

# Solar Heat supported thermal Networks in Switzerland

The SolCAD project

1st June 2022

# Context



Source: SDHp2m project, Solites, Arcon, STW Crailsheim, Cofely

**SDH**   
solar district heating

- Adapted heat demand
- Saving ressources

# Context – Switzerland



TVP installation in Geneva on the SIG network 1000 m<sup>2</sup>

# The SolCAD project



## Technical Potential

- criteria
- archetypes
- decision tree

## Case studies

- detailed analysis
- hourly simulations of the production & network
- economical aspects

## Framework conditions

- business models
- Environmental impact

## Interest of stakeholders

- survey
- stakeholder group

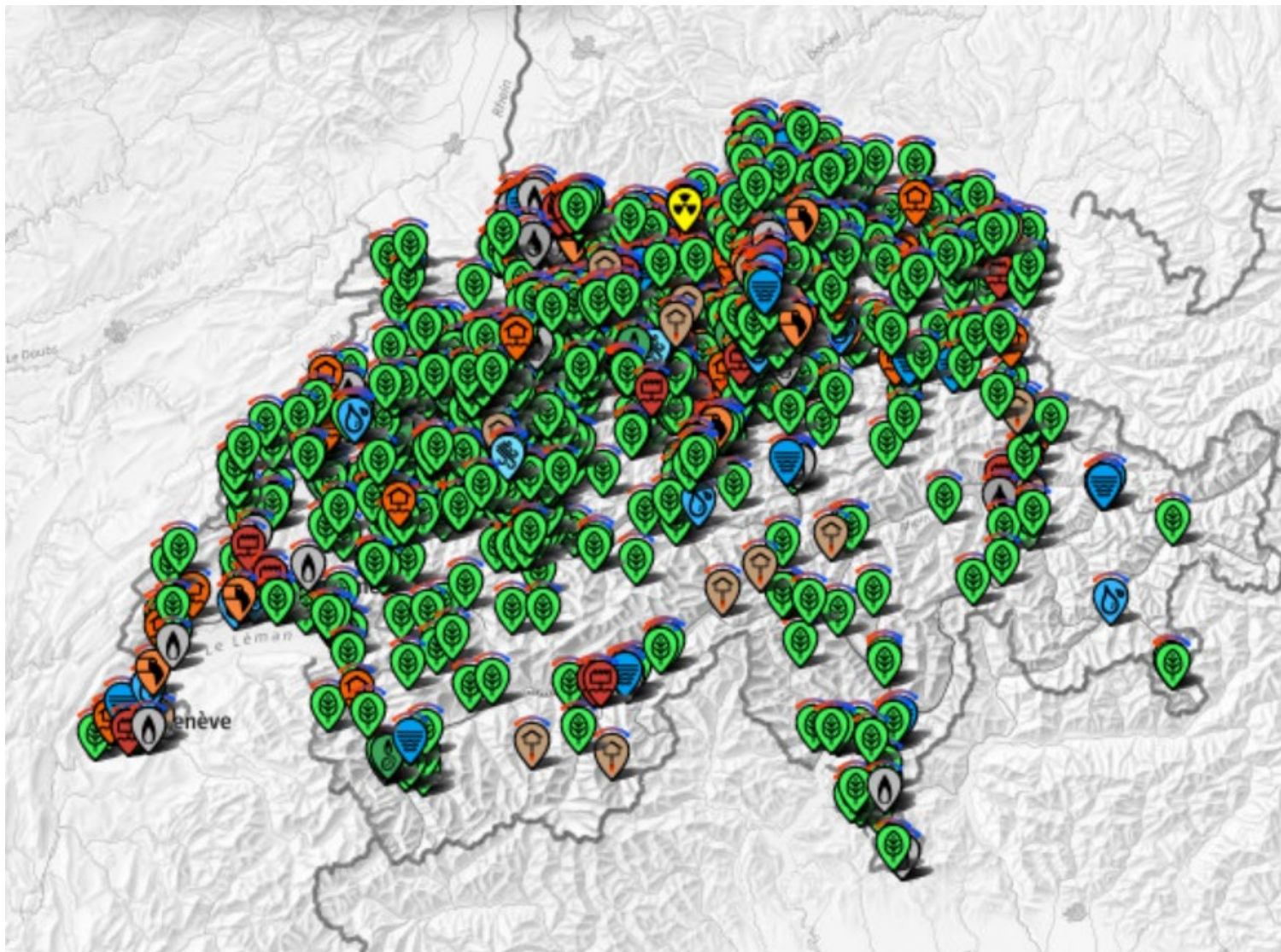
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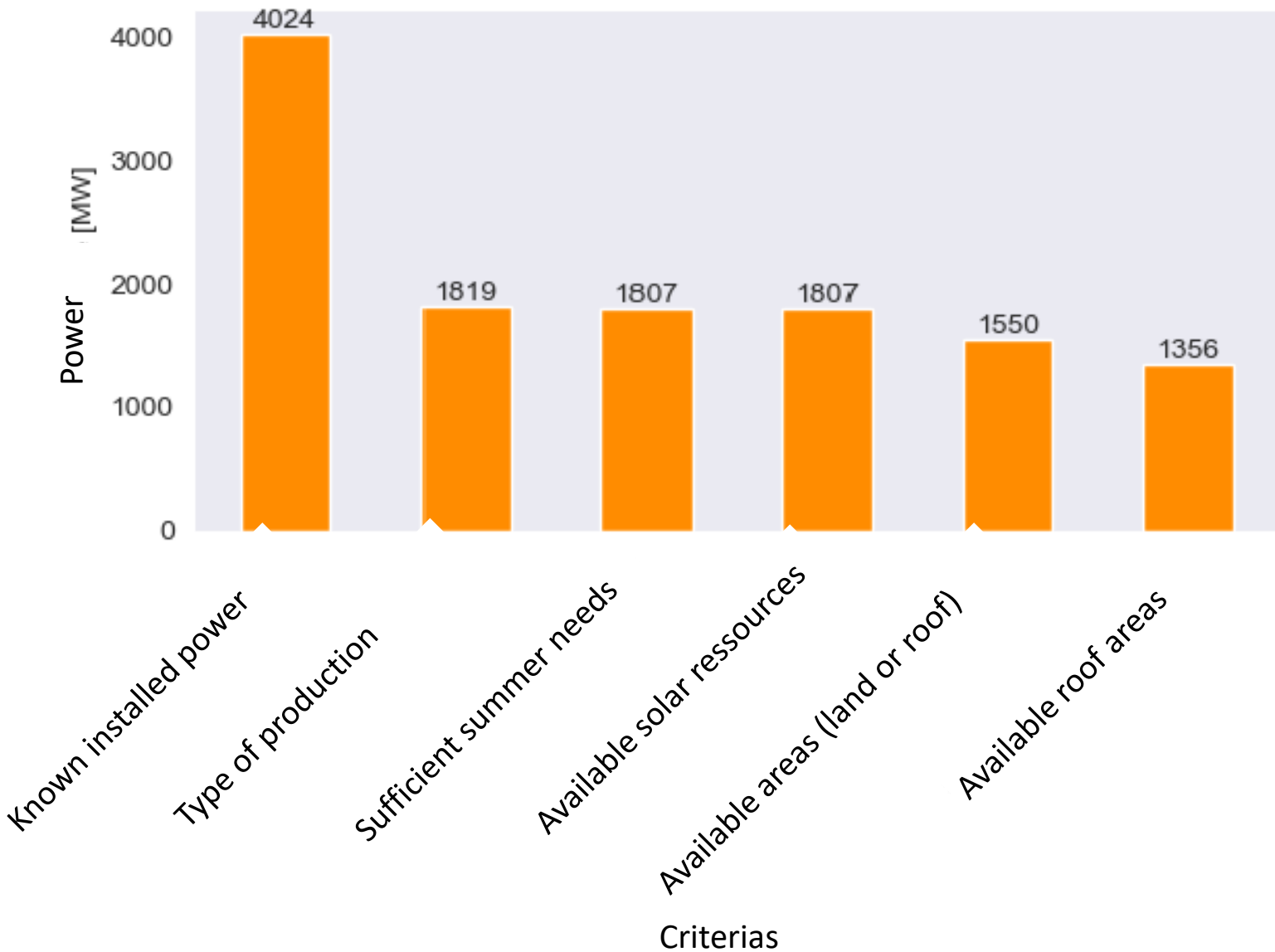
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# Technical potential

