



*Allöverket, combined power and heating plant,
fuelled by bio-mass.*

Kristianstad

Fossil Fuel Free Municipality

Kristianstad is the capitol of Region Skåne and the nucleus of north east Skåne. About 78 000 people live in the municipal area. There are an unusually large number of smaller towns and villages, of which the six largest function as industrial, service and residential hubs for their particular part of the region.

The Kristianstad region has some of the best agricultural land in Europe. Good farming conditions, a high level of mechanisation, a good environment and specialised investment in research and development have turned Kristianstad into one of the major food centres in Sweden.

Programme

In 1999 the executive committee of Kristianstad municipality unanimously decided to declare its will to become a Fossil Fuel Free Municipality. The reduction of fossil fuels is to be achieved primarily by the use of bio-fuels, both biomass as fuel for heating and production of electricity and biogas as fuel for local buses and other vehicles. Other activities are efforts in the field of energy efficiency and changes in behaviour patterns. Community planning is an important instrument to promote a Fossil Fuel Free municipality. The municipality adopted a Climate Strategy in 2005 with specific emission reduction goals for heating, transports and industry. Kristianstad is a partner in the EU campaign Sustainable Energy Europe 2005 - 2012.

Sector: RES
Country: Sweden
Location:
Kristianstad

Fossil Fuel Free Programme

Energy

Achieved:

- In 1999 the executive committee of Kristianstad municipality decided to declare its ambition to become a Fossil Fuel Free Municipality
- Allöverket: Combined power and heating plant in Kristianstad, fuelled by biomass. Established in 1994.
- Karpalund: Biogas production plant using organic waste, both from households and food industry, and manure. The biogas is used as vehicle fuel and in district heating. Established in 1997
- Biogas production from the sewage plant to be used as fuel for buses and other vehicles and in district heating. A joint venture with the private E.ON as a partner. Established in 1999.
- 25 privately owned wind turbines in operation.
- Privately owned water turbine in Helge Å
- Österäng: A pilot project with solar panels producing electricity
- Energy advisor for households and small companies

Sustainable Energy for Europe

Kristianstad has eight times received governmental investment grants from the *Swedish Ministry of Environment* which generates investments in a number of private and public organisations in order to reduce the use of fossil fuels during the period 1998-2012.

Energy from bio-mass

Since the middle of the 1980's *Kristianstad Energy Ltd, (C4 Energi)*, has worked towards replacing oil by bio-fuel and developing a combined power and heating plant in Kristianstad. Major parts of the city are served by district heating and new areas are continually added.

The bio-fuel-powered combined heating and power unit Allöverket, established in 1995, is estimated to have reduced emissions of carbon dioxide in the municipality by 115 000 tonne per year. The bio-fuel, waste from forestry, is taken from within a radius of 100 km. Biogas from the city dump and from the biogas production plant in Karpalund is also used as fuel in Allöverket.

In two villages, Fjälkinge and Åhus, small-scale district heating plants using bio-fuel has been established during the years 2000 – 2003. There are plans to establish another bio-fuel fired small-scale district heating plant, in the village Tollarp.

The municipality has converted 43 boilers in public buildings (schools etc) from oil to pellets and one to straw as fuel. This represents a reduction of CO₂ emissions of almost 3000 tons per year. There are still a few oil boilers left but there are plans to convert these to district heating or pellets in the coming years.

Biogas

In 1997 the local *Municipal Waste Company (Renhållningen Kristianstad)* established the biogas production plant in Karpalund aiming to improve sustainability and energy production. The capacity was doubled to 40 000 MWh/year in 2004.



Biogas vehicle from the municipal carpool in front of the biogas plant in Karpalund

Fossil Fuel Free Kristianstad – Programme

Energy

Achieved:

- Heating fuelled by pellets in 43 public buildings
- Heating fuelled by straw in one public building
- Increased biogas production from the waste water treatment plant.
- Local heating system with bio-fuel in Fjälkinge.
- Energy saving using window efficiency
- New boiler at the CHP-plant 2008

In progress:

- Conversion of single family houses to district heating
- Conversion of single family houses to bio-pellets
- Conversion of more public buildings
- Energy Saving Programme for municipal buildings

Sustainable Energy for Europe

Solar

The Municipal House Company, AB Kristianstadsbyggen, has built a pilot project with solar panels producing electricity.



