

PEPESEC Study Visit Report

Malmö

9th – 11th April 2008

Summary

Over 2 and a half days in April 2008 PEPESEC project partners visited Malmö in South Sweden to hold the first project meeting and the first study visit within the project. The focus of the meeting was to get an introduction to energy planning - the Swedish way, and to look at sustainable urban development in Malmö.

The study tour commenced with the arrival of partners and a partner meeting during the afternoon of the first meeting day. The following days comprised presentation on the development of sustainable urban development with the aid of energy planning, combined with study tours to a variety of interesting sites in Malmö.

The meeting was organized in co-operation between the two Malmö-based partners City of Malmö and Skåne Energy Agency.

A) Presentations 10th and 11th April

Official Welcome, Anders Rubin, Local government commissioner for housing and urban environment

Anders Rubin welcomed the attendees to Malmö. He pointed out that energy planning was a central part of Malmö's sustainability work, and mentioned also that he hoped that our activities would result in concrete actions in our municipalities and regions.

1) Experience from the SECURE-project

Roland Zinkernagel, Sustainability strategist, Environment Department, City of Malmö

The Secure-project could be called a sister project to PEPESEC, as well as a source of inspiration. Secure aimed at the transfer of experiences from innovative demonstration projects to mainstream sustainable energy planning in the cities of Malmö, Tallinn, Dublin and Hillerød.

A number of far-reaching concepts as "passive houses" and "carbon neutral enterprises" are about to be assessed and implemented and new local energy partnerships will be developed. The project period is 2006 to 2008. City of Malmö was co-ordinator, with Roland Zinkernagel as project manager.

For more information see also the project's web site: <http://www.secureproject.org/>

2) Experience from energy planning and climate work,

Dagmar Gormsen, Climate and energy strategist, Environment Department, City of Malmö

Dagmar described Malmö's situation on energy planning and climate change mitigation. Malmö started its work on sustainability in the early 1990ies with a strong Local Agenda 21 movement. Since then, a number of projects have been performed, and led to results such as reduced climate impact. However, huge work is still before us since there is a need to mainstream the gained experiences into every day work. Two lessons can be learned so far: Stakeholder involvement is important, and can be achieved in various ways like public-private partnerships or campaigns, and these processes take time (and need to take time). What matters is the doing in the end – plans can support this but the action is the interesting part!

3) An approach to sustainable city development through energy planning – district heating and beyond

Li Lövehed, E.ON heat

E.ON reported on their work to develop a sustainable city concept. Li Lövehed from E.ON pointed out a few cities throughout the world are often are mentioned as sustainable cities. But then she asked the question 'are they really are sustainable?' as they still use fossil fuels and are having problems with air and water pollution, soil erosion and so on. Li pointed out that these cities have one thing in common and that's a concept to become sustainable:

- A strategic plan
- Detailed analysis and goals
- Good decision making
- Implementation

Then she explained the sustainable city concept that E.ON offers:

- Conversation with your city to understand what is important for you
- Pre-study to see how you could work towards sustainability
- Agreement with your city (customers, municipality, E.ON and other stakeholders)
- Implement energy related solutions
- Review progress with you

Li's message was that it is important to have a plan showing how to work in the right direction and become sustainable.

4) General description of the Swedish energy system with an European outlook

Anders Nylander, Skåne Energy Agency

Anders Nylander from Skåne Energy Agency gave an overview of the European energy policies and the climate change problem in general. Anders started with showing pictures of the increasing rate of greenhouse gases in the atmosphere correlated to the earth's temperature. He then described the EU energy policies, in which his opinion rest on three pillars; competition, secure energy supply and sustainability. He moved on describing EU's new climate and energy targets, 20-20-20, and how the burden would be shared. He finished off by describing how Sweden has succeeded with reduce its CO₂-emissions with increased economic growth at the same time.

5) The process of energy planning in a municipality

Per-Johan Wik, Skåne Energy Agency

Per-Johan Wik from Skåne Energy Agency gave a presentation of Skåne Energy Agency's model for energy planning in a region or a municipality. Per-Johan started by describing the history of Swedish energy planning and then moved on to explain that energy planning is divided into two parts, one strategic level and one detailed level. In the strategic level, analysis of the energy system and emission of greenhouse gases are carried out and in the detailed level, goals and measures to be taken are listed.

