



mountEE: Energy efficient and sustainable building
in European municipalities in mountain regions
IEE/11/007/SI2.615937

D 3.3 : DESCRIPTION OF REGIONAL STRATEGIES

Region / local area considered: FRIULI VENEZIA GIULIA REGION

Regional strategy submitted by RCC AND ARES

1) Description of the context

The biggest barrier right now in Friuli Venezia Giulia is the general economic crisis that is stopping all construction and renovation. In addition, the mountainous part of the region consists primarily of small towns that have little budget and even a few technical knowledge. Small municipalities have little technical knowledge to integrate energy efficiency and sustainability criteria in public procurement.

Energy certification of buildings is seen more as a bureaucratic exercise than as the evaluation of the performance of buildings.

The sustainable construction industry is not well developed in the region and most of the certified materials or more efficient one comes from outside the region.

Professionals and craftsmen lack of technical knowledge related to energy efficiency and build as they have always done in the past.

There isn't any kind of advisory service for municipalities for promoting energy efficiency.

In Friuli Venezia Giulia we have one relevant element of strenghtness: the region introduced a framework for the assessment of buildings based on the international standard "SB Tool", and it may be considered the first step towards a strategy for sustainability in construction. It analyzes both energetic and environmental aspect of buildings.

Another very interesting possibility is given by climatic position to take advantage of renewable energy, particularly solar energy and hydropower.

In Friuli Venezia Giulia have joined the Covenant of Mayors:

- Municipality of Udine
- Municipality of Tavagnacco
- Municipality of Duino Aurisina
- Association of Municipality "Conca Tolmezzina" (Tolmezzo, Amaro, Cavazzo Carnico, Verzegnis)

In Friuli Venezia Giulia have joined the Alliance in the Alps:

- Andreis
- Aviano
- Budoia
- Caneva
- Cimolais
- Comeglians
- Comunità montana del Friuli occidentale
- Erto e Casso
- Forni di sotto
- Montereale Valcellina
- Pinzano al Tagliamento
- Polcenigo

2) Description of the objectives

The global political objectives of the strategy to promote sustainable buildings and renewable energy use are:

- Climate objectives : reduce CO₂ emissions, promote both energy efficiency and environmental sustainability
- Economic objectives : promotion of local economy also by short chain on the timber used for constructions and by used of certificated materials
- Local activity promotion

- Promote renovations rather than new construction, in consideration of the considerable number of existing buildings of historical / architectural value

3) Means to reach the objectives

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

- set up the regional energetic plan or the regional sustainable energy action plan
- promotion at the municipalities to join the Covenant of Mayors
- promote sustainability through the application of the Protocol ITACA/VEA
- creation and promotion of a short chain of timber building and of timber as construction material (trace the source)
- promote the use of timber from certified forests (PEFC and FSC)
- create a market for sustainable construction in order to speed the transition to sustainable technologies in the construction industry
- promote the use of certified materials and not only CE but also with Environmental Product Declaration (ecolabel blue angel, ...)
- facilitate the certification of the construction material or through the creation of a regional laboratory or through agreements with laboratories in other neighboring regions
- reduction of CO2 through voluntary carbon market (as Carbomark project)

3.2 - Means within MountEE

Assist mountain municipalities to build and renovate buildings with sustainable and efficient solutions and renewable energy use

Advise and assistance services for municipalities and social housing agency

Module 00	Green energy audit on existing buildings: energy and environmental audit protocol based on Protocollo ITACA
Module 0	Presentation of modules and results with the communal authorities
Module 1	Preliminary planning: definition of ecological aims in a program, supervision in competition
Module 2	Optimization of planning, tendering procedure: monitoring of offers
Module 3	Realization: Information for craftsmen, Product declaration, Product control,
Module 4	Control of success: Building site control, Measurements
Module 5	Service and maintenance: Monitoring on energy consumption , Support for maintenance plan and user manual of the building

Adapted funding policies

Improve existing funding and subsidies to sustainable buildings and social housing buildings
Create new kind of financial instruments for public sector based on stock exchange of white certificates, or on third part society/ESCO

Training

Provide opportunities for training and improvement of knowledge of key actors of the building chain (builders, investors, architects, craftsmen and consultants).

Regional Cooperation committee

Regional Cooperation committee (RCC) involves all key actors of the building chain (builders, investors, architects, craftsmen and consultants) in order to:

- exchange and sharing an overview of sustainable construction in our country;
- development of a strategy for sustainable building: sharing of objectives and actions of coordination with existing strategies (national and regional);
- evaluation and development of financial mechanisms for funding;
- selection of pilot projects;
- monitoring and implementation of support for local authorities;
- increased knowledge of stakeholders (politicians, technicians, professionals);
- exchange of knowledge and experience;
- training opportunities for all parties involved in the construction industry.

The members of the regional committee of coordination share the following concepts:

- it is necessary to work together to help our region, Friuli Venezia Giulia, to carry forward the concepts of sustainable building and energy saving;
- each member of the group wants to improve their knowledge in relation to these issues by taking part of the project activities mountEE;
- the members of the group want to help to create a market for sustainable construction in order to speed the transition to sustainable technologies in the construction industry
- the members of the group want to develop actions involving all the parties involved in the construction industry.

