

# **IEA Networking event Switzerland**

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## **IEA Task 52 Solar Heat and Energy Economics in Urban Environments**

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Lausanne  
Switzerland**



**Task 52  
Solar Heat and Energy Economics  
in Urban Environments**

## Objectives of the Task 52 – 2014-2017

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Better understand the future role of solar thermal in energy supply systems in urban environments

Goal : “Solar thermal energy systems will provide up to 50% of low temperature heating and cooling demand by 2030” – IEA SHC Strategic Plan



**Task 52**  
**Solar Heat and Energy Economics**  
**in Urban Environments**

## Task activities

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- A : Energy Scenarios (Aalborg University - Denmark)
- B : Methodologies, Tools and Case studies for Urban Energy concepts (Sorane - Switzerland)
- C : Technology and Demonstrators (AEE INTEC - Austria)

# Sorane : Energy efficient design

- Building:
  - Energy concept
  - Advanced insulation material (Homeskin H2020)
  - Thermal confort in building



Paul & Henri Carnal Hall  
Rolle



EUROPA - Court of Justice  
Luxembourg



EPFL - Bât systèmes de  
communication

## Sorane : Heat district – CADCIME (1)

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Site of Eclepens

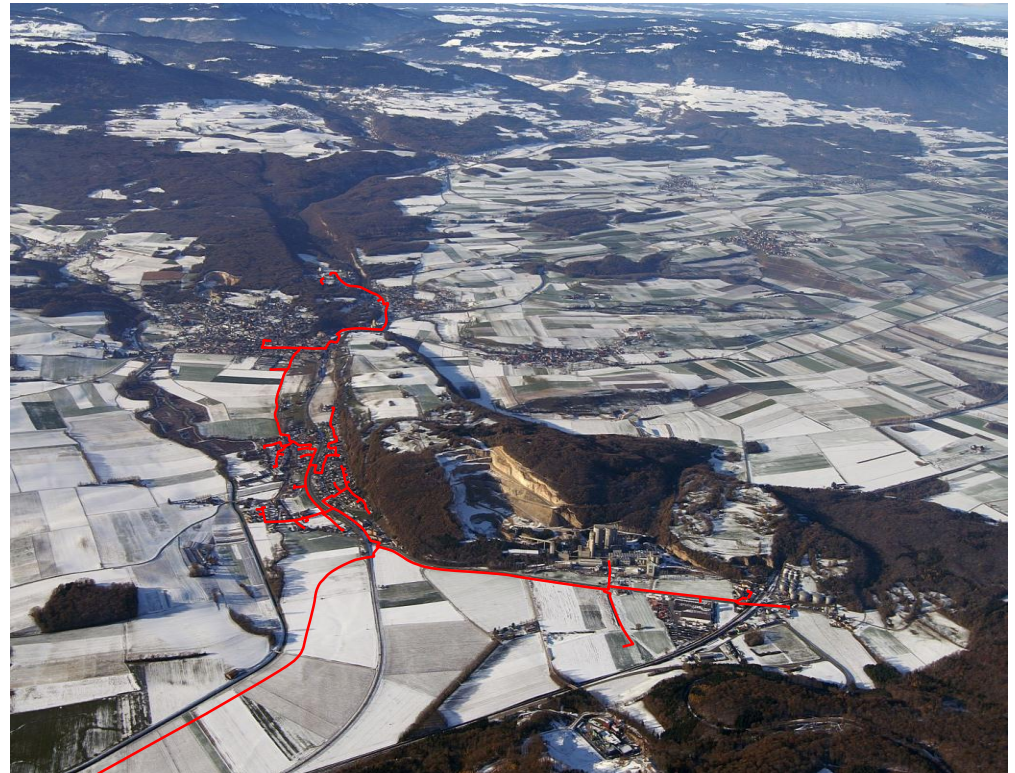


Heat exchanger



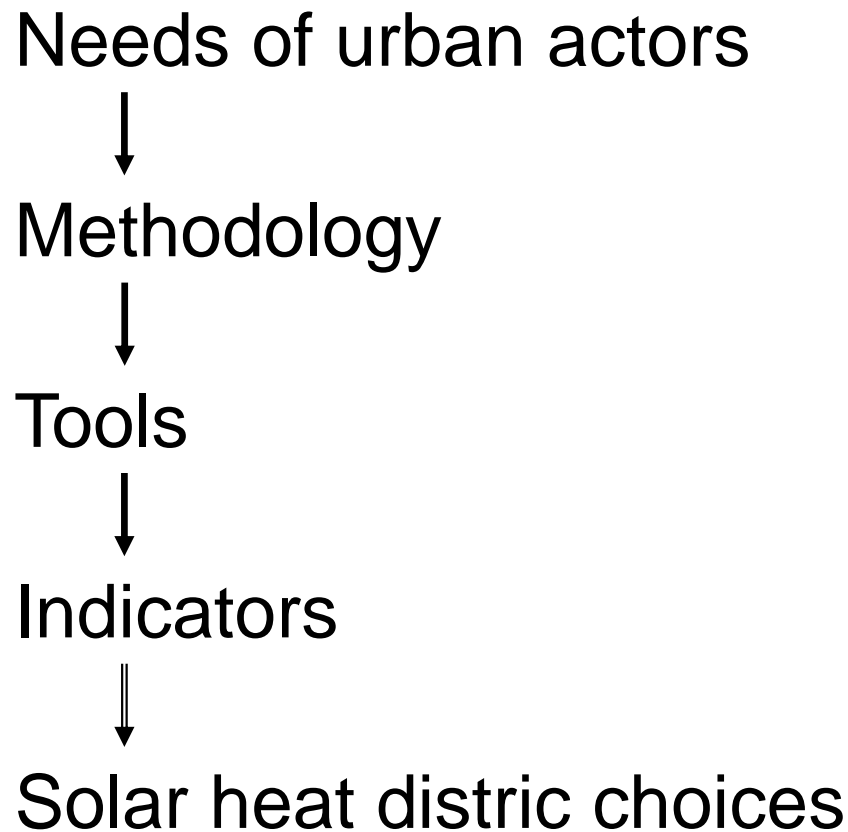
## Sorane : Heat district – CADCIME (2)