Skåne Energy Agency has a seven-step model for energy planning in a municipality that consists of:

- Gaining support for the process
- Description of the present situation
- Strategic analysis
- Setting targets
- Communication strategy
- Action planning
- Follow-up

6) Advanced energy planning, involving IT

John Johnsson, Profu consultancy

John Johnsson from Profu is a senior consultant working with energy planning. First John gave us a very brief introduction to energy planning:

- Introduction
- Orientation
- Main study
- Evaluation – Decision
- Carry through
- Rapports – Feedback

John then gave us a detailed presentation of a new developed computer model to use in detailed energy planning. The model is called REAM and are developed in an EU-project Profu took part in.

B) Study Tour, 10th and 11th April

During the afternoons of the 10th and 11th April several study visits were conducted.

1) Solar City Malmö

Malmö is the city with the largest area of PV and solar thermal installations in Sweden. More than 4000 m² of solar thermal collectors and 2500 m² of PV have been installed so far in schools, museum, hospitals, industrial buildings etc. The largest and most spectacular PV plant in Scandinavia was installed in July 2007 in Sege Park in the City of Malmö.

Solar City Malmö is a non-profit association dedicated to raise awareness of solar energy technologies in a balanced and professional way in order to increase interest and skills amongst different parties in the solar market and general public. The association therefore organises training, seminars, exhibitions, study visits, theme days, conferences, technology competitions, information meetings for businesses, installers and councils, education for students, and advisory and dissemination services. The association is also working at a national level for a functioning solar electricity market in Sweden and for continued support in the field of solar thermal and photovoltaic energy. Solar City Malmö will build up a network and knowledge centre for solar energy.

Solar City Malmö has been started in order to increase the use of locally generated solar power and support the development of the solar energy industry. Solar City Malmö supports the general public as well as organisations to start new solar energy initiatives and provides contacts to ensure the good management of solar energy projects. Read more about Solar City Malmö in our brochure. For more information about Solar City Malmö and reservations of study visits to Malmö's solar energy plants you are welcome to contact Anna Cornander.

The project manager for Solar City Malmö, Anna Cornander from Skåne Energy Agency, was our guide for this study tour. The stops included Mellanheds school, where PV installations have a double function and serve as sun shields as well, Augustenborg, where thermal collectors feed in energy into the district heating system, and Sege Park (see above). For more information contact anna.cornander@solarcity.se or look at the website www.solarcity.se (summary in English).

2) Renewable fuels

On the bus tour we passed Malmö's (and Sweden's so far only) hydrogen filling station, run by E.ON. When it comes to gas, there are four filling stations in Malmö, where E.ON provides a mixture of 50% compressed natural gas and 50% biogas. All busses of the city bus lines run on gas, and about 70% of the municipalities' own vehicles fulfill the Swedish environmentally friendly car standard and run on ethanol, biogas, FAME, hydrogen (1 car only), or are highly efficient or hybrids.

3) Augustenborg and Scandinavian Green Roof Institute

The Augustenborg neighbourhood was the pride of Swedish urban planning in the 1950s when the first residents moved from inner city slums into affordable homes with hot water, toilets, fridges and bedrooms. The neighbourhood was initially renowned for its well planned homes and streets with abundant community facilities, small shops and work places. But it soon became known for street fights with rockers from other neighbourhoods, and eventually slipped off the radar in the usual downward spiral of poor reputation, empty apartments and social problems.

In the 1990s the city-owned MKB housing company turned its business around by focusing on socio-economic development in its neighbourhoods, and, together with the manager of the industrial estate in Augustenborg, it started drawing up plans for sustainable regeneration of the whole of Augustenborg, with its school, industrial estate, classic 1950s square and tired shops, and 1,800 homes. As the city mobilised, the Government launched a funding programme for sustainable development, and in 1997 Malmö won a bid for about £1.8 million for Augustenborg, and the ball started rolling. The initial focus was very much on process – on getting local people on board, listening to their ideas, worries and hopes, finding the local movers for change, and then starting to make the first changes. A couple of local people had started an Agenda 21 group that worked with the employment agency to get local unemployed people working on short-term contracts to develop ideas for the neighbourhood. They set up the pilot recycling programme, listened to the concerns of other residents, and worked with them to write the design brief for the recycling houses with recycling and composting facilities and develop a community information programme that could reach every household. It was discovered that one local man who was playing around with water in his spare time in a cellar in Augustenborg was actually doing some quite radical practical research into how the movement of water could be used in different ways. He set up his own business and started working as a design consultant with the City Council and built the forms to cast the first sections of one of the world's most groundbreaking stormwater systems.