Solar panels in the residential area of Österäng.

For house owners there is a grant for expenses in connection to investments in so called flexible solar heat. This means that if the house does not have a roof facing south, which is the most favourable direction for solar heating, you can receive a grant for building a shed, or similar, with a solar panel roof facing south.

Transports

Emissions of carbon dioxide in the transport sector continue to increase. In Kristianstad efforts are being made to introduce biogas as an alternative and renewable vehicle fuel. The total possible capacity of biogas as vehicle fuel is 40 000 MWh in the year 2010 of which 50 % currently is used for vehicles in Kristianstad and three other towns.

From the 1st of November 1999 biogas produced at the sewage treatment plant is upgraded and used as fuel for buses and other vehicles. This is a joint venture with the private corporation *E.ON* as a partner and co-investor. The *Public Transport Company, Skånetrafiken*, has introduced 30 buses fuelled by biogas in the public transport system. Approximately 250 vehicles are running on biogas in Kristianstad (May 2008). To further increase the number of biogas vehicles there is a municipality grant of between 30 - 50 % of the extra cost that comes with buying a biogas vehicle.

There are three public gas filling stations, two in Kristianstad and one in Åhus.

In September 2006 a new upgrading plant for biogas was inaugurated. The upgrading capacity is thereby tripled to meet the growing demand for biogas as a vehicle fuel.

Fossil Fuel Free Kristianstad – Programme

Transport

Achieved:

- Bicycle lanes aiming to reduce car traffic
- Cycle paths cleared of snow before, or at the same time as, roads.
- Bicycle pool for employees at the city hall.
- Introduction of biogas as vehicle fuel
- Car-pool with biogas vehicles for employees at the city hall
- Bike to work campaigns
- Mobility management activities, for example during the European mobility week

In progress:

- Biogas Kristianstad: a project aiming to increase the number of biogas vehicles
- Bicycle lanes aiming to reduce car traffic continues to be built

Sustainable Energy for Europe

During the years 1998 -2004, large investments (1 700 000 €) was made for the expansion of the cycle path network

Important factors for reducing the carbon dioxide emissions from transports are information and changing of behaviour patterns. The municipality therefore runs several mobility management projects, such as the European mobility week, information about car pooling and car sharing, encouraging people to leave the car at home and take the bus or the bicycle to work. In 1999 the campaign “From accelerator to bike” was launched and is now followed by yearly “Bike to Work” campaigns. The aim of the campaigns is to reduce short car travels by changes in behaviour patterns.

Planning

Community planning is an important instrument for reducing the increase of traffic and the Municipality of Kristianstad has made extensive changes in the city centre in order to encourage cyclists and pedestrians. The major part of the city centre is a pedestrian precinct.

Awards

Kristianstad has been awarded several times during the past years:

- 2001 Campaign for Take Off Award
- 2002 Climate Star
- 2003 Energy Globe Award, 3rd prize
- 2004 Best work for environmental friendly cars (The Swedish association of Green Motorists)
- 2005 Best Climate Work in Swedish Municipalities (The Swedish Association for Nature Conservation)

Results 2009

Heating and electricity	
Energy for heating sold from the power plant	294 000 MWh
Electricity produced in power plant	70 000 MWh
Number of dwellings connected to the heating system	11 800
Number of houses converted to bio-pellets	1100
Number of schools converted to bio-pellets	43
Electricity from wind turbine generators	50 000 MWh
Electricity from two solar panels	11 MWh
Biogas and transports	
Biogas production from the landfill	15 000 MWh
Biogas production from the waste water treatment plant	8000 MWh
Biogas production from the biogas production plant	40 000 MWh
Biogas used for vehicle fuel	20 000 MWh
Cycle path network	163 km
CO2 reduction per year	4 tons/inhabitant

Fossil Fuel Free Kristianstad – Programme

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Promotor:

- Municipality of
Kristianstad

Key actors:

- C4 Energi AB
(Kristianstad Energy
Ltd)
- Renhållningen
Kristianstad (Local
Refuse Collection
Company)
- E.ON Sweden
- Skånetrafiken (The
Public Transport
Company)
- AB
Kristianstadsbyggen
(the Municipal House
Company)