integrating renewables
- Reports are produced for all projects and are available at the website: www.iea-dhc.org

IEA DHC: Governance structure

1. IEA DHC Executive Committee (Country representatives)
 - takes decisions and steers the programme
2. IEA DHC Chair (elected by ExCo)
 - Leads the programme and initiates decision making
3. IEA DHC Operating Agent
 - Invitation to tender (organisations in participant countries), or contract extension
 - Manages the programme, supports chair and prepares decisions
4. International research projects (funded or supported by IEA DHC)
 - bring DHC ahead through new insights

IEA DHC: Obligations of members

- Pay country contributions
- Ensure attendance of at least one representative at almost all IEA DHC ExCo meetings (twice a year)
- Host an ExCo meeting every 5/6 years
- Provide required feedback to Operating Agent and Chair; for example in-country consultation to identify priority themes for next Annex
- Appoint project Experts – one per country per project
- Promote IEA DHC when opportunity arises.

IEA DHC: Contributions

1. IEA DHC countries pay based on GDP and DHC share
 - The lower the GDP the less, the higher the DHC share the more
2. Contributions currently between 60.000 USD/a and 25.000 USD/a
 - Total project budget over 1 Mio. USD per Annex
3. Task-shared Annexes (nested in cost-shared Annexes)
 - Dedicated OA is paid by an IEA DHC member country
 - Task-shared research is paid from nationally funded projects

IEA DHC: Accessibility

- Dedicated website with all reports and information: www.iea-dhc.org
- 60+ public project reports available after free registration
- Dedicated, closed sections as repositories for non-public information
- Between ExCo meetings: Programme managed remotely (file sharing, email, phone calls)

Cost share timetable

Date of meeting	Annex XII	Annex XIII
Spring 2018	Under way	
Autumn 2018	Under way	Prepare for in-country consultations.
		Each ExCo member carries out their own In-Country Consultation, submits the results; Chair and vice-Chair meet to set up 'straw man' of themes.
Spring 2019	Under way	Discuss results of in-country consultations; finalise themes for Request for Proposals (RfP).
		RfP document compiled; launch in early Autumn.
Autumn 2019	Under way	Prepare for assessment of proposals - deadline February 2020
		Proposals assessed by each ExCo member, submit results to OA; OA aggregates marks
Spring 2020	Deadline for reports	Finalise the chosen projects.
	Dissemination eg at Symposium	Contracts drawn up; projects begin; ExCo members nominate Experts for projects.

Annex XII (2017-20) – successful proposals

- 1. Effects of Loads on Asset Management of the 4th Generation District Heating Networks
- 2. MEMPHIS - Methodology to evaluate and map the potential of waste heat from industry, service sector and sewage water by using internationally available open data
- 3. Integrated Cost-effective Large-scale Thermal Energy Storage for Smart District Heating and Cooling
- 4. Stepwise transition strategy and impact assessment for future district heating systems.

Task share

- Task share ideas are invited from member countries at any time
- Task share ideas should first be submitted to the ExCo as an outline
- If approved, the Task Share enters the Development stage and the lead country organisation arranges a workshop
- Following the workshop a report is made to the ExCo; if approved then the Task Share enters the Preparation stage
- Final approval from ExCo
- Task share projects are 'nested' in the current cost share Annex.

Low Temperature District Heating for Future Energy Systems – DHC's first Task Share

- Amplifies the work of the Annex X 4GDH project and the Annex XI System Transformation project
- Fundamental link between low temperature systems, integration of renewables, thermal storage, heat demands of future buildings...
- Concluding LTDH Guide launched 2018
- Follow-up Task Share currently in planning: 'Practical realisation of low temperature DH systems'.

New Task Sharing Initiatives

Practical realisation of low temperature district heating systems

*Now approved by ExCo; kick-off meeting took place April 2018.
Contact: Kristina Lygnerud at kristina.lygnerud@hh.se*

Hybrid Energy Networks – District heating and cooling networks in an integrated energy system.

ExCo support for proceeding to preparation phase; workshop held 25/26 April 2018. Contact: Ralf-Roman.Schmidt@ait.ac.au

In country dissemination

- Through existing relevant organisations: ADE, UKDEA, CIBSE CHP Group, Local Authority Vanguard: presentations by request or invitation; distribution of information to their networks.
- Presentations during 2017/18: CIBSE CHP (28 September); ADE (11 October and 28 February); Local Authority Vanguard (1 November).
- Briefed GLA
- Information also sent to more than 100 contacts direct, July 2017 and February 2018.

Links with other TCPs

- DHC-TCP joint workshop May 2016 with SHC, ECES, HPT, EBC.
- SHC joint workshop March 2018 to discuss ways to work together.
- Relevant tasks in other TCPs include:
 - SHC Task 55 ‘Towards the Integration of Large SHC systems into DH.’
 - ISGAN cooperation in Annex TS3 Hybrid Energy Networks .
 - ECES Task 28 ‘Distributed Energy Storage for the Integration of Renewable Energies’.
 - HPT Task 47 ‘Large Scale Heat Pumps in DHC Systems’
 - EBC Task 64 ‘LowEx Communities’

TCP Collaboration Meeting

- To discuss different modes of collaboration between TCPs
- Convened by SHC – they have collaborated most with other TCPs
- IEA Office of Legal Counsel looking at collaboration models: to reinforce what works, simplify procedures, enable new types of collaboration
- SHC has drawn up Task Collaboration Policy; they believe joint annexes are too administratively difficult
- EUWP Chair: no barriers to informal collaboration (eg workshops); and parallel annexes preferred to joint annexes.

Other Co-operation

- **International symposium for District Heating & Cooling**
September 2018, Hamburg
- **Future Building Forum** DHC sent a representative (Mark Spurr) to the FBF October 2018; topic was Hot and Humid Climates
<http://www.iea-ebc.org/strategy/future-buildings-forum/>
- **Mission Innovation** DHC has agreed in principle to support HPT and ECES in their establishment of a platform for response to Mission Innovation #7 Heating and Cooling
- **Working Group on Cities and Communities** DHC representative attended workshop April 2018.

Key success factors

- **Active participation** - high level of participation at ExCo meetings; cost share project programme usually involves all countries
- **Communication** – OA and Chair have weekly telephone meetings; in-between meeting system for quick ExCo decision-making
- **Cost and task sharing** - combination working effectively for DHC despite initial fears. Cost sharing provides relatively quick pipeline of outputs; task sharing enables wider focus and flexibility
- **Industry links** – for example, with Euroheat & Power
- **International symposium for District Heating & Cooling Now** under wing of IEA-DHC
- **Links with other TCPs** – where relevant.

Further information

For more about the DHC-TCP, contact:

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