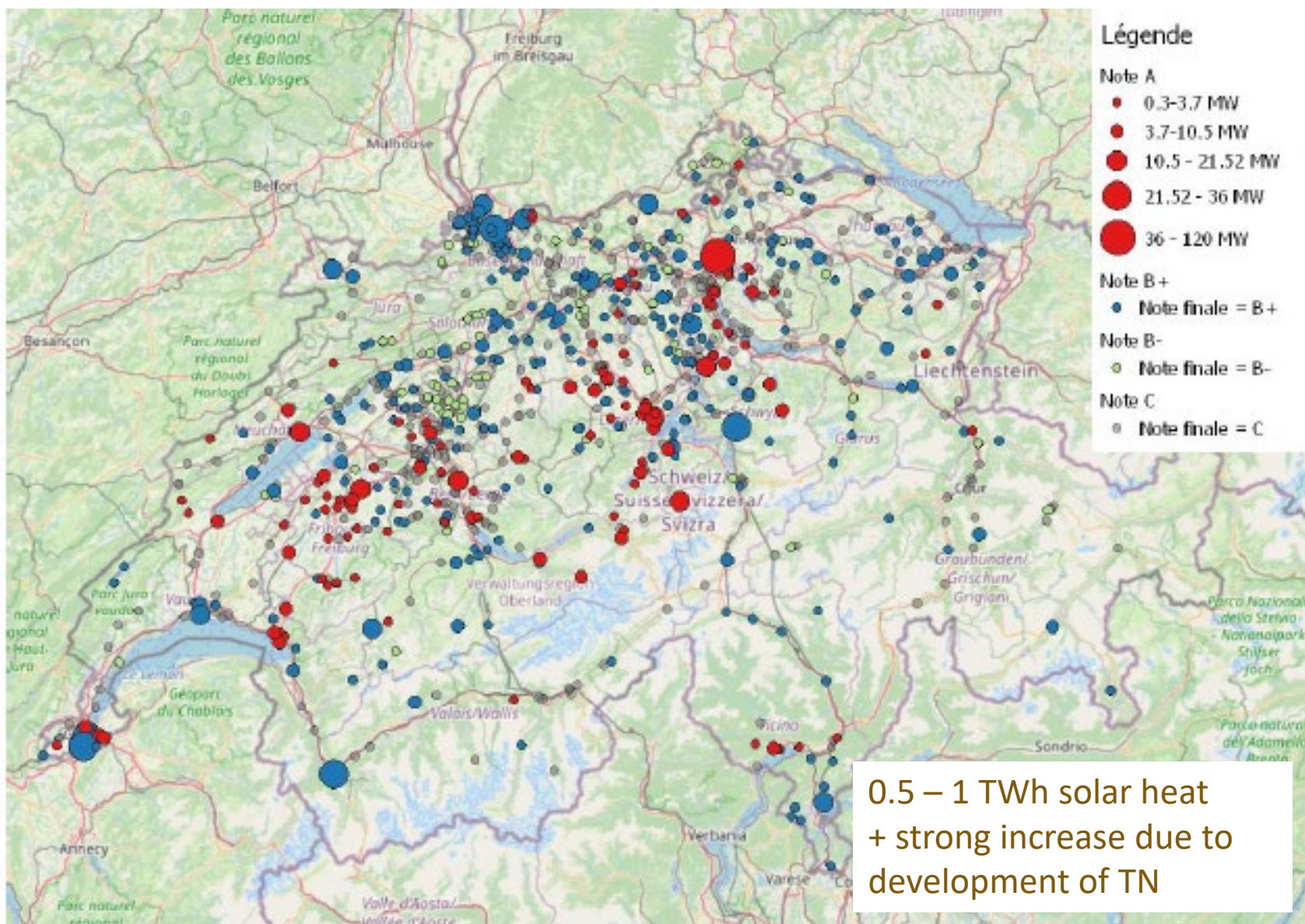


Données Swisstopo, OFEN

# Technical potential



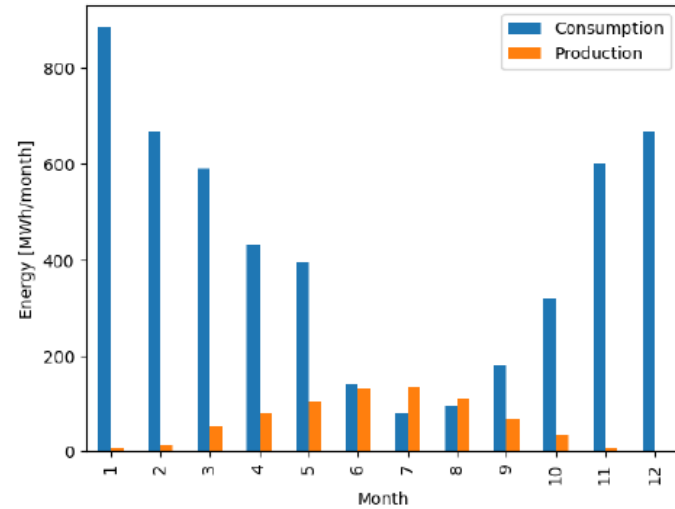
# Technical potential



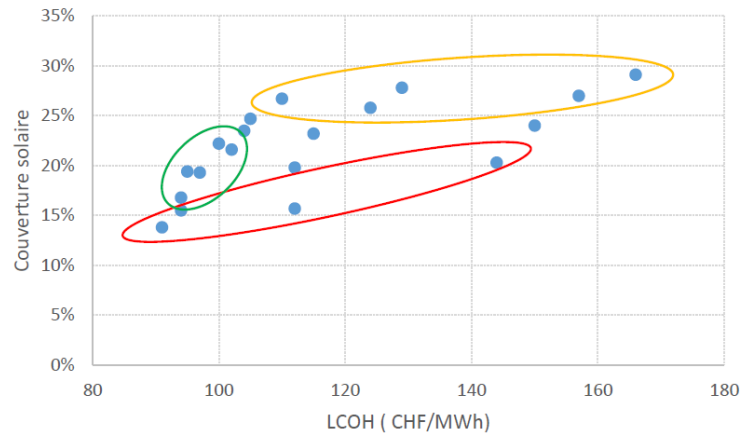
# Case studies



Aerial view of the areas selected for the case study at Marais-Rouges (source : map.geo.admin.ch)

