

2. ENERGY PROJECT

Low-carbon technologies and resources

The Saint-Vincent-de-Paul project is one of the very first developments to implement the City of Paris's new "Climate Air Energy Plan", adopted in March 2018, one of the main challenges of which is the transition towards the post-carbon city. Reducing dependency on fossil fuels and drastically cutting greenhouse gas emissions requires a combination of lower energy use and local production of renewable energies. Saint-Vincent-de-Paul will use the most efficient solutions.

– The basics of the energy project

The definition of the "energy project" for the neighbourhood has been commissioned from the agencies Une autre ville, Amoès and Kairos. It is based on an analysis of local needs that identifies all the different kinds of consumption in the future neighbourhood - namely, lighting, heating, ventilation, domestic appliances and electric transport. It assumes that highly energy-efficient buildings (compliant with the German Passivhaus label for new buildings and **EnerPHit** for renovated buildings) will be created, which will have a minimal ecological footprint without sacrificing occupant comfort.

The studies have sought to identify the best combination of technologies and resources to meet the objectives of a low-carbon neighbourhood, while reconciling multiple constraints:

- **the local availability of resources and urban integration.** Some technologies, such as low-energy geothermal, aerothermal energy, biogas/biomass cogeneration, waste water heat recovery and urban wind power, have therefore been dismissed;
- **minimisation of unforeseen technological problems.** In areas of rapid change, it is important to assess the technical maturity of the solutions envisaged, their reversibility and any associated nuisances or health risks;

- **control of the overall cost.** The strategy takes account of both the investment and operational costs of energy systems and their impact on the price of homes and users' energy bills.

– The preferred scenario: centralised energy production

This scenario makes use of the proximity of the Paris network of "unprocessed water", which is not suitable for drinking, at the edge of the site. This network uses untreated water from the Seine for street cleaning or watering open spaces.

It also has a characteristic that has not been fully exploited: a relatively constant average temperature of 14°C all year round. The heat in the water can be recovered using heat pumps, to contribute to the production of hot water in Saint-Vincent-de-Paul, for sanitary use or heating.

The system will need to be supplemented with heat from the CPCU, the city's heating network, during winter peak periods. This centralised production scenario is based on Eau de Paris's detailed understanding of the energy potential of the raw water network, which can then be used to produce operating hypotheses and calculations.

P&Ma, Eau de Paris and the CPCU are working on an arrangement that will minimise operating costs and amortise the investment.

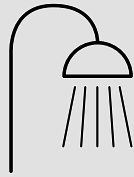
The scenario also includes the installation of roof-mounted photovoltaic panels, which will cover some electricity needs.

The issues of energy performance and controlling consumption are also prompting action on energy use by future inhabitants, led by a neighbourhood manager, which will build on the lessons learned from the CoRDEES project at the Clichy-Batignolles development.

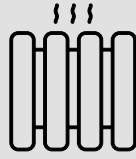
1. ESTIMATE NEEDS



Lighting



Hot water



Heating



Ventilation

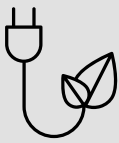


Domestic appliances



Electric transport

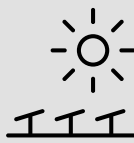
2. EXPLORE RESOURCES AND SOLUTIONS



Geothermal



Methanisation



Solar



Wind



Waste heat



Biomass



Hydraulic



Contributions
"INNOVATIVE
ENERGY
SOLUTIONS"

3. DEFINE SCENARIOS

Sourcing: Resources x production technique

x

Scale of production and distribution method

4. SELECT AND DESCRIBE AN OPERATIONAL SCENARIO

