

# Heat decarbonisation: the key to Europe's energy independence

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14/02/23

Old decades **DHC systems** have demonstrated their ability to adjust and adapt themselves to the **energy transition**

### **Current Context & trends**

- **Energy Crisis (heating crisis),**
- **Low supply temperature network**
- **Emergence of the HP technology is a game changer,**
- **Biomass controversies,**
- **Combustion vs w/o Combustion solutions**
- **Life cycle Assessment approach is becoming a "must have",**
- **BioGas for District heating systems ?**
- **Is green H2 really made for District heating systems ?**

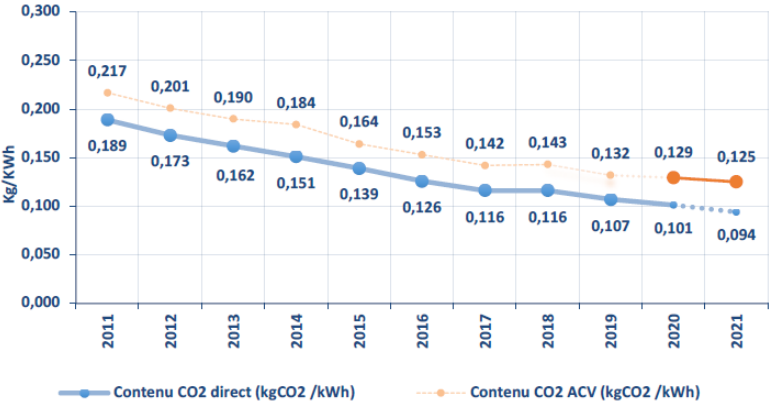
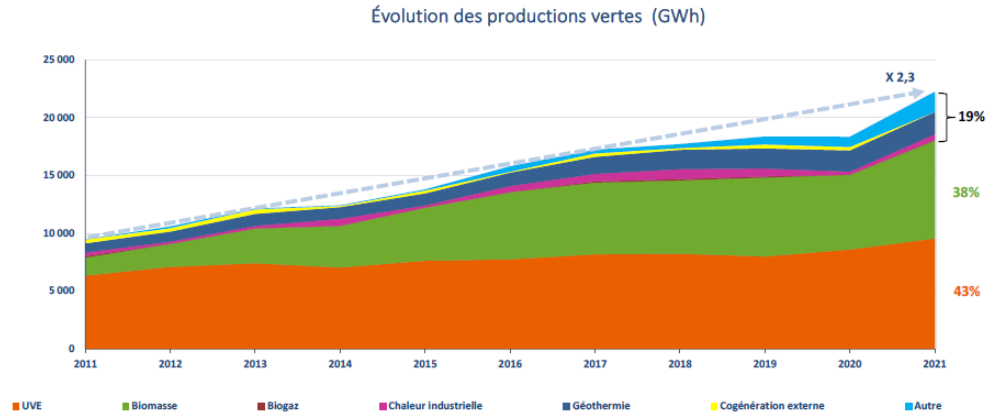
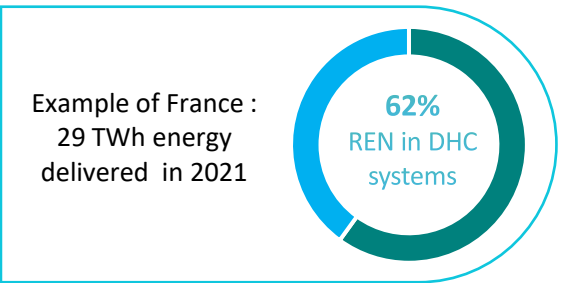
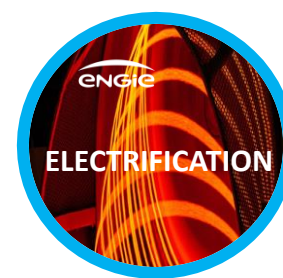
We are living in a period of crucial change (paradigm shift) in district heating (DH) systems.

Developed and built between 1930 – 1970, 2nd Generation (2G) DH (with supply temperature above 100°C and coal as main energy source) has been replaced later by 3G DH using coal, biomass and wastes as primary energy sources and lower supply temperature (80 – 100°C).

The 4G DH is knocking at the door . The 4G DH with a supply temperature below 70°C enables lower heat losses, integration of renewable heat (solar, geothermal, wastes and biomass sources) and compatibility with cooling networks and smart energy systems.

Our (future) district heating networks are greener and greener,

flexible and based on #1 waste heat, #2 Renewables



REN production x 2 in 10 Years

In the wake of the current energy crisis, there has never been a greater demand for clean heating technologies: we are at the dawn of a new clean energy revolution! It is now critical to carry the vision of a modern, efficient, and decarbonized DHC sector.

# District heating as a mean to transition towards

## #1 waste heat, #2 Renewables in compliance with EED (Article 24 - efficient DHC)

### LIMEIL-BREVANNES

A multi energy carrier to feed one of the first Eco District near Paris .

An innovative virtuous green field heating network that combines 4 renewable energy sources to reach **85% REN**:

- 3 MW Biomass + thermal storage
- 3800 m<sup>2</sup> Solar thermal for domestic hot water
- 2500 m<sup>2</sup> Photovoltaic panels for electricity production
- Heat pumps on CMVs

Key Figures of the heating network:

- 2 km of network
- **85% renewable energy rate**

### MEUDON

From **CHP to Geothermal heat production**, conversion of an existing district heating network previously 100% gas fired CHP and boilers.

A co Investment between the city and Engie to build a new geothermal production plant to feed an existing network. Some figures of the GéoMeudon project:

- 1,550 m: Vertical depth of wells,
- 2,000 m: Well length,
- 15.9 MW Capacity of geothermal plant,
- 64°C: Temperature of the water

Key Figures Meudon heating network

- 8 km of network
- **83% renewable energy rate**

### VELIGEO

From **CHP to Geothermal heat production**, conversion of an existing DHC system based on gas fired CHP and boilers. Some figures of the Véligéo project:

A co Investment between the city and Engie to build a first of its kind multi drains geothermal production plant to feed an existing network. Some figures of the Veligeo project:

- 1,600 m drilling depth
- 2,400 m Well length
- 16 MW Capacity of the geothermal plant
- 64°C: Temperature of the water

- Key Figures Véligéo
- 19 km
- **66% renewable energy**

2010

30% REN

2020

60% REN

2025

65% REN

2030

>70% REN



**Thank you,  
ask your question!**