



MountEE: Energy efficient and sustainable building
in European municipalities in mountain regions
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D 3.3: DESCRIPTION OF REGIONAL STRATEGIES

Partner : Natural regional park of Pyrenees Catalanes

Regional strategy submitted by: PNRPC

1) Context description

National scale

The building sector is one of the main producers of greenhouse gases, and French government strategy aims to reduce its environmental impact: thermal regulations have been implemented since few years in order to progressively develop energy-efficient buildings: RT2005, RT2012, RT 2020, are the major steps of this policy. Depending on significant environmental laws (Grenelle 1, and Grenelle 2), they consist on a set of different requirements for constructions and renovations programs. RT2012 for example, which gives today a framework for new construction projects, requires a global and maximal consumption of 50kWh of primary energy per m² net floor area. The previous objective (RT2005) was about 150 kWh/m²/net floor area. In 2020, buildings should be passive.

Regional scale

The territory of the natural regional park covers more than 138 000 acres, for only 23 000 inhabitants, in 64 little municipalities, at Spain and Andorra's borders, but also at 60 kilometers of the Mediterranean Sea. Local stakes are linked to this situation: high climate contrasts, strong needs for energy performance in local buildings, a public sector weakly equipped to face energetic transition issues, and strong needs for promoting local activities (in order to help wood industry and building sector to develop their competences).

This territory also has strengths, mainly in renewable energies (first world solar furnace located in Mont-Louis, the world biggest in Odeillo, research activities, European labs, etc.); and one of the regional strategy stakes is to deal with this opportunities for building construction and renovation sector.

2) Main objectives

Main objectives for building constructions or renovations result from two main principles:

- Carbon dioxide reduction by factor 4, set by national laws, by a national plan against climate change, and by regional climate plan (regional emissions in 2006 reached 17200 T_{eq} CO₂ in Languedoc Roussillon, and 12600 were from energetic uses. Among them, building sector represented 30% of the total emissions, which is greatly higher than national average of 22%). The reduction of emissions are consequently important. For the PNRPC, building sector represent about 60 % of energy consumption. For France, the energy consumption of building sector represents about 40 %!

- Adaptation to climate change.

The following standard levels are part of the strategy, and can be considered as the specific objectives for buildings within Pyrenees Catalanes.

Target levels

	Standard	Pilot MountEE	Best
I. New Production			
a) Energy efficiency	Thermal Regulation 2012 (Area H3 for Pyrenees Catalanes)	(Area H3 for Pyrenees Catalanes)	(Area H3 for Pyrenees Catalanes)
	Residential : 40 kwhep/m ² /an in average + variation according to the altitude and SHON RT	RT 2012 : 40 kwh/m ² /an in average + 30 % of improvement + renewable energies	Positive Energy Building (BEPos)
	Public buildings : 48 kwhep/m ² /an in average + variation according to the altitude and SHON RT	RT 2012 : 48 kwh/m ² /an in average + 30 % of improvement + renewable energies	Zero Energy Building (BEPas) + Valorisation of waste, water, heat, etc.
b) Building materials			
	decree n°2010-273 (5 to 35 dm ³ of wood/m ² SHON RT depending on building affectation)	decree n°2010-273 + PEFC or FSC + environmental or natural materials	decree n°2010-273 + PEFC ou FSC + environmental or natural materials
c) Renewable Energy	0	30%	60%
II. Renovation			
a) Renovation of entire building:	1000 m ² et built post 1948	Low Consumption Building (BBC renovation = 64 kWh/m ² /an) + variation according to the altitude	Zero Energy Building + environmental or natural materials
b) Renovation of parts of the building:	Thermal regulation by element	Thermal regulation by element + 30 % of improvement	Zero Energy Building + environmental or natural materials
c) Test of special methods		Thermal study before and after renovation + Test airtightness	Metering and recording of results for 3 years

With these target levels, a major objective for Pyrenees Catalanes is also to develop the local economic sector. The development of efficient and sustainable building, we can hope a reduction of the construction costs in the future.

3) Means to reach the objectives

3.1 - Integration in Local politics/ climate plan/Sustainable Energy action plan

Local policies and programs

- > Languedoc Roussillon Region has set up a regional policy on sustainable and innovative construction (Bât'Innov charter). This policy on construction is integrated on their climate plan. In this case, they propose training program, financial support to the building sector (funding for construction, development of activities areas, support to innovating industries, etc.), to promote skills. Most of regional stakeholders are involved in this policy.

- > County council of Pyrenees Orientales manage a departemental network on sustainable construction (main actors are involved in this). In this case, they develop actions to support professionals, public and private stakeholders. County council manages also the local agency on energy who gives advices to public and private projects each month on our territory. They are elaborating a climate plan.

- > Development policy ("Charte de territoire")of the Natural regional park for 12 years (2014- 2026): this plan gives main orientations for the territory on different topics (environmental issues, urban planning, culture, energy, renewable energies, natural resources, accompaniment of municipalities on different fields, etc.). This document is elaborated with local, regional and national stakeholders. It integrates actions for climate change.

3.2 - Means within MountEE

Within MountEE project, a service package will be implemented in the territory to assist mountain municipalities to build and renovate buildings with sustainable and efficient solutions and renewable energy use.

This service package involves:

- > The global animation for supporting 4 pilot projects and coordinating stakeholders.