Pilot projects

Municipalities and social housing organisations will start to implement energy efficient and ecological building and renovation projects by six pilot projects

3.3 – Time schedule and milestones

Short description of the steps and schedule of the work.

4) Medium and long term vision of the strategy (1/4 page)

In the next years and after MountEE project, what would be expected : generalization of sustainable public buildings ? Extension of the strategy to social housing or to private buildings ...

5) Partnership, key actors

- Region Friuli Venezia Giulia
- Comunità montana della Carnia, mountain community
- Comunità montana del Friuli Occidentale, mountain community
- Comunità montana Torre, Natisone e Collio, mountain community
- 108 mountain municipalities

- Regional Agency Promotur, public economic entity responsible for competition policy in the context of regional planning, promotion and management of the development of tourism and sports of skiing in the region.
- ATER Alto Friuli, social housing organisations
- ATER Provincia di Gorizia, social housing organisations
- ATER Provincia di Pordenone, social housing organisations
- ATER Provincia di Trieste, social housing organisations
- ATER - Azienda territoriale di Udine, social housing organisations
- AGEMONT, Agency for Economic Development of the mountain
- APE, Energy Agency
- Parco delle Dolomiti Friulane, Park of the Friulian Dolomites
- Parco delle Prealpi Giulie, Park the Julian Alps
- University of Trieste
- University of udine
- Agenzia del Demanio, State Property Agency
- Esercito italiano, Italian Army
- Ordine degli Architetti, Federation of Architects
- Ordine degli Ingegneri, Federation of Engineers
- Collegio dei Periti, Federation of industrial technicians
- Collegio dei Geometri, Federation of geometers
- Comitato tecnico scientifico di ARES, Technical and Scientific Committee of ARES
- Banca etica, Ethical Bank
- Cassa di Risparmio del Friuli Venezia Giulia
- Unicredit



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D 3.3 : DESCRIPTION OF REGIONAL STRATEGIES

Region / local area considered: Dalarna, Sweden

Regional strategy submitted by: Åke Persson, Jakob Ebner

1) Description of the context (1/2 page)

Close-to-zero energy strategy for Dalarna

The Byggdialog network together with the County Administrative Board's steering group for Energy Intelligent Dalarna and with other relevant stakeholders in the areas of construction and property management have written this strategy proposal to promote an increase in the number of low-energy buildings in Dalarna. The targets and other pre-conditions of the strategy are that low-energy building in Dalarna should fulfill the national targets for close-to-zero energy buildings proposed by the Swedish Energy Agency.

The strategy document as presented is intended to give support and guidelines for property owners in Dalarna in planning and construction projects throughout the county. It is proposed that the document be adapted and updated as required to keep up with national developments. The Swedish government has stated that 2015 will be a key year for additional demands in legislation and building standards.

The purpose of establishing a regional strategy for low-energy building is for Dalarna as a pilot county to move together in, as a minimum, fulfilling energy and sustainability targets set by the government. Experience from previous projects in low-energy building will be built on and form models for broader application, both in new construction and in refurbishment projects.

2) Description of the objectives (1/4 page)

The strategy provides a basis for:

- Guidelines for energy-efficient planning in municipalities.
- Targets for design and construction in different categories of buildings: dwellings, commercial and single-family homes.
- Action plan for energy-efficient management of buildings.
- Emphasis on the need for skills development in the sector.
- Areas of relevance for regional research.
- Opportunities for technology development

Target levels

The Swedish Energy Agency presents in Task 13 the levels proposed for Close-to-zero energy building from 2019 (public buildings) and 2021 (other buildings) and it is proposed that these should also apply to Dalarna:

Specific energy consumption of building, new buildings

[kWh/m², Atemp, yr], excluding operational power,

Dwellings, non-electric heating	65
Dwellings with electric heating	40
Premises, non-electric heating	60
Premises, with electric heating	40

Specific energy consumption of building, converted buildings

[kWh/m², Atemp, yr], excluding operational power,

Dwellings, non-electric heating	90
Dwellings with electric heating	40

Premises, non-electric heating	85
Premises, with electric heating	55

Table 4: Proposal for the specific energy consumption of Task 13, Zone 2 converted buildings.

The proposals adopted in this strategy are based on close-to-zero energy buildings but also on what is considered possible and reasonable with currently available technology. Consideration is also given to the slightly higher costs in the construction phase that more energy efficient building incurs.

Energy measures should be prioritized in the following order:

- Highly energy-efficient building shell
- Highly energy-efficient installations
- A high proportion of the energy needed should be renewable

By using this order of priority, three goals can be achieved: It ensures that the energy requirements of the buildings will be kept low. This in turn leads to the building's energy consumption being less affected by the choice of energy medium. This reduces the energy supply's importance for the building and thereby gives a greater degree of flexibility in the choice of technology employed. This also increases the flexibility and generality of future changes in the functions of a building and in energy system conversions. Finally, this order of priority results in an increase in the proportion of renewable energy.

Redevelopment

Gradually raising the standard of existing buildings is essential for a transition to a sustainable energy system. It is therefore proposed that target levels also be introduced for the renovation and rebuilding of existing property.

For existing buildings undergoing major reconstruction, a target can be formulated as energy consumption after renovation shall not exceed 90 kWh/sqm. A pragmatic target may otherwise be that energy consumption after rebuilding should be 50% of the level before rebuild. This is known as applying "Factor 2".

