



## Energy Efficiency SMEs in Norrbotten Norrbotten Energy Network (Nenet), Sweden

### Summary

The aim for the project "Energy efficient enterprising in Norrbotten" is to create a market for energy efficient enterprising among small and medium size companies in the region. Vocational training and activation of regional competence have been carried out alongside with efforts to interest and engage companies in energy efficiency measures. The project was financed with EU structural fund Objective 1 Norra Norrland, Swedish Energy Agency, the County Administrative Board of Norrbotten and Norrbotten County Council. The following activities have been arranged in the duration of the project:

- Two seminar series, each with three workshops, targeted to present as well as future consultants/actors.
- Pilot studies on three companies in energy efficient enterprising combined with a proposal of energy efficiency measures.
- Six kick-off meetings for enterprises.
- Energy surveys that include proposals of energy efficiency measures, were performed at 16 different enterprises in Norrbotten,

### *The project has, among other things, resulted in:*

- More than 30 persons have received vocational training to perform energy surveys in small and medium size enterprises.
- Seven new companies, most of them in the field of energy efficiency, have been established and ten of the workshop participants have had new employments. A regional network for energy efficient enterprising have been created with more than 100 names.
- Proposals for conversion of heating systems, efficient use of electricity and heating that would reduce the use of electricity with up to 30 percent and for heat up to 84 percent and help the enterprises to reduce their annually energy costs with 5 000 to 350 000 € due to the actual enterprise.
- Energy efficient measures have been presented to the 19 enterprises which together can decrease the CO<sub>2</sub> emissions with about 7 million kilograms annually.
- Public reports from energy surveys performed in the project

#### End-user area

New buildings  
 Refurbishment of buildings  
 Transport and mobility  
 Financial instruments  
 Industry  
 Legal initiatives (regulations, directives, etc)  
 Planning issues  
 Sustainable communities  
 User behaviour  
 Education  
 Other (SMEs)

#### Target Audience

Citizens  
 Households  
 Property owners  
 Schools and universities  
 Decision makers  
 Local and regional authorities  
 Transport companies  
 Utilities  
 ESCOs  
 Architects and engineers  
 Financial institutions  
 Other (SMEs)

#### Technical

Energy efficiency  
 Heating  
 Cooling  
 Appliances  
 Lighting  
 CHP  
 District Heating  
 Solar energy  
 Biomass  
 Wind  
 Geothermal  
 Hydro power  
 Other



## Context

Enterprises in Norrbotten use large amounts of energy. Traditionally, energy prices in Sweden have been very low, so the incitement for energy efficiency measures has been small. Several national studies and project show that when energy prices gradually have become higher the interest and potential for energy efficiency measures in Swedish companies have increased. Studies show that it is possible to reduce the energy consumption in companies with 15-20 percent, sometimes even up to 50 percent.

Several of the major export companies in Norrbotten are trying to make their energy consumption more efficient. But the majority of small and medium size enterprises have not started this process yet. There has also been a lack of competence among consultants in the region when it comes to energy efficiency for small and medium size enterprises.



Each participant received a diploma after the training seminars    One pilot study was carried out at the tourist facility "Ripan" in Kiruna

## Objectives

The project "Energy efficient enterprising in Norrbotten" aims to develop a market for energy efficient enterprising among small and medium size companies in Norrbotten. The work program is focused on two parallel strategies:

1. Vocational training and activation of regional competence
2. Efforts to raise interest and involvement among companies for energy efficiency

The project will contribute to the creation of a regional market for energy efficiency in small and medium size enterprises. The project will help companies in their work to strengthen their position economically, technically and environmentally. The project can also be seen as an investment in new enterprises and development within energy efficient enterprising.

## Process

The project consists of two parts. The first part, "Energy efficient enterprising in Norrbotten" started in August 2005. The second part, "Establishment and market development program for energy efficient enterprising in Norrbotten" started one year later. Norrbotten Energy Network (Nenet) is project coordinator and project partners are Energy Technology Centre (ETC) in Piteå and the Division for Energy Engineering at Luleå University of Technology (LTU). The project has been financed with EU structural fund Objective 1 Norra Norrland, Swedish Energy Agency, the County Administrative Board of Norrbotten and Norrbotten County Council.

