FRANCE – national policy framework

Current state of District Heating in France (2019)

761 DH systems * 5 424 000 citizens served by DH * 761 MWth total installed district cooling capacity

Natural gas remains the main fuel source for district heating and tends to replace other fossil fuels with a higher carbon footprint, namely coal and oil. In parallel, the share of renewables and recovered energy has increased to 56% in 2017 and has more than doubled in 10 years. Heat networks currently provide approximately 5% of France's heat demand. However, the sector is expected to grow in the near future given the ambitious target set in the 2015 Energy Transition Law. DHC from renewable and recovered energy sources is assumed to increase by a fivefold by 2030 (compared to 2012). The national low-carbon strategy (SNBC), adopted in 2019, defines the trajectory that France intends to follow in order to achieve carbon neutrality in 2050. DH are an excellent vector for decarbonizing heat, which represents 50% of final energy consumption.

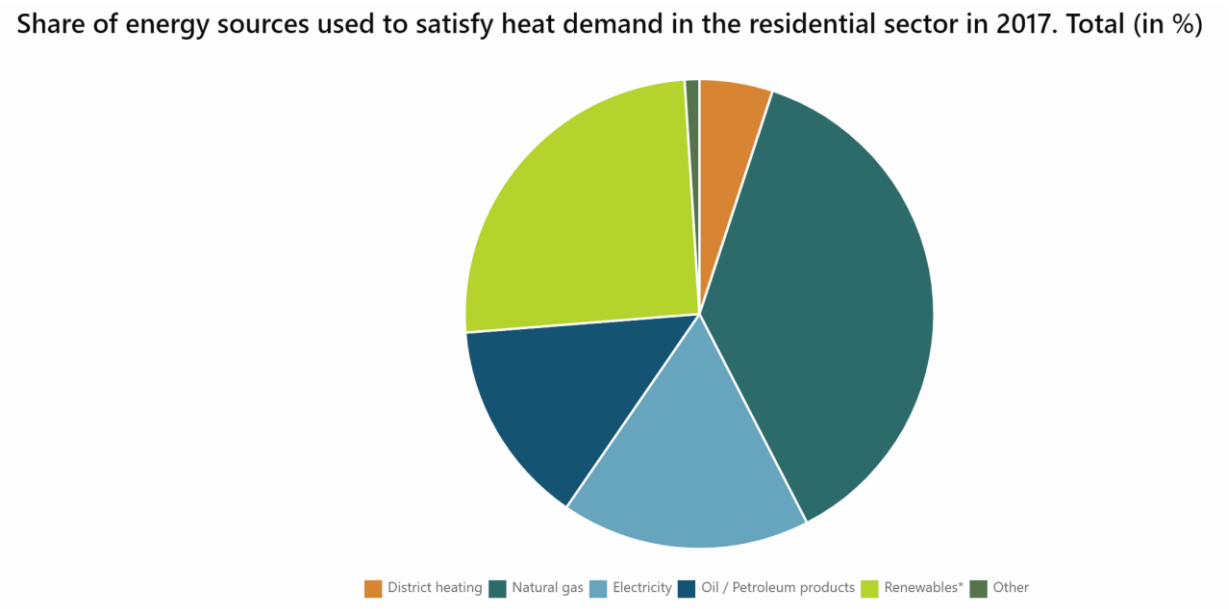

Figure 1: Share of energy sources used to satisfy head demand in the residential sector.
Source: Euroheat & Power, Country profiles, 2019

National policies affecting 4DHC development

- **A working group on renewable heat and cooling was launched in March 2019 by the Ministry of Ecological and Solidarity Transition to identify and remove the barriers to the development of the sector. The Minister for Ecological and Solidarity Transition announced on 7 October 2019 the implementation of 25 measures to develop the DHC sector with 5 key objectives: increasing the mobilisation and attractiveness, improving consumer information and protection, strengthening the economic competitiveness, increasing renewable and recovery energy delivered, enhancing innovation and investing in Research & Development.**
- **Reduced VAT (from 20% to 5.5%) for the consumers** (direct impact on the energy bill) in case more than 50% of the DH energy distributed in the systems is provided by renewables or waste heat
- **Financial support for investments** (not for the operation) through a fund called **the "heat fund"** (financial help nearly at the maximum support possible authorized by the EU framework)
- **Obligation for each big new urban projects (since 2010) to study the feasibility of integrated a district heating** (creation or extension) along with other renewables energy technologies.
- ADEME (the national energy agency) through **the 'heat fund' finances also R&D projects for 4DHC** (thesis and research centres), technology assessment (tests in lab), market deployment (trainings, call for projects, studies, guidebook, etc.)
- 'PPE' - the national multi-annual heat strategy (2016): Set intermediary targets before 2030 where 4 Mtep of renewable and waste heat are expected in DHC: 1.35 Mtep renewable and recovered waste heat in 2018 (it was 0.68 Mtep in 2012) and between 1.9 Mtep and 2.3 Mtep by 2023
- National heat map: National heat map was published in 2015. It includes the heating and cooling demand for residential, tertiary and industrial sector. It also shows existing district heating networks.