Property management

For property already being managed, there should also be a goal of reducing energy consumption by 2020, i.e. a reduction of 20 percent calculated from the current level (around 1.5-2% annually). This is already being done in some places in the country. For example, the "Skåne initiative" entails a reduction of 2 percent per year until 2016.

Experience shows that the systematic optimization of existing installations in premises can reduce energy consumption by 20-30% and by 10-20% in dwellings.

An action plan for this area should be developed that may include:

- Information about the goals and plans
- Training of property owners and property managers
- Incentives to inventory the energy status of buildings.
- Supporting / encouraging energy efficiency.
- Possibly an order to remedy proposals in energy assessments, particularly for properties with extremely high energy consumption.
- Tools for reporting and monitoring energy use in buildings.
- Good examples. Local authorities should lead by example in training their staff and fixing their own properties.

3) Means to reach the objectives (1 to 2 pages)

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

The targets and other pre-conditions of this strategy are that low-energy building in Dalarna should fulfil the national targets for close-to-zero energy buildings as proposed by the Swedish Energy Agency. These will very probably be in line with the Government's future action plan.

- With this strategy Dalarna is ahead of national demands and focusing on the ambitions expressed by the Swedish government's plan of action for "A route towards close-to-zero energy buildings" that states that Sweden's implementation of the concept of close-to-zero energy buildings from the year 2021 should be the legally binding level for energy-lean consumption requirements in Sweden. These requirements, if enforced by law, would be stricter than those in current building regulations (BBR 19) applicable as of 2012. With this strategy the county of Dalarna is taking part in the discussion on proposed energy levels in the future and pushing the national level to higher ambitions.
- The strategy has been elaborated by the county's stakeholders in the building sector including municipalities, housing companies and construction companies. It gives signals to the construction sector which products and instruments that have to be elaborated and what energy standard should be considered "normal" in the future.
- The strategy is thought to be a guideline for municipalities and companies when elaborating internal documents, policies and working plans since it gives an indication on what levels are adapted by organisations and companies in the neighbourhood.
- The implementation of the strategy is done by the stakeholders of the Building Dialogue Dalarna who also elaborated the strategy. The mountEE project is supporting this process with workshops, seminars and best practice examples.

The following steps are needed to reach the objectives:

Development and use of tools and methods:

BELOK-methods: A toolbox of methods developed by the Swedish Energy Agency

-BELOK- totalmethod: Used in refurbishment of buildings.

-BELOK-LCC

-BELOK – effektiv operating systems

BeBo-experiences from national Housing company network on energy efficiency

SWEBY: Model on energy calculations and energy measurements

Västerås-model: System for municipalities to sell housing lots with energy requirements.

Development of energy declarations:

Suggested improvements to make energy declarations more accurate and building specific.

Developing an action plan for property management

- Information about the goals and plans
- Training of property owners and property managers
- Incentives to inventory the energy status of buildings.
- Supporting / encouraging energy efficiency.

- Possibly an order to remedy proposals in energy assessments, particularly for properties with extremely high energy consumption.
- Tools for reporting and monitoring energy use in buildings.
- Good examples. Local authorities should lead by example in training their staff and fixing their own properties.

Developing an action plan for the existing building stock

1. Inventory of the energy status of the properties. Energy Assessments can be used for this, where available. The entire building stock must be included to get an overview of the current situation.
2. Targets are set for the properties, both overall targets for the entire stock and specific for each property. Each property is given a designated energy manager.
3. Based on the inventory, a selection is made of properties that should be addressed in the first instance. An evaluation is drawn up showing if there are properties in the portfolio for which the measures selected can be coordinated
4. An energy plan for the property portfolio is drawn up. This specifies the properties to be addressed, with schedules for action. The energy plan must also contain check-points to ensure that the systematic tuning of the installation systems is carried out with continuous monitoring of ventilation, heating and cooling systems.
5. The energy performance of buildings must be monitored and measured each year to ensure the achievement of the set targets and monitor changes for all properties. In this connection it may be appropriate to hold joint workshops for operating staff to showcase best practices and increase levels of commitment.

For an individual property owner, one option is to make a forecast for energy use in 2020, divided into new buildings, refurbished buildings and those that are only being managed. Based on the forecast, owners can judge how much should be spent on the various parts of the property portfolio in the years leading up to 2020.

Roadmap for energy in construction and refurbishment

- In the proposal stage, the requirements applying to energy usage are to be specified, these are then monitored during all project phases.
- Customers and project managers control the project so that the targets are met by ensuring that the targets and guidelines of various subsystems are followed.
- Well-designed system solutions based on LCC analysis should be applied and reported in the proposal documents and tenders.
- Energy calculations should be carried out when selecting the system and at the appropriate project phases. The calculations should be adjusted during project design as a consequence of quality inspections and changes made.
- Verification of the building's performance is to be carried out using measurements when the building is completed. Normally 3-5 years are required to fine tune new systems.
- Handover to the management and operating organization should be done systematically during the warranty period, which is 2-5 years.
- Monitoring and feedback between property managers and the construction project organization should be done on a regular basis.

