



MountEE: Energy efficient and sustainable building
in European municipalities in mountain regions

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
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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, Miljöbedömning

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

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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