

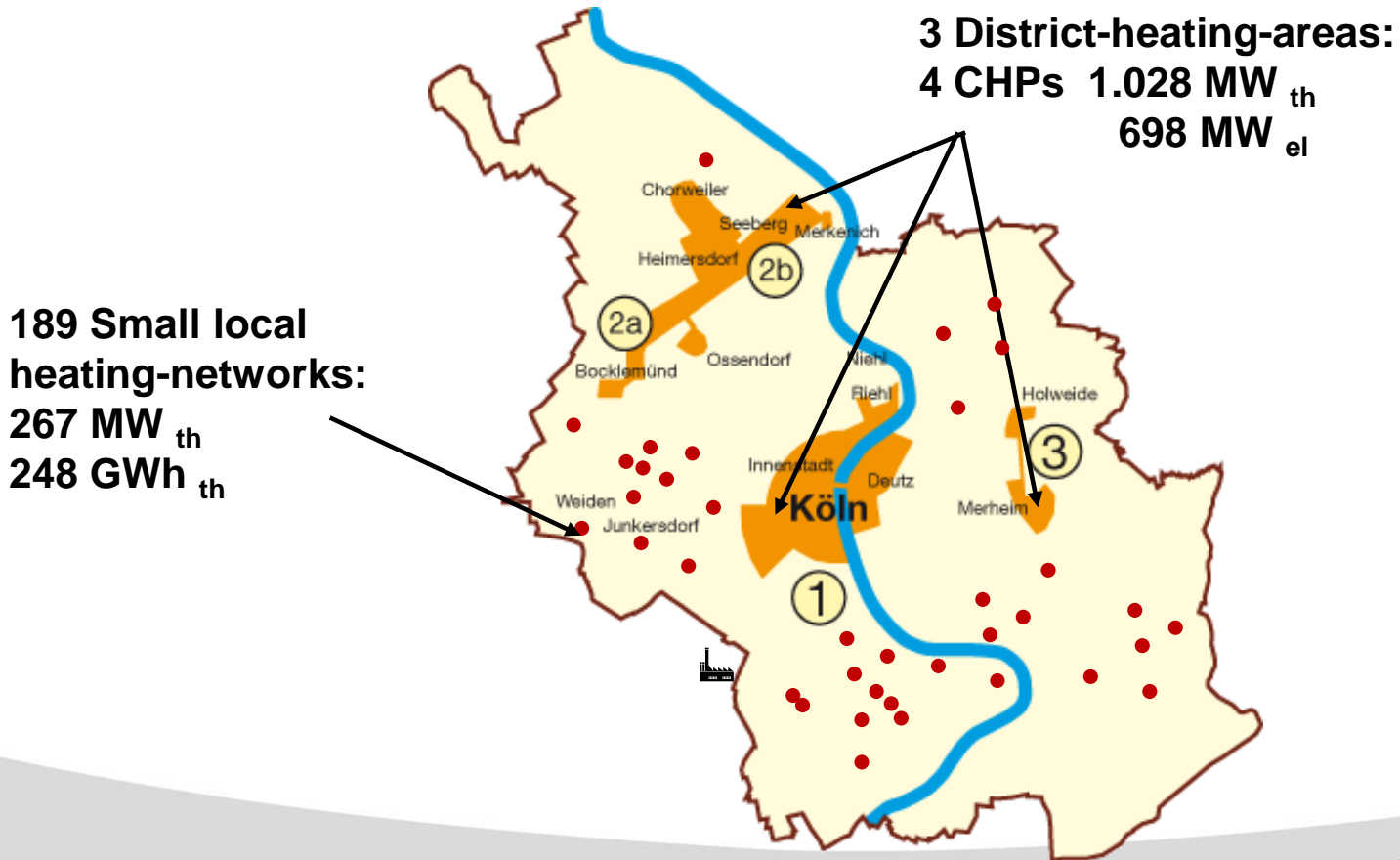
# The Cologne CELSIUS-Demonstrator: Waste heat recovery from sewage water



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 314441.