Training and competence development

In accordance with Section 8.3, Competences, in the Swedish National Energy Agency's Task 13, training in close-to-zero energy construction should start in upper secondary schools and universities. For those already working, training should be aligned to groups of stakeholders as below:

- Architects, design engineers, HVAC designers, consultant electricians, site foremen, construction project managers.
- Planning administrators, climate and energy advisers.
- Construction workers and assembly workers.
- Operating and maintenance staff.
- Customers, Project Managers.
- Politicians / end users.

Cost reduction by larger amounts

Gather material on costs and benefits, LCC calculations, information.

Mainstream NZEB will lower costs

3.2 - Means within MountEE

Assist mountain municipalities to build and renovate buildings with sustainable and efficient solutions and renewable energy use

a. Advise and assistance services

The MountEE project is going to offer a series of courses, workshops and training sessions on the most important tools proposed in the strategy, including: LCC, SWEBY, Västerås modellen, BELOK-totalsystem. Different tools available in the regions will be promoted to accomplish a service package close to the system used in Vorarlberg

Step 1 Preliminary planning

- First contact with the municipality by the Building Dialogue
- Develop and implement local Energy- and climate strategies
- Implement the regional NZEB
- Dialog with municipalities about exploring and renovation of residential areas.
- Formulation of an « eco-program ».
- Decision on which system to use for choice of material (Basta, Sunda Hus, Miljöbygge etc.)
- Develop local wood construction strategies and stimulate the use of wood constructions.
- Introduction of Sveby modell. Implementation of module 1: Energy standards and specifications
- Implement regional and local Energy- and climate strategies

Step 2 Optimization, tendering

- Development of a material-, construction and energy concept using LCC-calculations
- Energy calculations using Sveby modul 2-4
- Environmental check of all call for tender documents using Sveby module 3

Step 3 Realization

- Craftsmen Information by workshops on in the pilot projects
- Approval of product declaration list

Step 4 Control of success

- Controlling the products at the building site with help of Sveby module 3

- Diverse measurements: blower door test, indoor air quality
- Control of tendering criteria in accordance to recommendation of Miljöstyrningsrådet (MSR).

Step 5 Management and maintenance

- Implementation of Sweby modell.
- Workshops for exchange of experiences

b. Adapted funding policies (describe shortly)

Since no funding subsidies exist in our county, the MountEE project is helping municipalities to apply systems that make it easier for politicians and housing responsible to grasp the economic impact of energy saving measures. The project will use and improve the following models: LCC, BELOK, Västerås - modellen. Expert meetings on EPC will be held.

c. Cooperation committees to involve all actors of the building chain (describe shortly)

In continuing efforts to promote the number of low-energy buildings in Dalarna, the strategy proposes the Byggdialog Dalarna to function as the hub. The Byggdialog Dalarna is also the MountEE cooperation committee

The RCC will work for targets and sub-targets to be adopted and followed up, that targets are communicated to local authorities and other stakeholders in the construction and property sector, that tools to monitor work on improving energy efficiency are developed and that the strategy is reviewed annually and revised.

d. Pilot projects

5 pilot projects have been selected where the following methods and tools suggested in the strategy will be used and tested:

LCC, BELOK, SWEBY

3.3 – Time schedule and milestones

The NZEB-strategy Dalarna is in a review process.

The strategy will be adopted in may 2012 by the Building Dialogue and will after that be used as a policy document in all activities arranged by MountEE-project and Building Dialogue.

The core content of the strategy will be presented in all activities arranged by MountEE and Building Dialogue

Time schedule:

Adopted spring 2013.

Communication of targets and tools: Autumn 2013

Test and development of tools: 2013-2015

Training and competence activities: start June 2013

Follow up and adjustment: spring 2015

4) Medium and long term vision of the strategy (1/4 page)

In the next years and after MountEE project, what would be expected: generalization of sustainable public buildings ? Extension of the strategy to social housing or to private buildings ...

The Swedish Government will elaborate a national strategy for new NZEB buildings in 2015. The national targets will probably have great similarity to our strategy. So the existing strategy for Dalarna will hold over time but will need to be revised annually. The strategy includes private, social and public buildings and can be used by the whole building sector.

The big work and challenge is to establish action plans and a good follow up work that can be communicated.

5) Partnership, key actors

The Building Dialogue Dalarna (MountEE RCC), a partnership of the whole building chain, authorities and municipalities that developed during the recent 7 years has taken initiative to this strategy and will be responsible for implementation and follow up together with the County Administrative Board.

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Work Package 3: Regional Strategy

D 3.3 DESCRIPTION OF REGIONAL STRATEGY - SUMMARY

**REGION / LOCAL AREA CONSIDERED:
COUNTY OF VÄSTERBOTTEN AND NORRBOTTEN**

**REGIONAL STRATEGY SUBMITTED BY:
NENET, NORRBOTTEN`S ENERGY AGENCY**

Nenet Norrbotten´s Energy Agency
Silva Herrmann, Wolfgang Mehl
May 2013

1) Description of the context¹

According to the EPBD, all new buildings and existing buildings undergoing major renovation have to meet 'very high energy performance' standards. Member States are not obliged to set minimum requirements for energy performance of buildings which are not economic.

On 1 January 2012 the energy requirements in the building code for new buildings became tougher in Sweden. The change means increased requirements by about 20 % on the specific energy consumption (kWh per m² per year) and average thermal insulation (W/m²K) compared to the former building code.

