



Climate and Energy Strategy

for the County of
Kronoberg
and the Region of
Southern Småland



LÄNSSTYRELSEN
I KRONOBERGS LÄN

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*Investing in the future by working together
for a sustainable and competitive region*

This document is a guide to smart environmental choices, a climate and energy strategy developed by the County Administrative Board in Kronoberg together with the Regional Council of Southern Småland.

It will inspire to reduce emissions of climate gases . As many as possible need to be engaged in a more conscious way of living to become smart energy users, the inhabitants of Kronoberg, will contribute on the basis of our own and the county's special conditions. This applies to companies and industry as well as organisations and private persons. Energy supply in society must be essentially adapted if we are to reach the national environmental objectives.

Your input is needed for it to be possible.

This document is a shortened and legible version of a strategy document that can be read at

<http://www.lansstyrelsen.se/kronoberg/amnen/Miljomal/>

A common role

The County Administrative Board and the Regional Council will work together to promote a climate smarter living in the region of Småland, through:

- Spreading information about climate impact
- Adapting policy documents with respect to climate

The assignment

The government commissioned the county administrative boards to formulate climate and energy strategies. These will inspire the county administrative boards, regional councils, trade and industry, organisations and inhabitants to work together to reduce climate change. This can be achieved only through collaboration across borders, new thinking, transition into greener energy and more ways to use energy more efficiently. The aim is to stop climate change and continue the work to fulfil the environmental objectives.

Four main lines of the strategy

- Reduce emissions from travels and vehicles
- Use climate smart electricity and heat
- Switch to renewable energy
- Highlight the climate and energy work done by industry



The starting shot – for a healthier planet

For a long time we have heard about emissions steadily increasing, and about a warmer climate that will cause devastating natural disasters. Still most of us continue as usual, driving environmentally unfriendly cars, making unnecessary air travels, consuming without thinking about where the goods come from. We are destroying the planet for ourselves and for future generations.

It is still not too late to act but it is high time!

The goal is to stop using oil and other fossil fuels. This will be tough and demands a new way to act: to become climate smart! This strategy is the starting shot for our common work.

The county's characteristics – our current conditions

We live in a two per cent county!

The County of Kronoberg has an area of 9,424 square kilometres, or two per cent of Sweden's area. There are 180,000 persons living here, which is two per cent of Sweden's population. It has two per cent of Sweden's agricultural land.

Since 75 per cent of the area is forest it is called a forest county. It is an inland county rich in lakes and bogs.

Manufacture is dominated by medium heavy engineering industry, with loaders as a main product, but also comprising manufacturing of heating equipment. A large part of the manufacturing companies are subcontractors to car industry. Wood and furniture industries are common as well as distribution and selling of their products. Aluminium industry is also well represented.

Former a county with many glassworks and pulp mills we now have only a few glassworks and one pulp mill.

Environmental Objectives

The government has decided the following national environmental objectives to be achieved with common efforts.

National Environmental Objectives


Emissions of climate gases have decreased by 4 per cent (as a mean value 2008–2012), compared to 1990.

Emissions of climate gases shall decrease by 40 per cent by 2020 – compared to 1990. More information available at http://www.lansstyrelsen.se/1st/en/environmental_objectives.htm

Regional Environmental Objectives

The regional environmental objectives are being revised.

Read more about the new regional environmental objectives 2011 at <http://www.lansstyrelsen.se/kronoberg/amnen/Miljomal/>



How to adapt the county

**– We need
to work
with this:**

Renewable energy sources

Invest more in sun heating technology

The interest for solar collectors and solar panels has increased, despite high investment costs and the weaker sunshine at our latitudes. If it becomes possible for everyone to sell surplus electricity, it will be commercially attracting with sun energy.

Expand wind power with minimum intrusion

Wind power plants are planned and will make a large contribution to renewable energy. It is important to locate wind turbines at sites where they have minimum influence on the environment. Small-scale wind power can be important as a complement for individual households. There are large opportunities for the county's industry to participate with subcontract work and as suppliers.

