

# Point of view from Project Developer on LTES

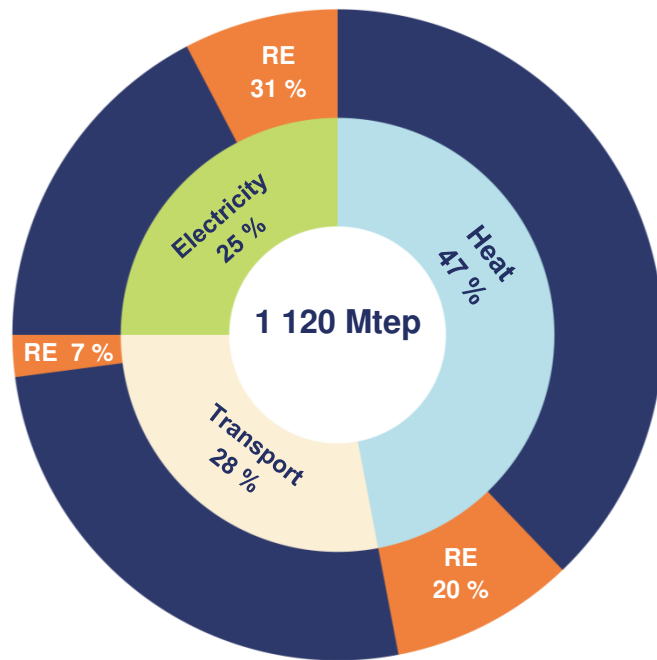
December 2023

**newheat**  
fournisseur de chaleur renouvelable

# Renewable Heat Challenge

A major source of CO<sub>2</sub> emission in the EU

Renewable energy (RE) in **final energy consumption** in the EU (2017)



**A key challenge for reducing CO<sub>2</sub> emissions**

- In 2017, about **50%** of final energy consumption in the EU is for heating
- It is **2x** more than electricity (25%) or transport (28%)
- In Europe, about **80%** of heat production comes from fossil fuel

Source : Eurostat

Tackling the carbon-intensive heat production issue is a priority to reduce our CO<sub>2</sub> emissions and mitigate climate change

# Newheat, renewable heat supplier, leader in solar heat

Decarbonise industrial sites and district heating networks

## Our vision

Newheat combines **all types of renewable heat generation** and **thermal energy storage** into an advanced system, following a precise **merit order** answering to the company's view of an economic and environmental optimum

### Heat generation



Heat recovery



Solar thermal



Heat pumps



Biomass

+ other combustion sources

+ ——— Technologies merit order ———> -

### Thermal Storage



Short or long-term storage

## Our model

An **independent heat supplier**, managing projects throughout their entire life cycle to deliver a **turnkey supply of CO2 free thermal energy** on the long term

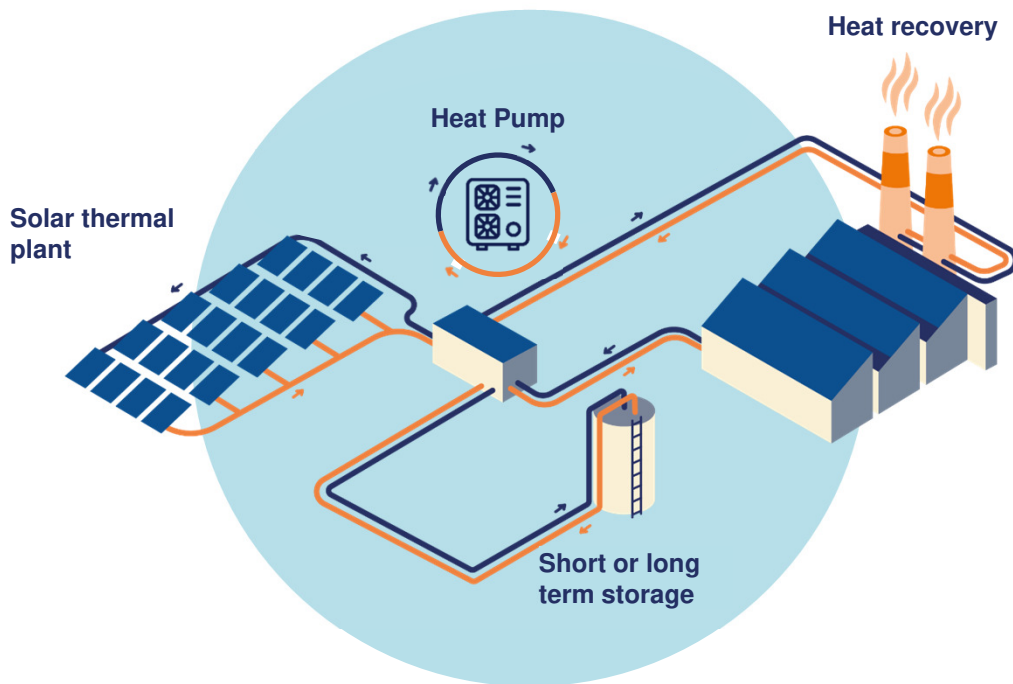


Newheat provides an integrated project management - the company develops, designs, finances and supervises the entire life cycle of the project, in order to offer a turnkey heat supply solution for the final consumers



# Our technical know-how

Design and operate renewable heating installations, tailor-made for our customer's need



## A cutting-edge expertise on the key project issues

- Development of proprietary thermo-hydraulic **dynamic modeling tools** (energy flow, temperatures, dynamic behaviour, etc.)
- **Design** renewable heat plant **tailor-made** for each site :
  - Considering local context (available area, specific administrative rules, etc.)
  - Optimal energy mix depending on local resources and relevant technologies
  - Reliable and competitive technical solutions
- Implement a **specific and optimized Control** of the plant, allowing a piloting optimization during the operation phase
- An **ambitious R&D strategy**, recognized at international level
  - 5-time winner of call for projects for R&D program
  - 5 M€ effort since the creation of the company
  - Contribution to IEA works on Solar Thermal and Seasonal Storage