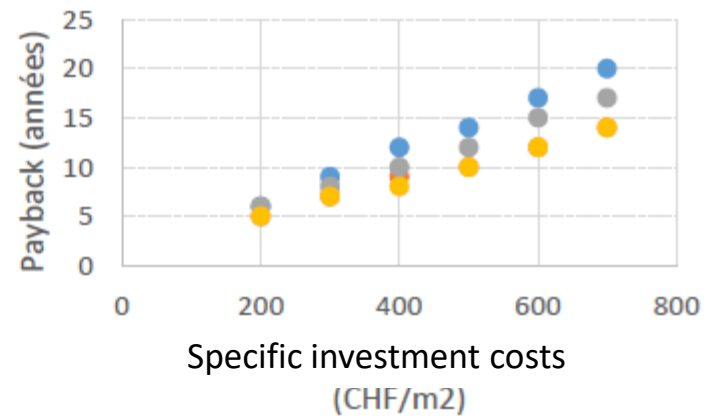
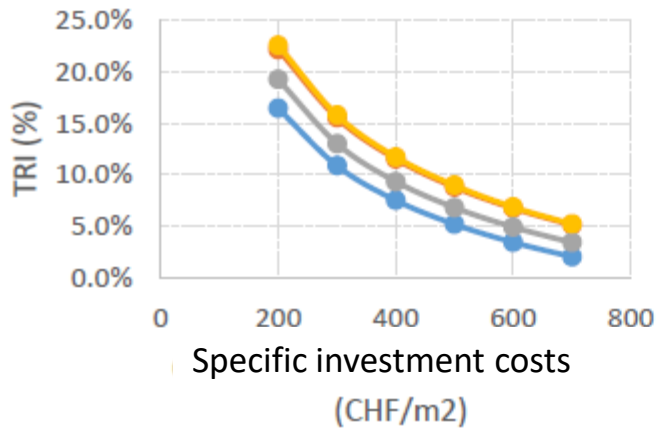
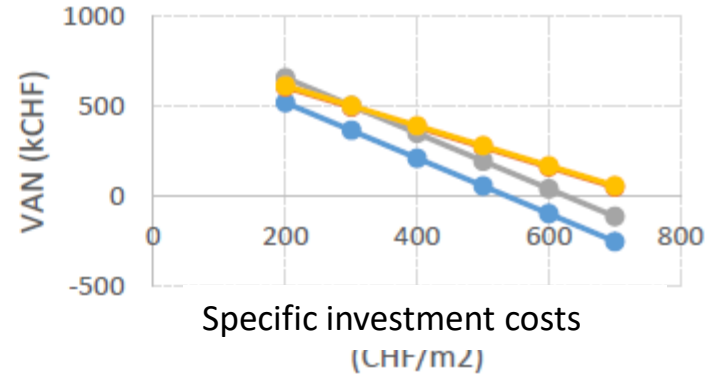
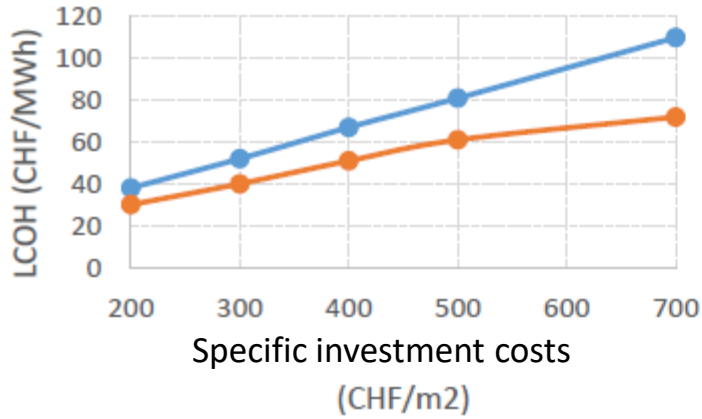


Solar production and heat consumption for the scenario « shutting down the biomasse boilers in summer »





# Case studies



- ❑ Solution already known and studied
  - 14 operators (>50%) have already realized an study about adding solar thermal on an existing thermal network
- ❑ But the application rate is still very low
  - Only one project realized
- ❑ Main barriers to realization

## High investment without subsidies

Too complex / lack of knowledge

Managing an intermittent ressource / storage

Lack of available areas near to the DH network

Concurrence with PV



# Framework conditions

Barriers	Opportunities	Actions
High temperatures, complexity, intermittent	Aggregation of heat demand	Develop training, encourage pilot projects, promote tools
High investments	New business models, step-wise installation, scale effects	National incentives, promote adapted BM
Low costs of heat	... for the moment	Taxes
Need for close areas	High energy density, double-use, renting	Improve legislation

# Conclusion

- Potential of 0.5 – 1 TWh in 2050 and 1-2 TWh in 2050
- Mean LCOH estimated to 15cts. CHF/kWh, sometimes as low as 10cts. CHF/kWh (without subsidies), similar to biomass
- Detailed hourly simulations have shown the opportunity to shut down the biomass boiler in summer
- Save resources for decarbonation in other sectors
- Not economically feasible in the three case studies → subventions 35-50% needed
- Need for clear and fair subsidies system and better sharing of knowledge within the DH industry on this topic
- [Project report soon available](#)

## Increasing the share of renewable energies in DH networks

### 1. **Market development** in cooperation with 6 EU countries

### 2. **Planned activities**

- Exemplary feasibility studies
- Training activities
- Methodical guidelines
- Guide for temporary solutions



### 3. **Information webinars & events:**

- [YouTube](#) channel
- [Website](#) (EU) / [Website](#) (CH)
- [Newsletter](#)

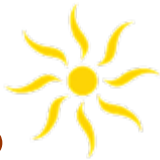


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# Thank you for your attention

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