**In the first part of the project, following activities were carried out:**

- Two seminar series, each with three workshops, targeted to present/inform future consultants/actors interested in increasing their competence to carry out energy surveys in small and medium size enterprises.
- Pilot studies on three companies in energy efficient enterprising combined with a proposal of energy efficiency measures.
- Six kick-off meetings for enterprises interested in energy efficiency

**The second part mainly consists in:**

- Energy surveys that include proposals of energy efficiency measures in 15 small and medium size enterprises in Norrbotten,
- Development and exchange of practical experiences from energy efficient enterprising in the competence cluster created in the project. The project includes also one extra energy study of a building with an enterprise for refining of meats where there also were a number of other companies. The cluster consists of seminar participants, their mentors at Luleå University of Technology and Energy Technology Centre and the project coordinators at Nenet.

When the energy surveys have been documented and reported the project ends with a regional seminar in the autumn 2007.

The project has consistently had high ambitions regarding gender equality and sustainable development.

**Financial resources and partners**

Budget for the project is 600 000 Euro. Sources of funding are EU structural fund Objective 1 Norra Norrland, Swedish Energy Agency, the County Administrative Board of Norrbotten and Norrbotten County Council. Project coordinator is Norrbotten Energy Network (Nenet) and the project has been carried out in close cooperation with Energy Technology Centre (ETC) in Piteå and the Division for Energy Engineering at Luleå University of Technology (LTU). Nenet has been in charge of project coordination, dissemination of information, creation of network and cluster, mentor support etc. LTU and ETC have mainly been responsible for the technical and theoretical parts in the seminar series, pilot studies and energy surveys.

**Results****The project has, among other things, resulted in:**

- More than 30 persons have received vocational training to perform energy surveys in small and medium size enterprises.
- Two training seminar series, each with three workshops, targeted to present as well as future consultants/actors.
- Seven new companies have been established, and most of them offer energy efficiency services.
- A regional network for energy efficient enterprising with more than 80 different companies have been created. The network regularly receives information about energy efficiency from the project and the Swedish Energy Agency.
- New employments in already established companies that have participated in the workshop training.
- Three pilot studies, two in process industries and one in a tourist facility.
- Development of an efficient method for energy surveys.
- Proposal of measures that may result in a total energy efficiency of 1,9 GWh electricity and 15,1 GWh heating, which represents between 3-31 percent of the companies accumulated use of electricity and between 5 and 84 percent of the heating demand on annual basis.



## Case Study 274: Norrbotten Energy Network, Sweden

- Energy efficient measures have been presented to the 19 enterprises which together can decrease the CO<sub>2</sub> emissions with about 7 million kilograms annually.
- The energy efficient measures that have been presented to the 19 enterprises can help them to reduce their annually energy costs with 5 000 to 350 000 € due to the actual enterprise.
- Six kick-off meetings with companies. The meetings have been planned and carried out together with the trade and industry units in the municipalities.
- Approximately 30 percent women among the participants.
- Extensive dissemination of information through printed material, website, seminars, news paper articles, newsletters etc
- Public reports from energy surveys performed at small and medium size enterprises. All reports are available on [www.nenet.se](http://www.nenet.se). There will be in total 20 public reports (including one for all activities in the project) with proposals of energy efficiency measures as a result from the project.

### Lessons learned and repeatability

The project has already received attention, in the region as well as on a national level. It shows how a regional energy agency can cooperate with governmental actors in the field of energy, regional R&D bodies, trade and industry organisations etc in order to step up the establishment of a regional market within an area that is prioritized by the European Commission, the Swedish government and public, regional development bodies. Methods and tools that have been developed in the project can be disseminated to other regions.

#### Other regions can for example, benefit from the experiences made in the project regarding:

- Vocational training of future consultants/actors within energy efficient enterprising
- Dissemination of information to, and contacts with, small and medium size enterprises
- The process of energy surveys
- Results from energy surveys
- Cooperation between regional energy agencies, regional R&D bodies, etc

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