

# Innovative low temperature heating/cooling grids

---

## Chairs

Ivo Pothof

### Abstract

Low temperature heating/cooling grids cover an important range of solutions to decarbonize the urban fossil-based heating infrastructure in the Netherlands and many other western countries. This session addresses three key elements of low temperature heating/cooling grids: seasonal thermal storage in the shallow underground, low temperature heat supply from one of many available sources, namely Surface water, and the current state-of-the-art on flexible modular cold heating grids that are subject of investigation in the KoWaNet project.

## Presentation 1

### Thermal storage in urban environments:

*Martin Bloemendal,*

TBA

## Presentation 2

### Surface water as a source for heating and cooling

*Ivo Pothof*

Surface water is an excellent solar collector. The theoretical potential of low-temperature heat from surface water is huge. The canals in downtown Amsterdam can provide heating for 120.000 dwellings. This presentation gives an overview of recent R&D results on a realistic estimate of surface water as a source for heating and cooling and the impacts on water quality and ecology.

## Presentation 3

### Cool heat grids (KoWaNet)

*Sabine Jansen*

The energetic solutions for a sustainable built environment are mainly found in flexible and extendable/modular (open) cold heating grids with temperatures between 15 - 30 °C. These grids are fed with industrial waste heat (sewage, data centers, super markets, swimming pools), solar heat (solar collectors, PVT) and geothermal power. Above all, these grids can provide heating and cooling power at the same time. Such infrastructure has advantages over conventional high and low

temperature heating grids, as well as the collective ground-based heat-cold storage. However, cold heating grids are not ready for market launch yet.

Within this project, we will research and demonstrate the feasibility of these flexible, modular open cold heating grids. This involves the technology, business case, operational procedures and acceptance by stakeholders. By including this wide range of aspects, the results of the projects will be ready for market introduction.