

### SESAC project; the Grenoble Community

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1. **What are the main characteristics of your community? Are there any organizational or financial characteristics which are typical for your country, applied in your community?**

Main metropolis of the French Alps, Grenoble is located in the South-East of France, with 2000 hours of insulation per year, as French South's cities like Toulouse or Bordeaux. With its 27 municipalities around in an urban conurbation of 400 000 inhabitants, Grenoble is the first pole of public research after Paris.

International scientific and university centre, Grenoble is also well known as spearhead for urban ecology and social policies.

Located at the foot of the Vercors and Chartreuse Nature Parks and the massif of Belledonne, Grenoble is a compact city in a dense populated area, surrounded by nature. The Drac river and the Isère river constrain even a bit more a vital space which is not expansible.

Tackling the environmental issue is the challenge of the coming decades : promoting a less consuming town planning, reorganizing car accesses, irrigating the heart of the city with soft and clean transports, developing a clever architecture that is able to reduce energy consumption.

In Grenoble, the residential and tertiary sectors account for 65 % of the commune's total energy consumption (43% at the national level). More than any other city, Grenoble must tackle the energy issues and innovate to work toward an energy-efficient housing.

In view of its climatic and geographical characteristics, and thanks for its great capacity for social, technological, economic and environmental innovation, Grenoble is striving to be the city of innovation in the service of sustainable development.

We are taking part in the Local Climate Plan launched by the Metropolitan Authority in 2005, which adopted the factor 4 target for 2050. This plan was one of the first Local Climate Plan in France.

To go further, the Grenoble City Council has adopted in November 2007 the following targets concerning both RES and RUE :

- Reduction of 25 % of CO<sub>2</sub> emission (except transport) within 10 years, to reach the factor 4 in 2050
- Significant reduction of fossil energy sources in the district heating network (by developing wood biomass)
- Development of renewable electricity production thanks to Hydropower plants (a power between 38 and 68 MW will be reached till 2015) and photovoltaics plants (1200 kWp till 2012).
- Energy efficiency in New Buildings will be set up at the local level. A maximum energy consumption (primary energy) of 90 kWh/m<sup>2</sup>/y till 2010 and 60 kWh/m<sup>2</sup>/y till 2012.
- Concerning the stock of existing buildings, a reduction of 60 % of energy consumption in the building sector should be reach in 2050.

To reach this goal, the City has launched a thermal refurbishment of private dwellings in the whole City for the building built from 1945-1975. It concerns 40 % of the Grenoble private dwellings. The targets are 500 dwellings with thermal refurbishment per years from 2009 to 2012 and 1000 dwellings per years after 2012. Specific funds will be create to help energy saving actions in social housing refurbishment.

Concerning Building Policy, we have different tools to promote a more sustainable city. Local building regulation, guidelines, dissemination events toward all the stakeholders involved in the construction chain (from Property Developer to end user : inhabitants). In specific areas where the city is the Property Developer, we are promoting energy efficiency and the constructions are more efficient than the national thermal regulation. In the rest of the City, 100 % of the new constructions have external insulation, 75 % have a vegetal roof and 60 % have solar thermal panels.

**2. Which specific technologies are applied? Please also mention any typical technologies applied in your community which are also typically used or promoted in your country?**

Due to its specific history, Grenoble is at the leading edge of the Economic Innovation. In 1869, at the gates of Grenoble, the engineer and industrial A. Bergès inaugurated the first forced conduit of extreme height. Thus, he opened the area of the "white coal" : hydro-electric energy. The collaboration between the world of industry and the world of research and university is at the core of Grenoble economic history and somewhat it prefigures the French competitiveness clusters recently created (Minalogic in the field of micro- nano technologies or Tennerdis in the field of new and sustainable energies). Grenoble is known worldwide in the field of micro-nanologies, bio-technologies and energy technologies.

Grenoble has a special energy service landscape, with 2 local esco.

The first one is GEG (Gaz Electricité de Grenoble) which is an energy producer, distributor and seller of electricity and natural gas since 1903. With Around 400 employees, and a capital owned at 50 % by Grenoble municipality, and 50 % by private funds, GEG is a dynamic actor in local renewable energy (hydro/ Photovoltaics) and natural gaz cogeneration projects.

The second one is the district heating company called CCIAG, which is the 2<sup>nd</sup> heating network in France after Paris, with 142 km of grid in 7 on 26 communities of the metropolitan area and 86.000 equivalent dwellings. The 6 production plants are based on 40% of renewable energy (wood) or wastes incineration, the increase of biomass use is done step to step since 2007.

CCIAG capital is composed at 58% by public funds (Grenoble city 50%, Metropolitan 5%,SIC 3%), and 42% by private funds.

On the Metropolitan area the national ESCOs like EDF (Electricité de France) and GDF (Gaz de France) are also present.

**3. What are the most innovative aspects of the project in your community?**

The micro and mini CHP plant, developed by GEG are innovative in France. With 10 within 50 years, the Concerto project develop 9 micro CHP in Grenoble and 4 more are the direct results of Concerto dissemination.

Concerning the PV plants, innovative aspects are not on technical issues but on the administrative one. The transparent glass embodied PV on the stadium module are the first to have an Atex (national technical agreement) in France.

But the innovative aspects of such a Concerto project are on the non technological level. Firstly, the cooperation between a wide range of stakeholders (local authorities, escos, builders, housing companies,...) is quite new on this scale in France. Secondly, special dissemination and training is proposed to all the stakeholders involved in the construction chain (from Property Developer to end user : inhabitants). Among these actions, specific training to building businesses called Concert'Action, organized by Sesac Grenoble team will be now proposed at the regional level.

**Please outline any specific legal frameworks in your country, which facilitate the uptake of CONCERTO?**

When Concerto was launched, Grenoble SESAC demonstration projects were a long way ahead the standard regulation and are still much better than the standard regulation for new dwellings (RT 2005, adopted mid 2006). The national "Grenelle de l'environnement" discussions, held in 2007 were nourished by all the experimental projects and among them the Concerto projects. The Environment Grenelle's implementation program regulation should be voted in 2008, by taken into account these reflections.