The residents association from one part of the neighbourhood was keen to get started with renewing their common outdoor area; visioning exercises with local people and businesses started throwing out ideas about community car pools, cooperative businesses and renewable energy; and suddenly one of the most ambitious sustainable regeneration programmes was taking place. The result was a massive turn-around in the first five years. The flooding problems of the 1990s were solved by green roofs and open stormwater systems that filled the neighbourhood with channels and ponds and wildlife. This kick-started the Swedish green roof industry and put climate adaptation on the map. The recycling system collected 70 per cent of the neighbourhood's waste for recycling and composting in the local recycling houses, one of which, located in the school, had been built by the kids out of clay and straw. Façade renewal reinstated the original appearance of a number of buildings while also reducing energy use by 35 per cent, and improvements to the district heating system cut a further 20 per cent from energy bills. The electric street trains had rolled in public service for a number of years but had not found a commercial future and were sold off, but the community car pool, designed by local people, was going strong. Green space, school grounds and park renewal had created a much more attractive outdoor environment. About 50 people had come through the project directly into other jobs, and unemployment was on its way down. A newly established youth organisation was going from strength to strength, getting local youngsters involved in the community and healing some of the wounds from the Balkans conflict that were then still open, and lots of other community activity was under way – not least through 'Augustenborg's Day', which saw the local community putting on (almost) annual festivals, initially for the local community, but increasingly to show off the neighbourhood to people from outside. Voter turn-out increased from 53 per cent in the elections of 1998 to 79 per cent in 2002 – an unprecedented rise in the city. And the media was full of positive images of the neighbourhood, and local people were still excited to see groups of English-speaking strangers being taken around to study the neighbourhood. For more information see [Malmö's web site](#).

Augustenborg is also the home for Augustenborg's Botanical Roof Garden and the SGRA - the Scandinavian Green Roof Association. The development of the green roofs was part of the regeneration of the district, and has resulted in a 9 500 m² research and demonstration green roof facility, combined with venue facilities and solar energy installations (www.greenroof.se).

4) Sysav – Waste Management Site

The first day concluded with a visit at Sysav, Sydskönes avfallsaktiebolag, the regional waste management company, owned by 14 municipalities in the South of Scania. At their site in Malmö one of the world's most modern waste incineration facilities is built. This plant provides most of the heat for the district heating system for Malmö and its neighbouring municipality Burlöv. At the same time, emissions to air are kept at a minimum possible thanks to clean technology. (www.sysav.se)

5) Western Harbour

The last day of the study visit to Malmö ended with a walking tour to the Western Harbour and Bo01 area, with Jon Andersson from Skåne Energy Agency as guide. The first phase of the redevelopment of the industrial wastelands around the old shipyards had got underway in 1999, with a consensus quality programme agreed by developers, utility providers and the City Council underpinning the concept of creating the 'Sustainable City of Tomorrow'. Phase one was due to be ready in time for the Housing Expo Bo01 in 2001, and the race was on. The quality programme demanded the use of named architects, approved by the city but then given few restrictions in an attempt to create a diversity of design. Development plots were unusually small, again to break the monotony of many newly built areas, and a radical urban plan, inspired by organic medieval cities, created the base for a diverse urban environment. A maximum energy allowance for heat, hot water and electricity was put at 105 kilowatts per square metre in order to enable the energy utility Eon to build a 100 per cent locally renewable energy system which 'breathes' with the other energy infrastructure in the city – exporting energy at times, and importing at other times, in order to match supply with demand over the course of the year.

Heat comes from the sun (12 per cent) and from heat pumps extracting energy from the sea and from the aquifer, essentially a large underground water store. In the winter the waste product of the system is cold water, which is stored in the cold aquifer for district cooling in offices in the summer – the waste product of which is warm water, which can then be stored for heating in the winter. All the electricity is provided by wind power. The green space implemented in the neighbourhood helped to create a new benchmark and a new urban aesthetic, with open water, green roofs and reedbeds becoming commonplace – inspired in part by Augustenborg. Narrow winding streets, varied building heights and designs and a high-quality public realm, leading through to a dramatic seafront promenade with views to Copenhagen, make this an area of contrasts that have proved appealing to professionals from across the globe, as well as to the residents of the city. On summer afternoons you can hardly find a spot to lay out a towel among the bathers and sun worshippers on the waterfront. The 190 metre Turning Torso skyscraper, designed by Santiago Calatrava and towering over the neighbourhood, has replaced the shipyard crane as the symbol of the new Malmö.

In the latest phase of the Western Harbour, the developers worked together in a shared planning process with a lesser number of quality targets, and less ambitious targets, but still some developers have gone on to construct multi-family passive houses, far outstripping the energy performance of the first phase. Read more about work in the [Western harbour](#).

Produced by:

- Malmö
- Skåne Energy Agency