

100 COMMUNITIES - RES Partnership

UPPSALA Sweden

A stated goal of the Campaign for Take-Off is the identification of "100 communities" aiming at 100% renewable energy supply preferably using a combination of several different technologies. A community in an urban area could be a block of buildings, a neighbourhood in a residential area or even a new district in the city. Uppsala has several goals concerning energy, electricity and renewable energy sources. The municipality works towards reducing energy and electricity consumption, reducing traffic emissions of carbon dioxide and basing the energy supply on renewable energy sources.

THE CITY

Uppsala is one of Sweden's largest municipalities, with a population of 187 000 inhabitants. The city has a long tradition of trying out new ideas and technologies, much due to the fact that two large and modern universities are situated in the municipality. Also, many companies in Uppsala work with research and development, especially within the fields of medicine, medical technology, biotechnology and pharmaceuticals.

Climatic data:

Annual mean temperature: 6,9 °C



CONTEXT

Uppsala has been working for a better environment for a long time. Since Uppsala began working with the "Agenda 21" in 1994, many networks have been started within the municipality's organisation as well as outside. Uppsala is quite optimistic that these networks help in achieving goals regarding the environment.

In October 1997 an environmental programme was decided by Uppsala's city council executive committee. The environmental programme is an action plan for the environment and health related environmental questions. The programme covers four years, 1998 – 2001, after which the programme will be updated. The main objectives are:

- > by 2010, only climate-neutral fuels will be used,
- > the share of fossil energy used for producing fuel from waste will be cut down drastically. To date, 80% is considered as biofuel and 20% is made from waste such as plastics, but improved waste sorting should bring this last percentage down. Approximately one third of the energy produced in Uppsala comes from waste (700 GWh).

Many projects have started because of the local Agenda 21, some of them are noted here. Several public seminars concerning, among other things, traffic and climate issues have been arranged under the auspices of Miljötorget during the year 2000. In May, the same year, the Executive Board decided that all boards should work systematically with environmental issues using environmental reviews by the boards of their own operations. The operations service section has commenced the certification process in accordance with ISO 14 001.

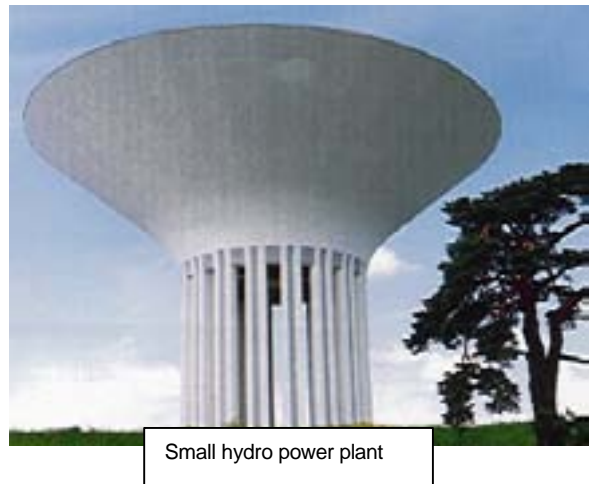
Uppsala has a project called “The Citizen Project in the City of Uppsala”, it aims at developing the community services for society based on local preconditions, and also to facilitate communication with citizens. At the end of year 2000, a citizen office was formed in Stenhagen and is already frequently visited. Naturally, environmental information is included in the office.

EXPERIENCE OF UPPSALA

The partnership signed between the Municipality of Uppsala, the *Ångström Solar Center* and *Skandi System AB*:

The Partnership aims to achieve the objectives of the environmental programme. This will be done by:

- > improving the energy efficiency of the heating plant,
- > increasing the use of wood to produce energy,
- > promoting solar energy,
- > promotion of local small wind farms.



Small hydro power plant

The *Ångström Solar Centre* is a research program which has three project areas coordinated in the program: Thin film Solar Cells, Production of efficient solar cells at low cost and with low material consumption and Nanostructured Solar Cells, "The artificial leaf" - solar cells that imitate the photosynthesis of the green plants with a dye even more efficient than the chlorophyll. Smart Windows with thin films on glazings the energy consumption can be reduced by controlling the throughput of light and solar energy.

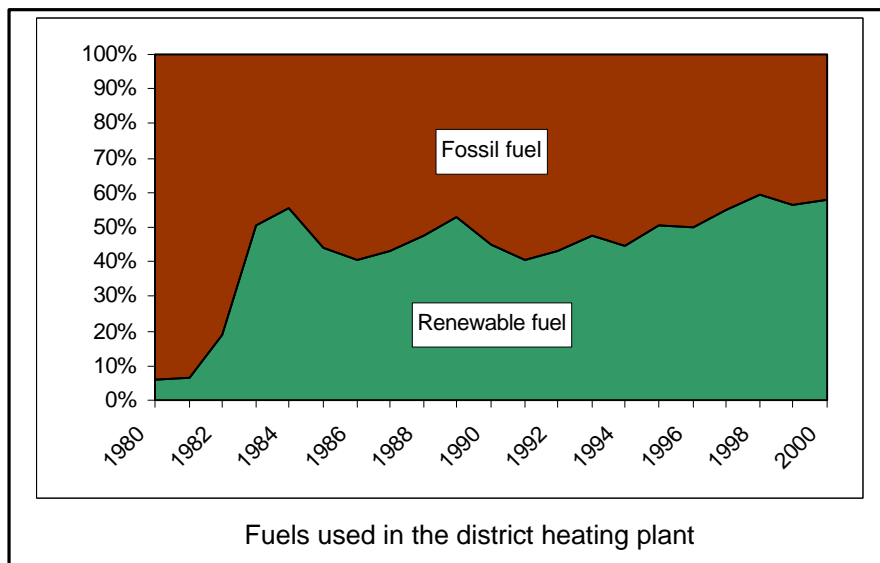
Skandi System AB, now; *Box Delivery AB* promotes the use of bio-fuels and disseminate their experience to other companies in Sweden. *Skandi System AB* started with one truck in 1987. In 2000 they had 60 vehicles and about 100 employees. The company is certified according to ISO 9002 and ISO 14001. For 40 of their trucks, *Skandi System AB* used a system based on GPS (Global Positioning System) and GIS (Geographical Information System) for optimal routing and loading of the vehicles. Some of the company's vehicles run on renewable energy, either RME (rape-methyl-ester) or bio-fuel.

