5th generation district heating and cooling
Thermonet for single family houses

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5th generation district heating and cooling

- Defined by Buffa et al. (2019) who identified 40 grids across Europe
- An idea invented multiple times in different locations
- Lacks a good practical/pronounceable name, how about thermonet?
Thermonet is a shared infrastructure based on individual choices.
Thermonet is inspired by nature. Energy is exchanged in the ground.
Thermonet provides heating and cooling
Thermonet is real

Changing
Typical characteristics of a thermonet

• Uninsulated plastic pipes
• Uses the ground as a geothermal buffer
• Able to provide both heating and (passive) cooling
• Used in combination with geothermal heatpumps
• Multiple possible energy sources
• Scaleable – from few to many
Key learnings about thermonet

• Constructing a thermonet requires a certain mindset
• You need to think both collectively and individualistically, not either/or
• Closed loop boreholes are the most expensive energy source, but also the most available and scaleable
• Utilizing assets that are already present lowers the cost, from regular piles to energypiles, from water supply to water- and energysupply, from wasted heat to utilized heat
• Chicken and egg problem – systemic innovation
Termonet Danmark

- Danish non-profit member-driven association co-created to support the development and expansion of thermonet in Denmark

- Core purpose of Termonet Danmark
  - Thermonet connects and inspires powerhouses who guides Denmark to be a true green pioneer, and provides people all over the world the opportunity for better and more comfortable lives.

- People from different types of organisations: Policymakers, Scientists, Business, Volunteers, Advisors, Cooperatives, Consultants, Citizens

- Combining our individual strengths to realize the great potential that thermonet holds
Thermonet Europe?

• Termonet Danmark is interested in co-founding an international association with the name: Thermonet Europe

• The purpose is to enable more people to learn from each other and help other countries form local thermonet associations

• Denmark has a long tradition of District Heating and is thus strong on the collaborative aspects of thermonet, such as energy planning, cooperative organisations, monitoring of shared energy systems, e.g. Less experience regarding heatpumps both large and small.

• Are you interested, please write an email to kontakt@termonet.dk