A project-by-project approach ensuring a competitive heat price and securing the delivery of energy “at the meter”



# Key advantages of Large Thermal Energy Storages

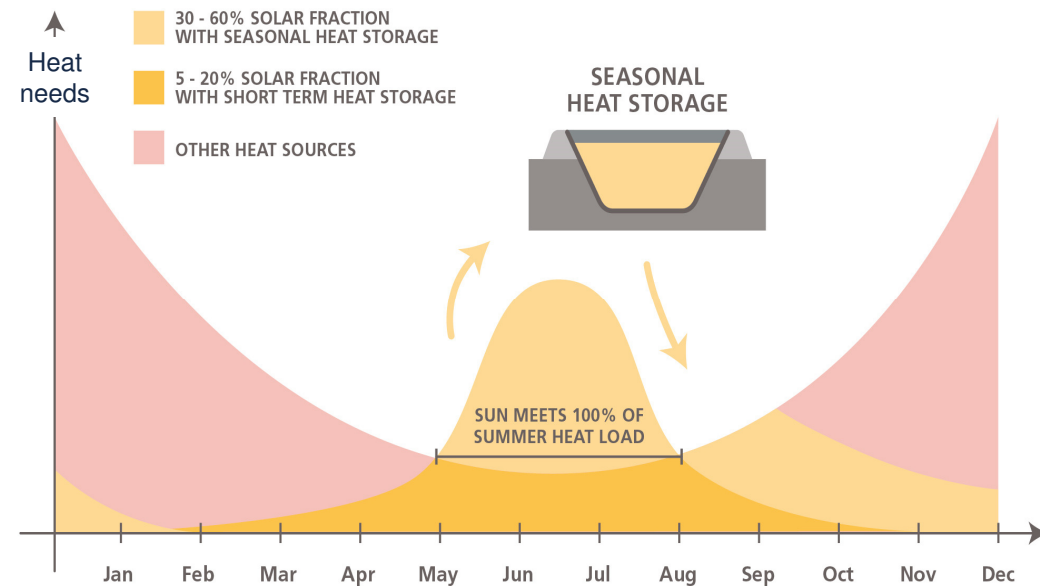
A central element of Flexible and Intelligent heat distribution networks

## LTES Strengths

- Low Tech
  - Simple Working principle
  - No rare and critic materials
- Competitive
- Long lifetime

## LTES Offer

- **Flexibility** in possibly complex heat distribution management
- Increase of the **performance** of production means
- Energy **arbitrage** (flexibility - power-to-heat)
- Savings from investment in **additional means** of production
- Increase in **heat needs coverage** by renewable energy sources



Objective : Store heat to make it possible to exploit a renewable or recovery source, competitive to make it available at the time of demand



**newheat**  
renewable heat supplier

**Thank you**

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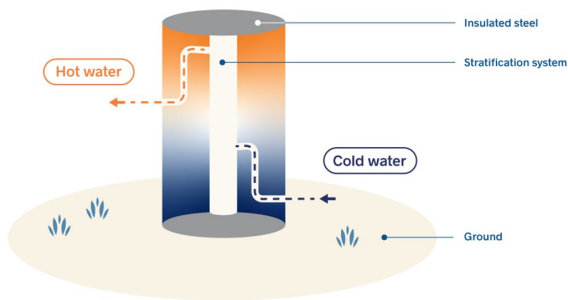
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# Our technical know-how

Short or long term thermal storage

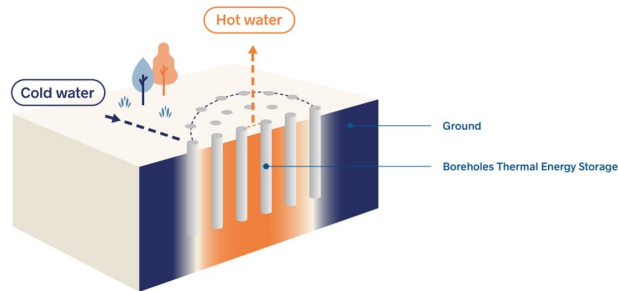
## Storage tank with a stratification system



**Daily storage (3 to 5 days)**

Volume from 1.000 to 10.000 m<sup>3</sup>

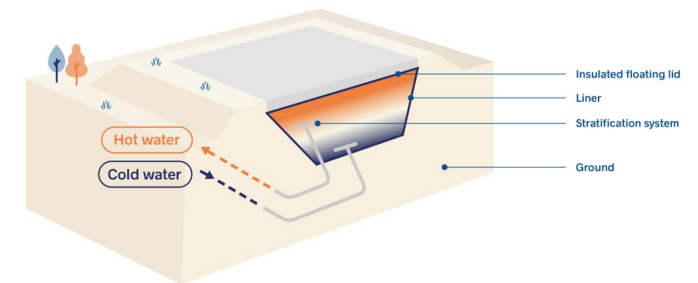
## Bore Holes Thermal Energy Storage (BTES)



**Inter-seasonal storage (6 to 10 months)**

Equivalent volume from 10.000 to 100.000 m<sup>3</sup>

## Pit Thermal Energy Storage (PTES)



**Inter-seasonal storage (6 to 10 months)**

Volume from 100.000 to 500.000 m<sup>3</sup>

These technologies allow us to offer solutions covering 100% of a client's heat requirements at a temperature below 100°C