In the Action Plan "Nearly zero-energy buildings (2012)," the Government concludes that an implementation of the concept of near-zero energy building demands stricter Swedish building code requirements on energy compared to now. But it also says that today there is insufficient evidence to indicate a quantified approach on how far-reaching tightening might be necessary. In January 2013, the National Board of Housing, Building and Planning delivered a report "Optimal costs for energy efficiency – Basic data for the implementation of the European Parliament and Council Directive 2010/31/EU on energy performance of buildings." In summary, it says, that the new building regulations meets in almost all cases the requirements of the Directive on the basis of what is technically and economically justified by Sweden's national conditions today. In terms of renewable energy supply for buildings, the Board refers to the high share of RES in the Swedish energy mix complemented with regulations promoting the use of RES in the building code. But the Board agrees that rules should be tightened when the conditions change and the changes are justified.

However, the Action Plan states that the Government needs to check conditions and status-quo again in 2015. Until then, several promoting activities will be implemented to increase knowledge and experience across Sweden and to reduce costs for a final implementation of the directive. This includes pilot and demonstration project in all parts of the country, incl. follow-up measurements and documentation. For Northern Sweden, the maximum energy demands is set to 106 kWh/m². The government will provide 120 million SEK per year 2014-2016 for pilot and demonstration projects.

1.1 Counties of Norrbotten and Västerbotten: work on energy and climate strategies

Since 2008 all county administrative boards in Sweden have been commissioned by the government to cooperate with other regional and local actors in order to produce regional strategies for climate and energy policies. The administrative boards have a key function in implementing the government policies on climate and energy in Sweden. In 2010 this role was further emphasized by the government when targeted

¹ See also: Swedish Energy Agency: Energy Efficiency Policies and Measures in Sweden, ODYSSEE-MURE 2010, Monitoring of EU and national energy efficiency targets, 2012

funding for this activity was introduced as a part of a five-year programme for energy-efficiency.

In Norrbotten County, work with a regional energy and climate strategy started already 2006 and resulted in the Energy Strategy for the County of Norrbotten and the Climate and Energy Strategy for the County of Norrbotten, followed-up by an Action Plan in 2009. The first action period has ended and a new Action plan has been for the period 2013-2015. The three priorities are: Sustainable Growth, Sustainable Urban Planning and Sustainable Transport.

The County of Västerbotten presented its new action programme in 2012 with about 200 different measures targeting municipalities, government agencies, businesses, organizations and individuals who want to make a difference and contribute to a society in the next generation, where the main environmental problems are solved. The programme consists of six focus areas, including "Sustainable urban planning, construction and management

1.2 Municipal energy plans and climate strategies

Local authorities have an important role in the energy and climate. Under Swedish law, each municipality to have an updated energy plan. Sustainable buildings are a natural part of an energy and climate strategy. Nowadays, more and more municipalities are joining the EU Covenant of Mayors and develop action plans for sustainable energy. At present, 7 municipalities in the counties have signed the Covenant of Mayors.

2) Description of the objectives

In March 2009 the Swedish Government presented a coherent climate and energy policy which lay the foundation for the future efforts that need to be made in order to contribute to a stabilisation of the greenhouse gas concentration at a level that enable the 2 degrees Celsius target to be reached. Sweden's targets for climate and energy policy by 2020 are:

- 40 per cent reduction in greenhouse gas emissions
- at least 50 per cent renewable energy
- 20 per cent more efficient energy use
- at least 10 per cent renewable energy in the transport sector

The target of a 40 per cent reduction in greenhouse gas emissions relates to the non-trading sector, i.e. sectors not encompassed by the EU Emissions Trading Scheme.

Sweden has also set a national goal concerning energy use in buildings. The total energy use per unit of area in residential and commercial buildings should be reduced by 20 % to 2020 and by 50 % to 2050 compared to 1995.

3) Means to reach the objectives

3.0 Level of ambition

New production

Energy efficiency (no direct electric heating)

	Standard	Pilot MountEE	Best
Concept	BBR 19	1) Miljöstyvningsrådet 2) Miljöbyggnad Silver	1) Belok, energy level A 2) Belok, energy level B
Value (Climate zone 1) kWh/m ²	130	1) 105 2) 97	1) 60 2) 85

Building materials

	Standard	MountEE	Best
Concept	BBR 19	Database for materials	Miljöbyggnad Guld
Special feature Database:		BASTA	Sunda Hus, Miljöbedöming

Renewable Energy

	Standard	MountEE	Best
Concept	Share RES	Share RES	Share RES
Value	Heating at least 50% renewable.	Heating more than 50% renewable, electricity more than 40% from renewable sources.	Energy demand covered by 100% renewable energy sources.

