

SUPPORTING THE DEVELOPMENT OF SUSTAINABLE HEATING & COOLING SYSTEMS TO DECARBONISE THE BUILDING STOCK

INTRODUCTION

In 2021, Energy Cities gathered four cities from Belgium and France, who discussed barriers and levers they experienced to develop sustainable heating and cooling systems.

PROFILE OF PARTICIPATING CITIES	
ANNECY (FR)	<ul style="list-style-type: none"> ⊕ Plans to double the production of renewables by 2030 ⊕ Actions on renovation, new buildings, energy supply, sustainable urban development ⊕ One existing district heating network powered by the lake: it supplies the swimming pool, houses, a hotel, and a retirement home. ⊕ Developing a district heating strategy
CHARLEROI (BE)	<ul style="list-style-type: none"> ⊕ Exploring further the potential of the territory and its potential to develop a positive energy district ⊕ Launching a platform for renovation to support citizens ⊕ Big geothermal potential due to the heritage of coal mining of the city ⊕ Many problems with the previous district heating network, which is not up to date anymore: challenging to convince and engage citizens
LIÈGE (BE)	<ul style="list-style-type: none"> ⊕ Renovation is a big issue ⊕ Exploring the potential for the creation of a positive energy district ⊕ Involved for a long time in district heating networks ⊕ Liège 2025 project: to map the potential for district heating and cooling networks, including through geothermal
COMMUNAUTÉ D'AGGLOMÉRATION PAU BÉARN PYRÉNÉES (FR)	<ul style="list-style-type: none"> ⊕ Long natural gas history ⊕ Education & involvement of citizens in sustainable development, especially on waste ⊕ Renovation as a priority ⊕ District heating network first launched in 2013, with gas. Now further developing (44km) to supply 11,500 houses

PLANNING

Renovation is key to decarbonise building emissions, but challenging when it comes to condominiums

If decarbonising individual houses and heating has already proved feasible (even though not always easy), when it comes to decarbonising condominiums, the challenge is bigger. It is not only a question of financial support, but also of social considerations. Undertaking works in condominiums requires the approval of the different owners and management agents, who may be scared away by the amount of work needed and the administrative burden. For this reason, decarbonisation projects in condominiums are often less ambitious or cancelled.

In France, the “Ma PrimRenov” benefit, which support owners willing to renovate their houses. There is also a dedicated scheme for condominiums which has been put forward: Ma PrimRenov’ copropriété. Support is granted to the management agents only if the renovation leads to an improvement of at least 35% of minimal energy performance. The fact that the management agents are the ones in charge of the subsidies leads to less administrative burden for the different owners and facilitates the work. The subsidies are divided into two categories: project management assistance and renovation work. Craftsmen must be certified as using environmentally friendly methods. However, the maximum allocated subsidy per household is of €3,750.

To support condominiums’ owners, the city of Liège has developed an online platform to guide them through the overall process and encourage them to take an overall approach of their buildings (adaptation to climate change, safety, insulation, heating, and cooling appliances). As sometimes conditions to access subsidies can vary quite a lot according to the providers (national, regional, or local authorities), it is important to guide citizens.

Watch out! In Belgium, it was not possible until recently for condominiums, as legal entities, to be eligible for renovation subsidies, which clearly limited the possibilities to finance renovation works, especially for common parts.

Best practice from Anney: Embarking condominiums in renovation works

To embark condominiums in heavy renovation work, Anney dedicated one full-time position to be directly in touch with the management agents of the condominiums and the owners. Through a direct phone line and regular participation in condominium-owners' meetings, one identified contact person centralises all questions, dispatches them to the relevant people, and comes back with a personalised answer. This is key to facilitate communication and build a trustful relationship.

A proof of results? With an initial objective of 30 condominiums to be embarked on the renovation journey (mostly for façade and roof renovation, as heating is not often seen as a priority), in the end 40 condominiums voted positively to launch the works.

Planning the development of district heating network is key, but also implies synchronising urban policy and energy planning

Cities are willing to expand their district heating networks and highlighted how concession contracts or calls for interest can be allies to plan the future of the network. It can be through specific criteria (plan the connection of future buildings to the network) or through the flexibility which district heating can offer. Indeed, the network can adapt to changes in the territory, being extended or using new potential renewable and waste heat sources according to the future developments of the area. From 2022, each French local authority owning a district heating grid will have the possibility to define priority areas where new buildings or the ones being renovated are to be connected to the district heating network. This will guarantee long-term visibility for the economic model of such infrastructure. However, it questions the connections of condominiums to these networks when each of their flats is heated with an individual heating appliance (like an electric heater or a gas boiler). Very few examples are available in both France and Belgium to show how this can done at low-cost.