Other national regulations influencing energy efficiency and renewable energy investments, funding programs

- **Law on EE &RES of 2015:** new target for 2030 regarding the district heating: a 5-fold increase in renewable energy and waste heat in district heating. For each regions mandatory mapping of district heating and biomass master plan on their territories. National obligation on local authorities owning a district heating built before 2009: to realize a 10 years master plan outlining its evolution and how to integrate more renewables.
- **Thermal regulation for buildings (2012)** taking district heating into account as a potential source of renewable energy; based on carbon content of district heating. If the carbon content of a district heating is particularly low, it is then possible to insulate the building less.
- As mandatory due to the **Art. 14 of the EED**, for every new major district heating or every new major plant built in France, there must be a **costs-benefits analysis regarding the use of industrial waste heat in the district heating.**

- In 2016, supported by CEREMA, ADEME and AMORCE, the French Ministry for Energy proposed municipalities over 10 000 inhabitants and disposing of no district heating to finance **a feasibility study for DH** if they decide to build one.
- **Energy savings certificates scheme** takes into account some district heating renovations.

Regional or local policies influencing 4DHC development

- **Changes in urban planning in 2015**: local authorities can impose to an area the use of a certain percentage of renewable energy for every new buildings. If this percentage is high, DHC can turned to be the only financially viable solution.
- **Regions are obliged to do a mapping of DHC in their territory**. Some regions chose to go further and to detect the area where a district heating can be financially viable (Paris region did that). A few regions chose also to give financial support for the connection of new building (substation and adaptation of the network within the building).
- **Local authorities must also comply with the national targets** but because they are often owners of district heating they used that tool to reach it. Often through a mandatory master scheme plan, they engage actions to improve their district heating.
- **No regional heat strategy plan but a Master scheme on climate, air and energy**. Sometimes district heating are barely mentioned in it though. CEREMA has prepared a study about those schemes where heat mapping is mandatory now.
- At the local level, thanks to a new **law regarding energy data access** (more energy data available for local authorities), planning and scheme would be more precise.

Local and regional good practices

- **Amiens:** Investing some 60M EUR, the construction of a district heating system is being finalised. The DH is planned to use 60% of RES and recuperated heat from waste water and biomass to heat some 19 000 homes, 25% in the city.
- **Grenoble:** France's second largest network uses energy from its waste incineration plant, providing for 35% of its heating need. A new biomass fired power plant has been constructed integrating cogeneration with the aim to increase the city's self-sufficiency in energy.
- **Vassy / Valdallière** : A municipality owns a DHC and ensures the supply of local wood from local farmers
- **Dunkerque:** Biggest French district heating and cooling facility fuelled with waste energy from the local industrial sector. Awarded in 2009 by the French 'District Energy Climate Award'.
- **Annemasse** : District heating and cooling fuelled with 90% biomass.
- **L'écoquartier du Fort – Issy-les-Moulineaux** - Low temperature district heating, fuelled with 78% geothermal energy.

BARRIERS to development of 4GDHC

Policy or legal barriers

- A recent law made **compulsory the retrofitting of tertiary buildings**. DHC will have to adapt to a decreased consumption. (This may be an opportunity for 4DHC though)
- There is **a lack of awareness of local stakeholders** with regards to the concretisation of the EU and national objectives of development of DHC.

Financial and market barriers

- **Tax credit available for users of district heating** when they connect to it (for the substation and the secondary network for example) but because the contract linking the building to the district heating is between the district heating manager and the building administrator (as oppose to the users), this financial support proved to be very rarely used whereas it worked perfectly when someone changes its old gas boiler by a new gas boiler.
- **Lack of financial support for the substation and the secondary network** is also the barrier to connect all the buildings heated with electricity (lot of buildings in France).
- It is rather easy to develop DHC with waste heat recovery from waste incineration plant because it's a public service and thus the local communities are often in charge of waste incineration plant (through a private operator) but it is complicated for industrial heat. **The long return on investment of a district heating** (15 to 20 years) isn't the time scale of an industrial which does not invest if the return on investment is more than 5 years. Besides there is an incertitude about the future of industrial activity and the continuity of the source for the DHC.
- **Low gas prices affect also projects badly.** The financial support (through the heat fund) is calculated for the district heating to be slightly cheaper than a gas solution (since gas prices dropped, the situation has worsened).

Recommendations for policy makers

- **Prioritize the retrofitting of tertiary buildings** (especially the public ones) by started with the buildings which use no renewable energy (or not connected to district heating) → greater immediate impact on the GES and it allows more time to the district heating to adapt to the future demand.
- **Raise awareness of local stakeholders** by localising and measuring the potentials of extension or creation of DHC, and its consequences on the supply side in case of biomass.
- **Increase 4DHC pilots in France** (4DHC is not at all well implanted in France, not enough pilots exist and DHC suffers from bad feedback regarding new buildings.)
- **More links with storage** needs to be made especially regarding possible links with electrical intermittent renewable energy.
- **Engage with local stakeholders** including users in a roadmap process that will showcase the heat energy system (location and sizes of potentials and links between resources and uses)
- **Creating a guarantee fund** (The French Ministry for Energy and ADEME are thinking about creating guarantee fund but none exist yet.)