Make small-scale hydro power more efficient

Hydro power plants in use can, if needed, be upgraded to become more efficient and better for the environment. At the same time the habitats for fishes and other aquatic organisms must be improved.

Renewable fuels

Oil, petrol, diesel, coal and natural gas are fossil fuels – they are among the earth's finite energy sources.

Energy from sun, wind, water and biomass are renewable fuels – energy sources which are constantly renewed.

Energy from wind

Wind energy is until today an almost unused energy source in Kronoberg but there is a great interest. There are plans to build 400 turbines with an estimated total capacity of 800–1200 Megawatt. This is equivalent to the electricity consumption in the county. Just now investigation, mapping and environmental assessments are being made – future will show whether plans will turn into reality.

Energy from water

Hydro power is basically already developed in our county. The few small streams not yet exploited have too high biological values and should be protected.





Biofuel

A gradual transition into biofuels is taking place. They are now the basis for district heating and household heating. The competition for raw material will probably harden and the productivity in forests therefore increase at the same time as natural values are protected.

Organic waste

Organic wastes are rests from cooking, peel, coffee grounds and teabags.

Biofuels

Start producing alternatives to petrol and diesel – renewable vehicle fuels

An example is the Chrisgas project in Värnamo with the goal to extract vehicle gas from wooden raw material. The results from the project need to be further developed in the County of Kronoberg.

Start producing biogas in agriculture

It is possible to extract biogas from manure and from digested ley crops in small plants. This is being tested at some farms. Application for grants can be made, e.g. from the Swedish Rural Development Programme.

Produce more biogas from organic waste and sewage sludge

In Växjö biogas is already produced from sewage sludge and waste from large-scale catering establishments. This production can be increased. All households in Växjö municipality will sort out their organic waste in order to produce biogas and use it as fuel for buses and cars.

Develop the local production of biofuels

We must take advantage of the possibilities to develop new fuels and other products in the region, in collaboration with the Linnæus University and the trade and industry.

It is important to find careful ways to increase production in forestry. There have been trials with energy forests but this has not become a practise in the county yet.

Make it possible to produce one's own electricity

There is a large interest to produce one's own electricity, to become self-supporting and decrease vulnerability during storms. Currently it is not possible to sell more electricity than is used by oneself. If all electricity one produces could be sold the interest would probably increase. A change in the law is needed.

Peat

There are different views on climate impact from peat fuel and the international rules will perhaps be changed. Only in areas where nature's values are very low peat mining can take place.

Peat – a fossil fuel?

There is a discussion about whether peat could be regarded as maybe a slowly renewable fuel. In the Kyoto Protocol peat is regarded as a fossil fuel and is part of the emissions trading. The share of peat at the district heating plants has as a result of this decreased drastically.

Transport – car, bus, lorry

Make it easier for more people to choose bus and train – travel by public transports

The attitude towards travelling with bus and train has begun to change. More and more people will choose public transportation. New bus lines, expansion of existing transportation means and alternative solutions are needed to meet the increased demand.





Make it easier for more people to drive eco cars

Still there are not many energy efficient cars running on renewable fuels in the county. One of the reasons for this is that there are no filling stations for biogas in the county yet. A solution to this problem is collaboration between municipality and companies like in Älmhult.

Reduce the number of short car trips – emphasize cycling

Strong efforts are needed to put bicycles in the front so that fewer take cars for shorter trips.

More carsharing

People share a car spontaneously where the conditions are good for it. Carsharing could increase by using information technology.

More carpooling

In larger cities efforts are directed on developing carpooling. In the sparsely populated county of Kronoberg the conditions for carpooling are not so favourable, but in smaller contexts, for example premises with many companies and housing cooperatives, it could work fine.

More goods on trains instead of lorries

An investigation in the county shows that there are many large companies that would like to transport goods on railway. Green public procurement implies that municipalities and county councils can demand transport coordination and also choose to buy transports separately.

Ask for smart goods transports

If purchasers and haulage contractors collaborate more about loading and logistics, both environment and climate would benefit much. Purchasers in municipalities and county councils can demand transport coordination and also choose to buy transports separately.

