The Celsius Initiative

Accelerate the energy transition through the deployment of smart and sustainable heating and cooling solutions in cities and accelerating their market uptake.
Celsius Stakeholder Survey – Urban Heating and Cooling Transition

✓ Analyse stakeholders’ awareness and understanding of DHC and its role in realising the EU’s climate and energy objectives

✓ Relevant stakeholders include the European institutions and the wider EU policy community, representatives of civil society, industry and academia
Organisation type
53 responses

How much do you know about district heating & cooling (DHC)?

- 54.7% I am an expert
- 45.3% I know a bit
- 0% I don't know anything about DHC

Academic - University / Institute / Research
Consultancy - Engineering / Design / Architecture
Utility / Operator
Association / Federation
Municipal Sector - City / County
Topics Important to Achieve a Fast Heat Transition in Cities

- Fuel switch: DHC and heat pumps to heat buildings
- Fuel switch: solar thermal and geothermal
- Fuel switch: waste heat and cold
- Fuel switch: hydrogen and other green gases to heat buildings
- Municipal heat plans
- Public subsidies, targeted financing and investments
- Political will on local, regional and national level
- Building renovations
- Citizen engagement
- CO2 taxation or similar market signals

5 (very important)  4 (important)  3 (neutral)  2 (rather not important)  1 (not important at all)
Factors to Empower Cities in their Heat Transition

- Networks such as Energy Cities, EuroCities, Celsius initiative, C40, Covenant of Mayors etc.
- Clear EU and national frameworks with targets towards 2030 and 2050
- Replication of projects from other cities
- Peer-to-peer exchange between cities
- Capacity building inside the city administration
- External technical support for cities
- Financial support, including grants and equity financing for projects
District Heating and Cooling Networks are...

- A well-known technology that requires modernisation
- an established and future-proofed technology in urban areas
- It's an old technology that is still improving with different generations
- an old and well tested method to achieve system efficiency
- an important technology that can be modern (4GDH) but also out-dated (1GDH)
- A key to a successful Energy Transition of the heating sector
- promising

![Diagram showing distribution of modern versus outdated technology]

[Modern technology: 74%
Out-dated technology: 7%
Other: 15%
Both: 4%]
District Heating and Cooling Networks are...

- Depends on the local conditions
- should be running on renewables but they need to transition like all other energy systems
- must be transformed to low-temperature distribution systems with high shares of waste heat or renewable heat
- Currently not good enough but have a large potential for decarbonisation

Running on renewables 52%
Running on fossil fuels 33%
Both 15%
District Heating and Cooling Networks are...

- some are inefficient but the path to make them more efficient is well documented
- Efficiency is related to system age and energy sources
- Efficient when exploit renewables and low temperature fluid
- very varied, but should all be brought to high performance
District Heating and Cooling Networks are...

- we need to be aware that not all are operating in a green way - coal, gas and out of date and inefficient systems
- This is dependent upon the energy sources and system efficiency
- Highly efficient with the potential to be green
- a key infrastructure in cities
District Heating and Cooling Networks are...

- there will be the future only if the boundary conditions allow in some countries
- It's a local product that has to be situational
- part of an integrated fully electrified (renewable) energy system
- important not to forget the past (especially all the warmth DH brought, even if not done in a most efficient way)
DHC networks support the energy transition. DHC networks are the most cost-efficient way to decarbonise heating systems in European cities. Only some district heating networks (efficient, renewable-based, ...) support the energy transition. District heating systems empower cities to tap into their locally available renewables and waste heat for their citizens. Biomass should make an important contribution to the decarbonisation of Europe’s district heating grids. District heating systems support the wider energy transition, including the growth of RES electricity, by providing storage and balancing services to the grid. There is little or no place for district heating systems in the future energy system. Most existing district heating networks must be modernised and made more efficient. District cooling will grow in scale and importance in the coming decades. City administrations are best placed to decarbonise their local heating and cooling systems. District heating systems support the wider energy transition, including the growth of RES electricity, by providing storage and balancing services to the grid. There is little or no place for district heating systems in the future energy system. Most existing district heating networks must be modernised and made more efficient. Biomass should make an important contribution to the decarbonisation of Europe’s district heating grids. District heating systems empower cities to tap into their locally available renewables and waste heat for their citizens. Only some district heating networks (efficient, renewable-based, ...) support the energy transition. DHC networks are the most cost-efficient way to decarbonise heating systems in European cities. DHC networks support the energy transition.
Today, DH accounts for about 13% of the heating and cooling in Europe. According to you, which role will district heating and cooling networks play in the future energy system, especially in cities?

53 responses
Join us!

www.celsiuscity.eu
Celsius@johannebergsciencepark.com

Celsius Initiative