Additional process and management criteria to take into account

- 1) Development and implementation of a quality and environmental programme for project
- 2) Integration of community planning aspects, e.g. regarding transport
- 3) Test of special methods (BELOK, LCC)
- 4) Integration of social dimension of sustainability
- 5) Integration of users, e.g. reg. trainings on energy

Renovation of entire building

	Standard	MountEE	Best
Concept	BBR 19		
Energy		At least -30% of energy demand	At least -50% of energy demand
Building materials	BBR 19	Basta	Sunda Hus, Miljöbyggen
Special feature			
Number of pilots			

Renovation of parts of the building, criteria list

- 1) Development and implementation of energy and climate concept/programme
- 2) Overall concept for reducing energy demand for lighting, ventilation, pumps etc.
 - Standard: BBR 19
 - MountEE: at least - 30%
 - Best: BELOK
- 3) Improvements in insulation and overall heating demand
 - Standard: BBR 19
 - MountEE: at least - 30%
 - Best: at least -50%
- 4) Test of special methods (BELOK, LCC)
- 5) Use of new renewable energy sources (e.g. solar)
- 6) Integration of users (change of behavior)

3.1 Integration in local politics/climate plan/Sustainable Energy action plan

All Swedish municipalities are obliged to have an updated energy plan. More and more municipalities are also joining the Covenant of Mayors. However, specifically smaller municipalities often do not have know-how and capacity to work intensively with energy questions. Complex projects in terms of energy efficiency and renewable energy programs for public buildings are often affected by this.

Collaboration with ambitious municipalities to transfer experience and knowledge could be helpful to give more power to local energy plans and to realize pilot buildings.

3.2 Means within MountEE

Advice and assistance services

- Transfer experience and know-how of international partner and regions within the project MountEE to municipalities and further stakeholders in Northern Sweden;

- Training and capacity building for building companies to ensure that qualified staff is available for building companies;
- Increase knowledge in terms of public procurement rules regarding building projects for building owner;
- Improve collaboration and understanding between public building owners and building companies to push for truly economic, social and environmental building projects.

Adapted funding policies

- Not sufficient funding for ambitious NZEB projects is one of the mayor problems for Northern Sweden. Within MountEE, an analysis of accessible funding instruments has been done. Results and improved proposals will be discussed with funding institutions.
- The Swedish government has allocated 120 Mio SEK per year for 2014-2016 for NZEB pilot projects. Nenet will in cooperation with the RCC support development of ambitious pilot projects in the region and will work for access of funding to ensure that results from realization and follow-up of these projects becomes a basis for further work on NZEB in Sweden.

Cooperation committees to involve all actors of the building chain

- The regional coordination committee which has been established within MountEE project is an important meeting point for the relevant stakeholders in the region. It is also an important pillar in the regional implementation of the MountEE activities and thereby the link between international experience and local action. The committee will be developed further, and shall continue working after the project duration including representatives of both counties.
- Nenet as regional energy agency is committed to actively build networks and collaborate with building stakeholders both in the private and the public sector. Nenet will also be the region's link to the national level with regard to sustainable building questions.

Pilot projects

- In 2015, the Swedish government will evaluate the status-quo regarding NZEB buildings and the promotion activities implemented until then. Results from the 5 MountEE projects will be an important input to the government's revision and future strategy regarding NZEB.
- Nenet will in collaboration with the RCC support the development of ambitious NZEB projects that are qualified to get financial support from the government as part of the newly created funding programme;
- Nenet will in collaboration with the RCC promote experiences from the 5 MountEE pilot projects to further stakeholders in the region.

3.3 Time schedule and milestones

Advice and assistance services

- Nenet will in collaboration with the RCC develop and implement at least 2 regional and 2 national trainings for building companies and public building owners in 2013 and 2014;
- Nenet will ensure counseling, experience exchange and information towards municipalities based on MountEE results and recommendations.

Adapted funding policies

- Nenet will in collaboration with the RCC discuss funding instruments and proposals for improvements with regional and national funders until December 2013.

Cooperation committees to involve all actors of the building chain

- Nenet will create a set of instruments to promote experience exchange with a focus on digital services;
- Nenet will meet, discuss and collaborate with regional authorities to include sustainable buildings as well as results and experience from MountEE in regional planning and strategies.

Pilot projects

- In 2015, the Swedish government will evaluate the status-quo regarding NZEB buildings and the promotion activities implemented until then. Results from the 5 MountEE projects will be an important input to the government's revision and future strategy regarding NZEB.
- Nenet will in collaboration with the RCC support the development of ambitious NZEB projects that are qualified to get financial support from the government as part of the newly created funding programme;
- Nenet will in collaboration with the RCC promote experiences from the 5 MountEE pilot projects to further stakeholders in the region.

4) Medium and long term vision of the strategy

In its Action Plan "Nearly zero-energy buildings (2012)," the Government confirms the need to check conditions and status-quo regarding sustainable NZEB buildings in Sweden in 2015. Until then, several promoting activities will be implemented to increase knowledge and experience across Sweden and to reduce costs for a final implementation of the directive. This includes pilot and demonstration project in all parts of the country, incl. follow-up measurements and documentation. The government will provide 120 million SEK per year 2014-2016 for pilot and demonstration projects.

It will be decisive for the future of NZEB development in Sweden to transfer international experience also to Northern parts of Sweden, and even to implement sound pilot projects that will feed in into the next evaluation of the implementation of

the building directive. The regional strategy will bundle efforts in the Counties of Norrbotten and Västerbotten and will thereby be a chance to give this regions a voice on the national level while at the same time create a momentum for regional energy transition.

The public sector is of high importance in Northern Sweden, and municipalities are also big players via their housing association on the housing market. If municipalities will go ahead with NZEB and will be forerunner, chances are good that even private house builders will follow.