# Overview: Ready To Use Heat Supply in Cologne



# The Demonstrators

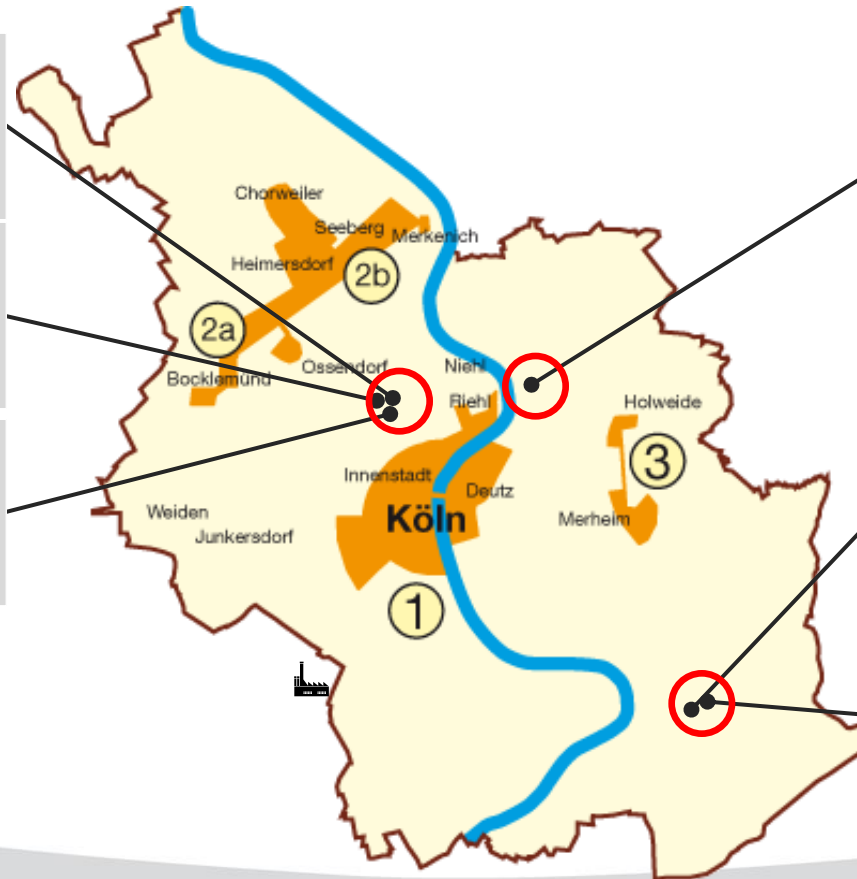
## 3 spots, 6 school buildings

### Nippes

**Edith-Stein-Realschule**  
 Capacity: 2x 370 kW  
 Heat demand: 1050 MWh

**Barbara-von-Sell-Berufskolleg**  
 Capacity: 2x 575 kW  
 Heat demand: 1950 MWh

**Kath. Hauptschule - Bülowstraße**  
 Capacity: 2x 460 kW  
 Heat demand: 650 MWh



### Mülheim

**Hölderlin-Gymnasium**  
 Capacity: 2x 450, 44, 20 kW  
 Heat demand: 959 MWh

### Porz/ Wahn

**Otto-Lilienthal-Realschule**  
 Capacity: 795 kW  
 Heat demand: 801 MWh

**Maximilian-Kolbe-Gymnasium**  
 Capacity: 600 kW  
 Heat demand: 878 MWh

# The Technical Solutions

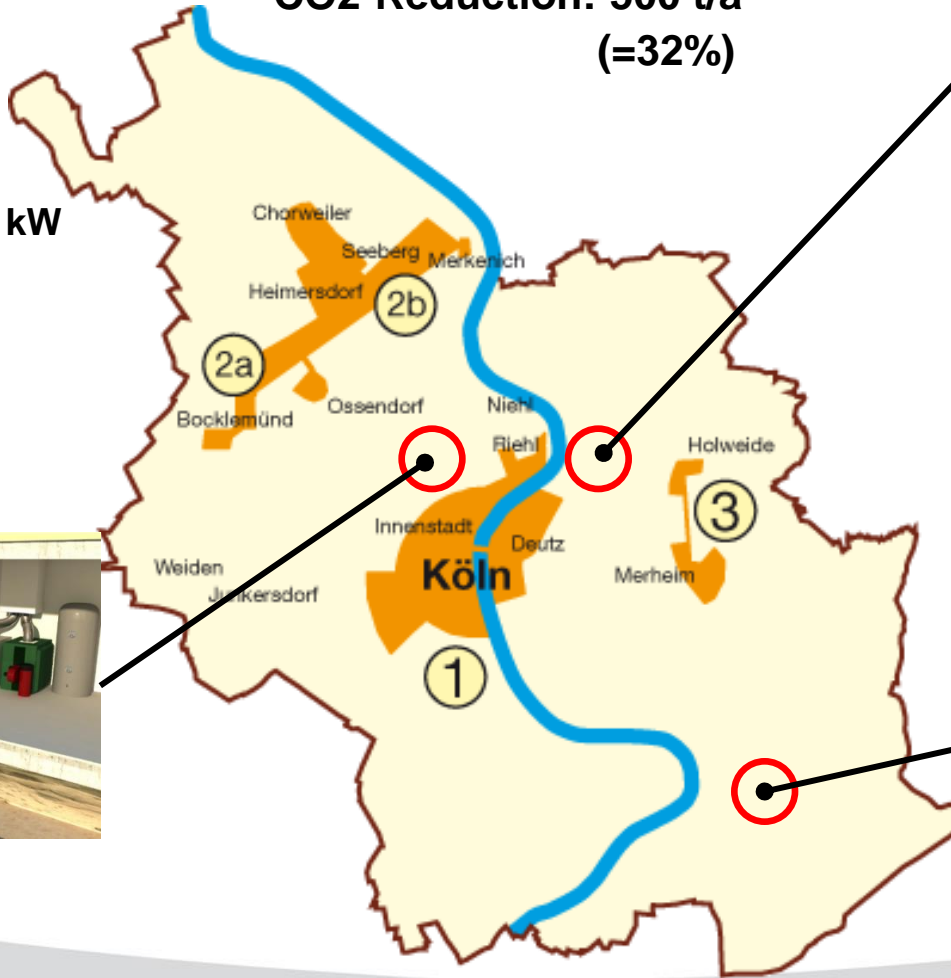
## Nippes

Completed: 2/2015  
Heat recovery: 320 kW

Filtered sewage is bypassed to the evaporator in the boiler room.



CO<sub>2</sub>-Reduction: 500 t/a  
(=32%)



## Mülheim

Start of operation: 2/2014  
Heat recovery: 150 kW

heat exchanger at the bottom of sewer



## Porz/ Wahn

Start of operation: 9/2013  
Heat recovery: 200 kW

<https://www.youtube.com/watch?v=AIYITY7OI9Q>



smartcity  
cologne

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