

Domestic Housing : retrofit social and private homes with energy efficiency measures and renewable energy

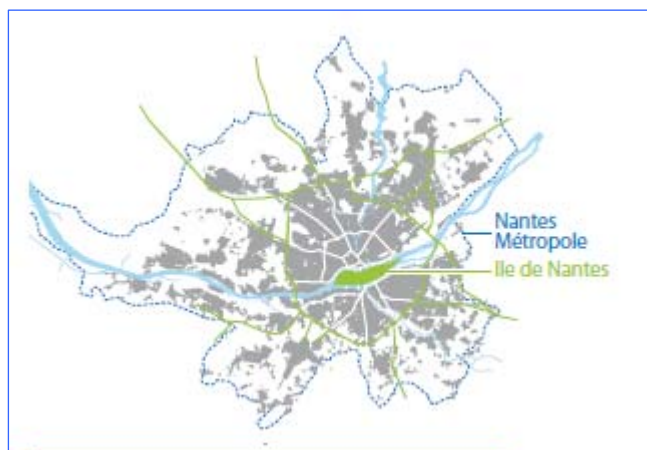
Nantes Métropole plans an ambitious program – the “2010 - 2016 Local Housing Plan” - to develop 5000 housings per year and to retrofit significantly the housing existing park. Housing and energy public policies are connecting to improve the energy quality of social and private housings. Since the first “Local Housing Plan” Nantes Métropole implements pilot programs to reduce the energy consumption and plans renewable energy “blueprint”.

Pilot program : Act 2 - Concerto project

Nantes Métropole is a laureate of Concerto project. Concerto is a European Commission initiative supervised by the Directorate-General for Energy within the European Research Framework Programme (FP6 and FP7). Since its launch in 2005, Concerto has co-funded 58 communities grouped in 22 projects (including act2 with Hannover and Nantes) to develop integrated energy strategies in pilot districts. The total amount of the EU funding for the Concerto initiative is 175 M€. Three main objectives have been targeted: energy efficiency in building and renovation projects use of renewable energy sources development of polygeneration (combined generation of heat, power and/or cooling)



In Nantes, the act2 project takes the shape of the Climate and Energy policy which is implemented by NANTES MÉTROPOLE, the local authority leading the project. It focuses on the integration of energy efficiency and the use of renewable energies in a specific area that best represents the challenges inherent to urban renewal, the Ile de Nantes.



The Ile de Nantes Renewal

340 ha -wide island, 5 km by 1 km
20 year-long project

+ 8,500 inhabitants from 2008 to 2013

Construction potential : 1,000,000 m²
- equipments : + 150,000 m²
- activities : + 300,000 m²
- housing: + 550,000 m² (7,000 dwellings)

To do this, SAMOA, the company developing this district of Nantes, outlined a set of heating and energy requirements. Going above and beyond regulatory provisions, SAMOA's requirements apply to constructions built by the various contracting authorities involved (real estate developers, private and public housing companies, equipment management bodies such as the CITY OF NANTES). 25 pilot buildings, i.e. over 80,000 m² of housing and office space, were built, each one harnessing a renewable source of energy.

The act2 project also involves the local authority investigating its whole area and taking up other challenges. This consists in drawing up a road map for renewable energies or accompanying a specific initiative to encourage refurbishments. Both illustrate the energy-related studies and engineering which have been supported. Improving the practice of construction professionals was also targeted. The introduction of the thermal regulation in France has resulted in changing construction and worksite approaches.

As such, project partners, especially the ADEME PAYS DE LA LOIRE Regional Directorate, went about organising training and feedback sessions by contacting all of the stakeholders involved (decision-makers, designers, builders and building managers and operators).

Key figures

New constructions

- 25 pilot buildings including housing (16), offices (7) and public equipments (2)
- 80,000 m²
- 13 contracting authorities involved

Renewable energy systems cofunded :

- District heating (85 % renewable: waste incineration + wood) substations:
1,930 kW
- Photovoltaic: 182 kWp
- Solar thermal: 250 m²
- Aerothermal heat pump: 100 kW
- Wood-fired boiler: 72 kW

Estimated annual savings after designing the project

- 3.8 GWh (primary energy)
- 790 tCO₂e



Beaulieu PV Power Plant 2009, Nantes Métropole,

183 kWp (1,325 m²).

Mean annual electric production since 2009: 205 MWh.

Visits organised along the year to raise awareness on energy issues.