5) Partnership, key actors

Nenet as regional energy agency is the regional energy competence centre owned by municipalities and the County Council Norrbotten. Further stakeholders are:

5.1 Regional authorities, contribution through

- Strategy building
- Coordination between players
- Link to the national level
- Funding

Main regional players

- County Administration Board
- County Council
- Region Västerbotten
- Association of Local Authorities

5.2 Research institutions, contribution through

- Research
- Link to international and to business contacts

Main regional players

- Luleå University of Technology
- Umeå University

5.3 Municipalities, contribution though

- Being building owners
- Regulating authorities regarding land-use planning
- (Often) owner of energy production plants
- Offer counseling for SME on energy

5.4 Funding institutions, contributing through

- Developing funding schemes
- Implementing funding schemes

Main regional players

- County Administration Board
- Banks

5.5 Building companies, networks of and for building companies, contributing through

- Demanding trainings resp. implementing projects
- Realizing projects



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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 (1/2 page)

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 (1/4 page)

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 (1 to 2 pages)

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

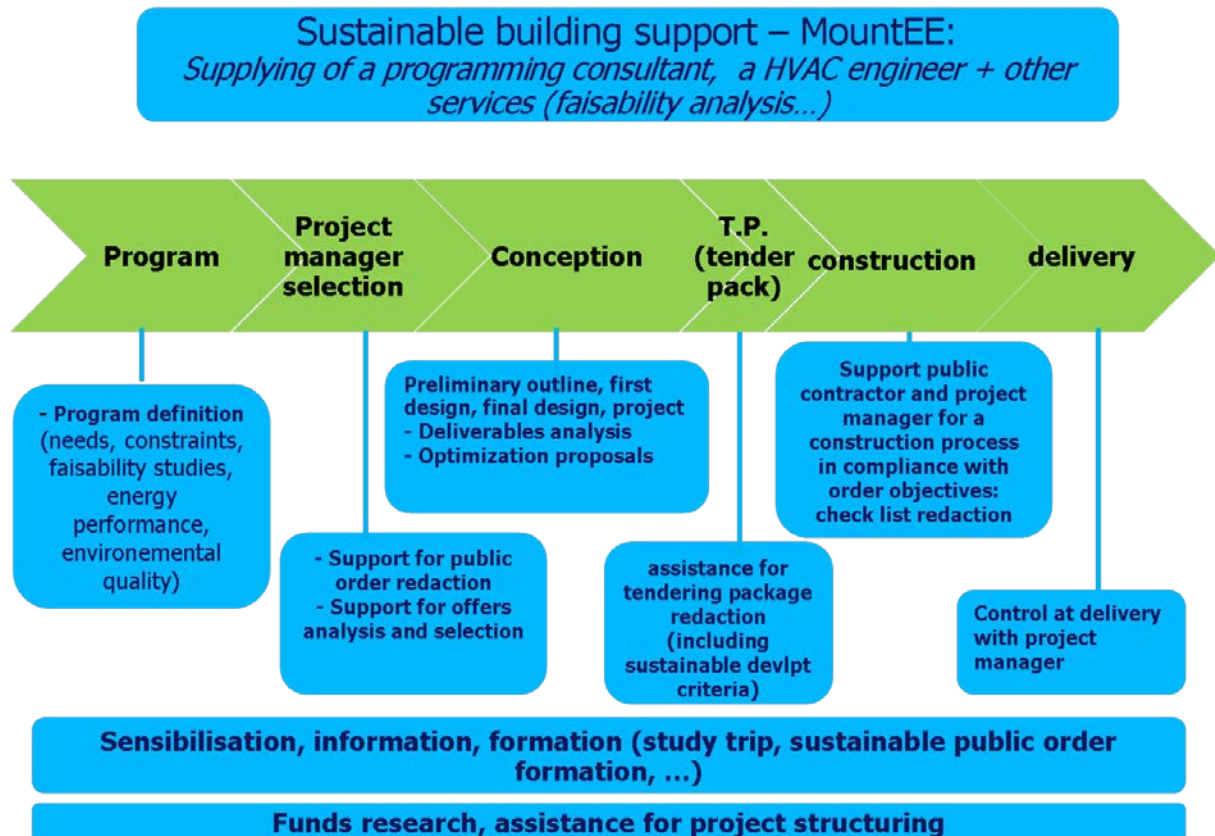
Within MountEE project, a service package will be implemented in the territory to assist mountain municipalities to build and renovate buildings with sustainable and efficient solutions and renewable energy use.

This service package involves:

- > The global animation for supporting 4 pilot projects and coordinating stakeholders.
- > A pre-conception support (programmation step), with identification and realization of faisability 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 selectionned 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 (1/4 page)

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

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D 3.3 : DESCRIPTION OF REGIONAL STRATEGIES

Partner : Rhônalénergie Environnement (accompagné par ASDER et AGEDEN)

And

- Métropole Savoie,
- Communauté de communes du Grésivaudan,
- Communauté de communes de l'Oisans



1) Context

All politic levels, from European commission to municipalities are now engaged to reduce energy consumptions and CO2 emissions.

Municipalities and group of municipalities are a very important actor for action because :

- They owned many buildings
- They can influence their consumptions but also other consumptions on their territories with local actions and policies

Thus, the authorities now have a duty of exemplarity through the management of their consumption, the quality of their own projects (new constructions and renovation), the development of the production of renewable energy and accompaniment of projects.

Métropole Savoie, le Grésivaudan and Oisans are very different in structure. They have in common that they engaged for several years, local strategies that will strengthen Mountee project for the construction and renovation of public sustainable buildings.