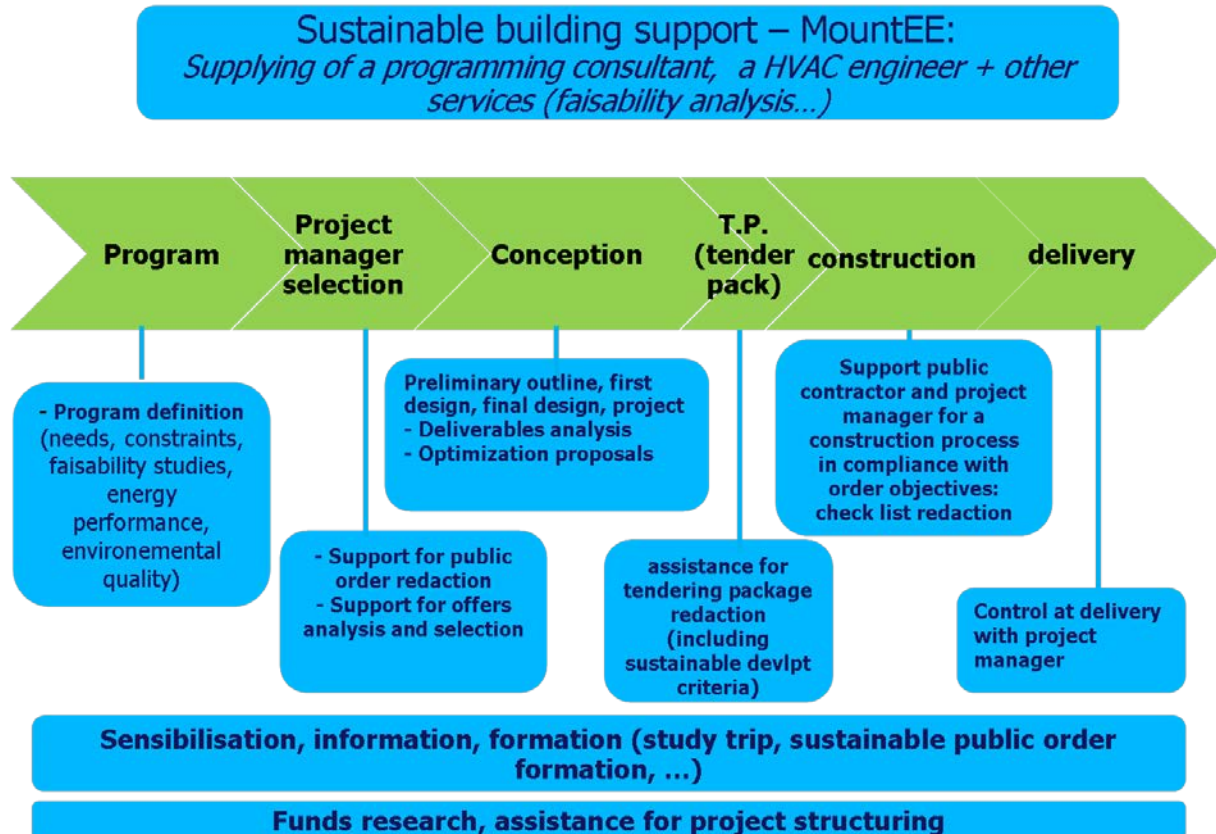
- > A pre-conception support (programation step), with identification and realization of feasibility studies (The local state services will provide a context analysis (urban local rules, risk study, etc.) at the very beginning of this step for the 4 pilot projects. CAUE will have the same approach on architectural, environmental and landscape stakes).

- > The program co-redaction with contracting authority – conciliation of client needs and attempts with the project energy performance and environmental quality criterias.

- > A support of contracting authority in the public order writing process for recruiting a project manager in order to include sustainable development criteria.

- > Assistance in each step of conception until acceptance of work and building put into service (Analyse of all project manager deliverables for preliminary outline, first design, final design, project optimization proposals, and assistance for redaction in tender documents).

Service package synthesis:



4 pilot projects have been selected at the moment :

- **Ia Cabanasse :**
 - A school canteen (440 m²/new construction).
Obj : high performance building, passive or positive building
 - A day nursery (100m²/renovation).
Obj : passive building, biosourced material
- **Mantet**
 - A municipal house within an old barn (100-150m²/renovation).
Obj : preservation of architectural forms, sustainable building, local materials.
- **Porta**
 - A municipal house within 3 ancient houses (450m²/renovation).
Obj : preservation of architectural forms, sustainable building, local materials

4) Medium and long term vision of the strategy

With this regional strategy, medium and long term objectives are well identified:

- set up a local and permanent dynamic with all partners on energy efficient buildings development
- helping professionals to develop sustainable construction skills, lowering construction costs, and making the standard practices evolve.
- maintaining and developing the service implemented within the MOUNTEE project in the territory
- ensure that municipalities and elected people will appropriate the stakes of sustainable construction and renovation,
- develop the public building strategy to other sectors and kind of buildings

5) Partnership and key actors

- > Services of the government in charge of urban planning and ADEME (national agency on energy)
- > Languedoc Roussillon Region
- > County council of Pyrenees Orientales
- > CAUE, is a local organization specialized on urban planning, architecture, and environment: they give advices and support for project holders.
- > Bois Energie 66, which is a departmental association on wood energy: suggests technical support for public and private projects on this sector.
- > The departmental organization on electricity and energy (SYDEEL) supports municipalities for energy management (building, public lighting, white certificates, etc.).
- > Professional organizations of craftsmens, building companies
- > Heritage Foundation: supports financially public and private projects of renovation
- > Pilot municipalities and local authorities