- 16 km - Network
- 176 buildings
- 26 GWh/year  
(~3 millions liters of oil)
- 1 person/year



## Subtask B : Methodologies and Tools

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## Subtask B : Methodologies and Tools

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Needs of urban actors



Methodology



Tools



Indicators



Solar heat district choices



## Subtask B : Methodologies and Tools

Local and regulatory authorities	Utilities	Energy Master plans (City) and energy regulations (region/land) and subsidies
		Development of district heating systems and network
	Private companies	Determination of the consumer potential (number of possible consumer)
		Sizing of the solar installation and design solutions
		Profitability of integration of solar thermal
		Thermal vs PV integration

CREM – G. Ruiz

## Subtask B : Methodologies and Tools

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Needs of urban actors



Methodology



Tools



Indicators



Solar heat district choices

**06/10/2015**

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## Subtask B : Methodologies and Tools

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Needs of urban actors



Methodology



Tools



Indicators



Solar heat district choices

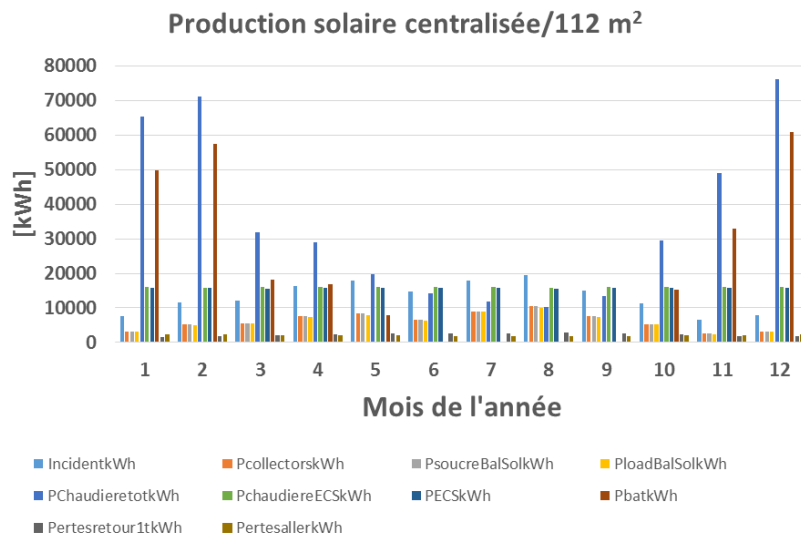
## Solar indicator : Bex, Suisse

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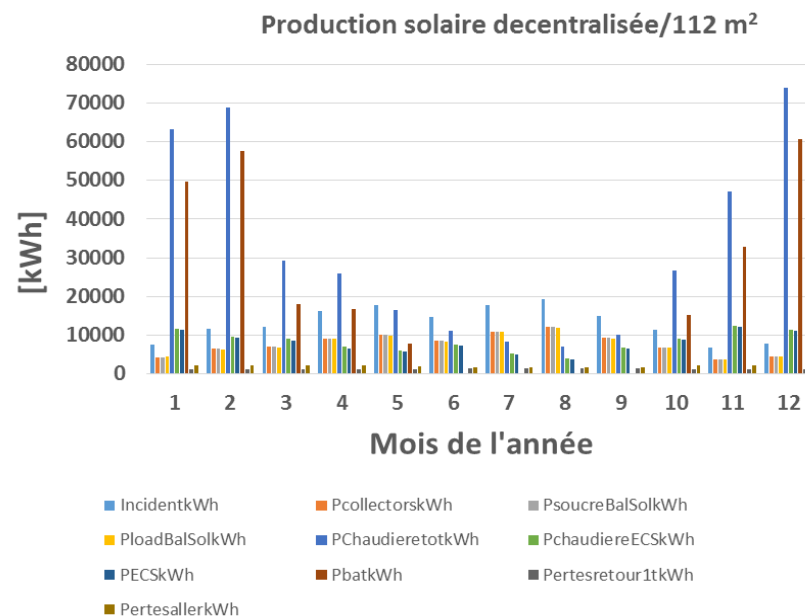


# Solar indicator : Results



## Centralized

Production solaire utile	72459 kWh
Besoins de chaleur chaudière	421297 kWh
Fraction solaire totale	0.15



## decentralized

Production solaire utile	91859 kWh
Besoins de chaleur chaudière	387958 kWh
Fraction solaire totale	0.19
Fraction solaire ECS	0.92

# Oulook

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Methodology => Under development

Case studies => Challenge the methodology

# Question ?

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