Metropole Savoie (116 municipalities) is engaged for sustainable construction through the Local Sustainable Development Contract and urbanism policies witch allows subsidies for sustainable building conception studies and organize information, communication and trainings.

Gresivaudan (47 municipalities) is engaged in a Sustainable Energy Action Plan. Some actions of this plan are specially dedicated to energy saving and sustainable construction and target different building owners (municipalities, citizens but also industries).

Oisans (20 municipalities) is very influenced by Winter tourism activities and the population in winter grow by factor 10.

2) Sustainable building objectives

Climate and environmental issues are reflected in very concrete objectives developed by territories aware of their role in the control of energy demand, exemplarity and production of local renewable energy.

For particularly strong stakes reasons, construction and renovation of buildings, energy efficiency and renewable energy, are widely shared objectives for territories.

In this area, efforts are being made to:

- Accelerate the thermal renovation and ensure performance and quality
- Improve the performance and quality of new buildings
- Develop renewable energy production
- Develop skills and local employment
- Reduce the fragility and vulnerability of the poor
- Adapt to climate change

Depending on the context, these overall objectives are broken down by each territory into operational objectives that allow the construction of actions:

1 - Engaging stakeholders of the building chain

- Awareness (elected officials and professionals)
- Emulation around a theme or project
- Networking and exchange

2 - Supporting public procurement

- New acquisitions of knowledge for project management
- More detailed calls for tender
- Trigger project faster
- More efficient building objectives

3 - Raise competence in

- Changes in work habits
- Vertical Organization process
- Building engineering teams
- Specialization and Skills Development
- New jobs (seal, gray energy)
- Recruitment of new profiles

4 - Distribute feedback

- Organize the capitalization of all experiments for dissemination
- Encourage the reproducibility

These targets are themselves broken down for different target projects (public / private, renovation / new, housing / commercial) and actors (policy makers / project owners / companies).

3) The means to achieve the objectives

3.1 - Integration in local politics

These objectives find their place in a cross in the action plans in progress or to come and how interventions can be mobilized in each territory involved in MountEE.

Metropole Savoie has set up a “Sustainable Building action program” to mobilize all stakeholders of the construction around the environmental quality of new and renovated buildings.

For this purpose, three types of interventions are undertaken:

- Call for project: public construction projects are selected and accompanied to optimize their environmental performance.
- Awareness: in the form of events, sessions several days of sightseeing or trips
- The educational development through missions thematic accompaniment and support.

Gresivaudan and Oisnas has set up local Climate action plan with specific actions dedicated to sustainable building construction and renovation.

3.2 - Means within Mountee

The MountEE project complement and strengthen actions in each territory. It focuses in particular on the establishment of common advisory service to build and renovate their public buildings by integrating ambitious environmental quality, energy efficiency and use of renewable energy.

a. Local Cooperation Committee to involve stakeholders

Local cooperation committee gathers the most possible actors of the construction chain. This is an open discussion and sharing place. Its objectives during the project and beyond is to share:

- Actions MountEE project
- The experience and information on sustainable public buildings beyond the project feedback other approaches and other territories, regulatory developments, training, research ...

b. Counseling and assistance

Aim is to establish common services to support municipalities to build and renovate buildings with an ambitious energy performance and environmental quality. These services are provided through the analysis of the needs and capacities of communities and tested on pilot projects.

The establishment of a support service allows to develop a concept of transversality between community projects, to capitalize on the experience of each project and therefore incur a truly dynamic shared progress.

c. Pilot projects

To test the strategy and services, 9 pilot projects will be accompanied by ASDER and AGEDEN the three communities involved. They will initiate a service project support. The pilot projects have therefore an important experimental and exemplary role. Strong communication shall be made on these projects. They serve as a reference for scaling and enrich the contributions of European partners and Local Cooperation Committee composed of stakeholders in the construction sector in Isère and Savoie.

The contours of the missions are defined but the aim of the pilot projects is to refine the needs of owners and how to respond.

The selection of pilot projects is made on the basis of a call for expressions of interest launched by the end of 2012 three communities.

d. Capitalisation and communication

To share up with the actors, communication tailored to each target will be set up around the project and the experience gained will be used to design training and conferences. Broadcast to other territories will be held at the end of the project.

4) Vision of medium and long-term strategy

Beyond Mountee project, medium and long term objectives are manifold:

- Ensure permanent mobilization of actors with actions towards all public
- training for professionals on sustainable construction to make the standard practices evolve.
- Maintaining and developing the service offering and raise the technical competence of communities to ensure that all municipalities would have the capacity to build and renovate their buildings with energy performance targets, the use of renewable energies and environmental quality of buildings.
- Extend the action and service to others building owners through specific actions and services including directed to:
 - o Social housing
 - o The private housing
 - o The private tertiary

5) Partnerships and key players

The first partnership is established between the project stakeholders:

- The three areas of application: Metropole Savoie, Gresivaudan and Oisans
- Regional and international structures Rhônalpénergie-Environment and CIPRA
- Operational structures: local energy agencies ASDER and AGEDEN,

Beyond these core partners and within the Local Cooperation Committee, the players in the construction of the Savoie and Isère were targets:

- Communities and institutions carrying Communities :
- Professionals and their organizations
- Banks
- The structures of innovation / research in the field of building