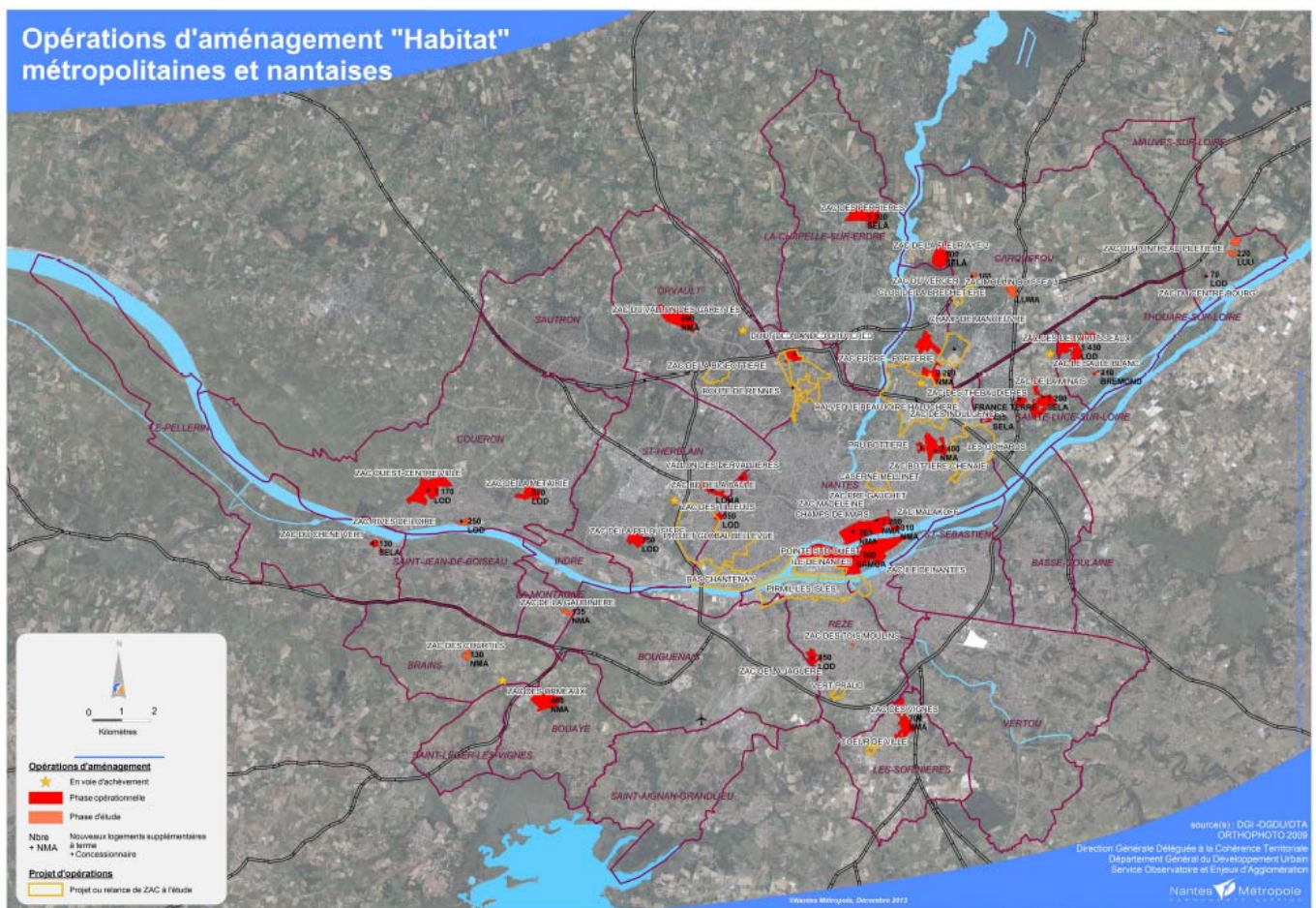
Renewable energy and Nantes Métropole housing operations


The renewable energy development is a real stake to reduce CO2 emissions and secure energy supply. In the context of a strong rise of energy prices, Nantes Métropole wants to introduce renewable energy in metropolitan urban development zones called "ZAC". Nantes Métropole implements a step by step process to have a 40% renewable energy production line in all urban development zones.


The first step, is to measure the feasibility to introduce 40% of renewable energy in three different urban development zones. Each pilot zone will present specific characteristic in term of management, urban composition.


The process excludes urban development zones connecting to urban heating networks. At the end of the process Nantes Métropole will study the feasibility to replicate this principle to economic development zones.

Residential sector: urban development zones



 Operational phase

 Pre –operational phase

 Study phase