Train more people in eco-driving

Eco-driving is a way of more efficient and environmentally friendly driving. There is also a need for so called heavy ecodriving, an efficient way of driving heavy vehicles, larger transport vehicles and machines in forestry and agriculture.

Infrastructure – roads, railways and airports (See also above, Transports)

Have the climate in focus when planning transports in the county

Emissions from cars and heavy traffic have the largest impact on environment and climate. This knowledge must be clearly considered when the county's infrastructure is planned.

Goods by train instead of lorries and emphasize public transports

There is a need to develop junctions like travel centres and terminals where passengers and goods can change their means of transport.

Renewable vehicle fuels also in smaller villages and in the countryside

Climate smart vehicle fuels must be available for all consumers. This is especially important in places where there are no public transports, and no alternatives to cars.

Transports have increased

Despite information and large efforts to reduce the number of food transports with lorries, they have increased heavily. An exception is the transport of wood by train during the recent years. In 2008 a regional goods transport council was created to help coordinating transports between lorry and train.





*We must think
smarter to
save energy*

***Become energy
efficient***

Improve cycleways in the county

To inspire more persons to choose bicycle instead of car, cycling must be attractive, simple and secure. Air quality will improve if we reduce the number of cold starts and short trips by cars.

Continue building the fibre network

Many trips causing emissions can be avoided if we choose to meet via computers instead. This requires a good expanded fibre network and IT infrastructure.

Use climate smart electricity in industries and municipalities

There are several ways to use electricity more efficiently, in industry as well as in the municipalities' technical work.

Use surplus heat in industry and agriculture

At some places in the county there are examples of using surplus heat from industry in district heating, but there is much unused surplus heat that could be reused, for example from smelting plants and foundries.

Increase the share of biofuel in industry

Biofuel can replace fossil fuels in industry.

Build new – build passive houses and energy-plus-houses

More constructors of buildings should build passive houses and energy-plus-houses when building new. This will have big advantages in the long run.

Make old houses good for the climate

Insulate, replace windows and old boilers, use district heating or other climate smart alternatives for energy.

Encourage tenants to save electricity

In older buildings the electricity cost is often included in the rent. If the tenants had the possibility to influence their heat and energy bills this could motivate them to save energy. When done so in the county the results were good.

Campaigns for biofuels and replacement of boilers

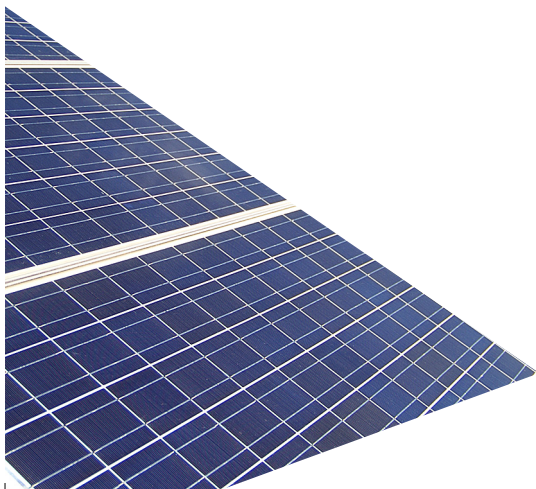
Start campaigns for biofuels and replacement of boilers. There is a large need for training in how to avoid unnecessary emissions through good combustion conditions.

Replacement of old oil boilers

The old heating systems need to be replaced by new ones. There are still many old boilers left. Heat pumps are an alternative to other older boilers, if their electricity derives from renewable sources.

Passive houses and energy-plus-houses

Passive houses are built energy saving with extra thick insulation and good ventilation. The heat from people living in the houses, their electrical appliances and the sun heat the house. Energy-plus-houses are energy saving houses that produce more energy than the household needs. Energy comes from wind power and/or solar panels.