Watch out! In both France and Belgium, documents exist to plan the development of territories (e.g., local plan of urbanism, energy masterplan), but they do not always reflect an encompassing vision. To make urban and energy planning fully complementary, the lack of staff resources should be tackled, to allow a better communication and synchronisation between the work of different departments of a municipality. This also implies the need of more capacity building, to raise awareness amongst employees of the existing interconnections between departments and to favour a new coordinated way of working. Policies and regulations should be strengthened to better synchronise the work between departments, which is currently not sufficiently developed nor facilitated.

Best practice from Liège: Adapting the network to deliver heating & cooling for various activities

When Liège did a first feasibility study for its district heating network in 2011, it was foreseen to mainly supply big public buildings and to only provide heating. In the end, it first supplied an eco-neighbourhood. In addition, the city foresees the development of cascade networks, with three different circles. A secondary network, linked to the main one but functioning at a lower temperature, would provide heating and cooling for the whole neighbourhood. People could connect to the network through a reversible heat pump, which allows different actors (houses, sport halls, etc...) to benefit from the network.

Low-carbon construction and building use

Cities start to require the use of bio-based or reusable materials to reduce the carbon footprint of the construction sector. In addition, renovation has a lower carbon footprint than demolishing and building a new one. This also goes hand in hand with better communication towards civil servants regarding the use of municipal equipment. In Bordeaux, a programme of “building ambassadors” has been developed: these ambassadors can monitor the buildings’ energy consumptions and accompany their colleagues to make them aware of sustainable acts which they can implement in their work and replicate at home. Cities like Liège and Annecy are very interested in replicating this process but, in the case of Liège, they have already experienced a lack of staff resources to coordinate a similar initiative.

Watch out! To be able to fully benefit from bio-based materials, cities highlighted the necessity for these materials to be certified and have trained craftspeople who are proficient in their use.

Best practice from Charleroi: Developing a reference guide for bio-based materials

Charleroi is developing a guide gathering the requirements for energy performance of materials and construction processes for companies who want to work with the city. Thus, the city can ensure that the companies it signs contracts with will carry out construction works which are low-carbon and only rely on certified materials.

ENGAGING CITIZENS AND STAKEHOLDERS

Co-creation is key to embark everyone in the process

Cities are keen on embracing co-creation through the involvement and education of citizens. There are two main types of involvement which are favoured: organising info-days or involving

citizens through drawing lots. In Annecy, the city will co-organise info-days on energy in collaboration with different associations. Annecy also involved its citizens in the design of its Climate Plan, drawing lots from the electoral lists. More than a third showed up because they received a personal letter from the mayor, and very few dropped out in the following workshops. This also allows to gather different profiles, including people with a strong knowledge of the ground, and to reach people who are not the usual suspects participating in every meeting.

Watch out! Asking stakeholders such as Distribution System Operators (DSOs) to be involved in the funding of projects accompanying citizen projects or renovation is complicated in Belgium. It would require a revision of the tariffication policies of the DSOs. In France, such involvement of DSOs is often limited to small actions, such as painting on electrical transformers.

Best practice from Lucinges: Creating a district heating network in a village

The village of Lucinges, in France, has decided to stop relying on natural gas and to develop a district heating network fuelled with biomass. The original approach from the village was to include a “citizen angle” when issuing the call for interest for the concession. A fifth of the evaluation made the eco-responsible approach, the social impact, and the citizen dimension decisive criteria to win the concession. The call was won by Forestener, an organisation in which citizens and local authorities account for 66% of the shareholders, giving an important voice to citizens during general assemblies and board meetings.

Energy communities

Each city is interested in energy communities but highlighted how complex it is for local authorities and civil servants to be involved. When many of them are involved in a community, the question of conflict of interest, if a subsidy is given to this community, can be raised. Pau tried to launch an energy community and financed some support by experts, but the support ended, leaving the community in difficulty to recruit and find a location for the solar panels.

Watch out! In Belgium, like in France, cities must still go through public calls for interest to allocate a place for energy communities to produce energy (e.g., roofs). In Liège, when the city won a prize 10 years ago, giving it the possibility to install 10kWc on schools’ roofs, the city had to decline the present because it would have been illegal.

Best practice from Pau: Reflecting on how to best use public space to produce energy

In Pau, to make the most out of public spaces, the city is exploring different possibilities to install solar panels, such as the shade houses near the rugby stadium. In the surroundings of the city, there is a former landfill, where the ground is polluted. Pau is planning to have a PV field and create a methanisation zone, using mud for methanisation.

In addition, the city is also exploring ideas for potential partnerships between local authorities and stakeholders from the tertiary sector to offer more spaces for solar panels.