Skandi System AB has always been working toward co-operation with other companies and institutions. Today they are involved in projects with companies in the field of distribution, information technology, governmental institutions as well as research institutions.

Skandi System AB received scholarships as well as prizes for their work in the environmental field. In 1997 they received Uppsala community's environmental scholarship

and in 1999 they received Vägverket’s (Swedish National Road Administration) environmental prize among others.

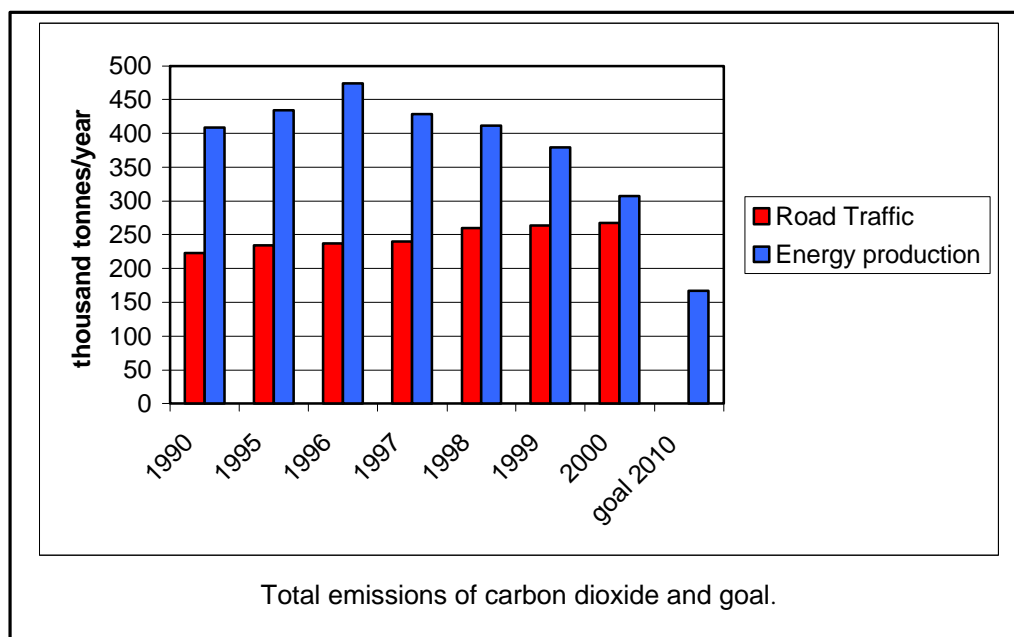
More than 50% of the fuel for the district heating plant comes from biofuels and the plant delivers heat to nearly 95% of the population in the town centre of Uppsala. In Knivsta, a heating plant 100% supplied with biofuels provides 85% of the heat demand (7.000 inhabitants). The energy company has gained a license (from the Swedish Environmental court) to expand the waste combustion plant from today’s license at 250,000 tonnes of household waste to 350,000 tonnes. The construction is calculated to be ready in 2004. The planned construction is one of the few in Sweden that will pass the new standards and regulations that are being discussed in the EU. The increase in heat production will replace other fuels and decrease carbon dioxide emissions with 14%.



Even though the city is situated in a northerly part of Sweden, there are projects in progress within the solar energy field. One project is demonstrating that it is possible to collect solar energy in summer and store it for future use in winter without too much heat loss in the rocks.

As regards transport, 14 buses run on biogas obtained from manure, industrial and slaughter house. In the future the biogas plant will also be able to receive the bio fraction from domestic waste.

The municipality’s stock of vehicles has been up-dated with two hybrid cars, electric/petrol, and some ten cars of environmental class 1. Electric vehicles in the form of mopeds and small vehicles are used for sanitation and park care in the central part of the city.



EVALUATION AND OUTLOOK

Other projects should be implemented in the near future, for instance the use of biofuels in surrounding villages and the construction of a small heating plant in Vänge to supply heat to a school and a residential area with 100 houses. The construction of small scale wood-fuelled plants in Uppsala is also under consideration.

During the first year of the municipality's membership in the Campaign for Take-Off Uppsala participated in Altener 2000 conference and took part in the "Renewable energy for the future Campaign for Take-Off awards2000". During the conference the Swedish participants occupied a joint area with different projects. The conference was rewarding, much due to the fact that new contacts were made and valuable experience sharing took place. The importance of personal meetings can not be stressed enough.



Part of the swedish exhibition at the « Altener 2000 » conference.

FOR FURTHER INFORMATION

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