

France: La Darnaise

BIODATA

PV community name:	La Darnaise
Kind of urban area:	Residential – urban
Main building type in community:	Houses - Multi-story apartment buildings
New/Retrofit/Added:	Retrofit – building integration
Type of project:	Demonstration project
Start of operation:	Year 2005
City, state, etc.:	Venissieux, Grand-Lyon
Country:	France
Latitude:	N45 41' 33"
Longitude:	E4 51' 53"

PV SYSTEM CHATACTERISTICS

Total PV power:	92 kW
Number of houses/buildings:	11 buildings
PV power per unit:	4,8 or 12 kW/building
Energy yield per year:	640 kWh/kW (calculated)
Main PV system type:	Grid-connected – supply side
Main PV application type:	Façade – mounted
Main PV module type:	Framed regular module
Main PV cell type:	Crystalline silicon - multi
PV module manufacturer/brand:	Tenesol/TE1300
Inverter manufacturer/brand:	Tenesol, Gridfit
Investment for PV systems:	580 000 EUR in total

OWNERSHIP

Building owner:	Public social housing organisation
PV owner:	Public social housing organisation
PV energy user:	Utility



COPYRIGHT: Grand-Lyon Local Energy Agency

PV COMMUNITY DESCRIPTION

PV Community Brief

Vénissieux is a municipality of the Grand-Lyon conurbation, the second largest in France, with large social housing and industrial mix. The name of this city is unfortunately still associated with social and urban riots that occurred in this area since the 1960's. Today, the Vénissieux area is one of the Grand-Lyon's priorities in terms of large-scale urban regeneration and improvement of the quality of life for inhabitants. La Darnaise district is the concrete illustration of the possibility to transform an old social housing area into an energy efficient and renewable energy powered district.

Grid issue

Although all PV modules are owned by the same owner, the local social housing organisation, this project is composed of 11 independent PV systems, one for each building, that have their own connection point to the grid and their own contract with the utility for the connection to the grid. As it is for all PV systems in France, the utility created an additional connection point to the grid dedicated to the PV system of each building in order to benefit from the feed-in tariff for the totality of the energy produced. The new connection point to the grid for the PV system is installed close to other existing connection points for building inhabitants.

Urban planning and architectural issues

High-rise buildings generally offer limited roof area suited for photovoltaics, especially when the flat roof is also used for solar thermal, which is the case of this project. The architect of this project, Bernard Paris, and the building owner, decided not to install PV on the roofs, but to integrate PV on the southern façade of each building. This technical choice led to use PV also for its visibility, as solar thermal, building insulation or wood based district heating are not visible, although the annual yield of PV is lower than a roof based solution. In this large scale urban regeneration, as it was not possible to adapt the urban plan to optimize the use of PV, the PV system was sized and positioned on each building to limit mutual shading.

Economic / financial issues

The total cost of the PV system is 580 000 EUR (696 000 USD), of which only one third was paid by the building owner as the French National Agency for Environment and Energy Savings (ADEME) and the Rhône-Alpes Regional Council co-funded this project. Although this PV system benefits from the national feed-in tariff for the electricity produced by PV, the PV system owner will never have a financial payback for this project. The reason is that the PV system owner chooses to use the annual revenue generated by the electricity not to reimburse a loan or its investment, but to reduce service charges of buildings, in order to increase its social role and reduce the poverty of inhabitants.

Other remarks

PV is just a small part of this large-scale regeneration project that aims to improve the quality of life of inhabitants and reduce service charges by the improvement of energy efficiency and the use of renewable energy systems. Buildings are equipped with high-efficiency insulation and windows, district heating is powered by a 12 MW wood chip fired power plant and 730 m² of solar thermal panels produce part of the domestic hot water needs. This makes La Darnaise one of the first renewable powered districts in France whose flagship is the PV system installed on the building façades.

COMMUNITY INFORMATION

Project leader company: OPAC du Grand-Lyon, www.opac-grandlyon.com (building owner)

Other project company: Tenesol, www.tenesol.com (PV system supplier)

Project's www: -

Contact address: Hespul, France
info@hespul.org
www.hespul.org