Emissions from agriculture

The large climate impact from agriculture comes from fertilizing and cultivation of soil. With new methods there will be less emissions of nitrous oxide (laughing gas) and other gases influencing climate. Therefore information about environmentally friendly cultivation is needed.

Agriculture

Agriculture can be part of an increased climate impact, but if the soil is gently cultivated the impact on climate is reduced.

Produce more biogas in agriculture (see also Bioenergy)

Production of biogas in agriculture could be enough as to satisfy the sector's needs.

Climate labelled food, products and services

Our ruminating cows are a source of climate gas emissions. The number of cows has not increased so much however, so they are not a great problem. Purchase of meat from other countries has increased. Consumers need better information about which beef cattle have the least climate impact.



Waste (See also above, Renewable energy sources)

Produce more biogas from sewage and organic waste

Organic waste from food in Växjö municipality will be digested into biogas. The other municipalities in the county could collaborate with Växjö. Methane from old waste disposal sites can be used for heating.

District heating

Build district heating net in more villages

District heating has expanded in the county but some areas and villages still remain to be connected.

More Combined Heat and Power

More Combined Heat and Power plants can be built in the county.

More district cooling

The governmental investigation about climate and vulnerability shows that the need for cooling will be quintupled. From a climate perspective district cooling is a better alternative than cooling produced with electricity. Experiments in Växjö show good results.

Other technical measures

Reduce emissions of laughing gas in the county council

Nitrous oxide or laughing gas has a large impact on climate. Technique to reduce emissions of nitrous oxide is available. The county council works with with sealing leaks and maintenance as well as with providing information.

Create new combustion systems for biofuels

Collaboration between the Linnæus University and manufacturers of heating systems in the region can lead to a climate smart trade and industry where economy and reduced environmental problems go hand in hand.

What is nearby and district heating?

Nearby heating means a common heating system with a few houses or larger areas connected instead of individual boilers. Large systems delivering heat to a whole city are called district heating.

What is district cooling?

In the same way as district heating, water is pumped in a network of insulated pipes. The difference is that the water is cooled instead of heated. This is more efficient, reliable and good for the environment than individual cooling at buildings. If renewable fuels are used to produce cool it is very climate smart.

What is Combined Heat and Power?

In a Combined Heat and Power plant, CHP plant, or cogeneration plant, electricity is generated at the same time as district heating is produced. If renewable fuel is used, this is a more energy efficient and environmentally friendly way to produce electricity than most other ways.

Physical planning

Physical planning decides how to use land and water in a municipality.

Regional Development Plan

In the Regional Development Plan the long-term environmental objectives in the county are defined. Good conditions to develop trade and industry with climate issues as a starting-point are described. Important partners are the Linnæus University and their research in bioenergy, the Energy Agency for Southeast Sweden, the region's manufacturers of boilers, heat pumps etc. and companies like Alstom, doing research with an international approach.

Regional and municipal planning

Develop municipal climate strategies

Municipal climate and energy plans need to be updated often, become more articulated and be developed into climate strategies. It is also important that greenhouse gas emissions are considered.

Take consideration to climate and energy issues in physical planning

How are environment and climate influenced by city planning? This aspect must be considered even more when decisions are made. New residential areas should be placed where they can be connected to a district heating net. Passive houses and energy-plus-houses can be promoted as well as climate smart alternatives to trips with private cars.

Advise on heating at application for building permits

Municipalities can be very clear when making demands on building companies and exploiters when selling municipal land, to have them make energy smart choices.

Plan transports in the county with a climate perspective

The Regional Council of Southern Småland is responsible to develop a county transport plan 2010-2021. A key issue in the plan is to reduce the climate impact of transports.

Increase collaboration between trade and industry and the Linnæus University

The Linnæus University is well to the front with research about energy and climate. The Energy Agency for Southeast Sweden spreads knowledge and initiates projects in the region. There are good possibilities that climate issues will develop the county's trade and industry.

Other planning and policy documents

Adopt environmental management systems at companies

Environmental management systems could be adopted at more companies to stimulate an environmental perspective when purchasing and choosing transports.

Buy environmentally friendly energy and energy saving products

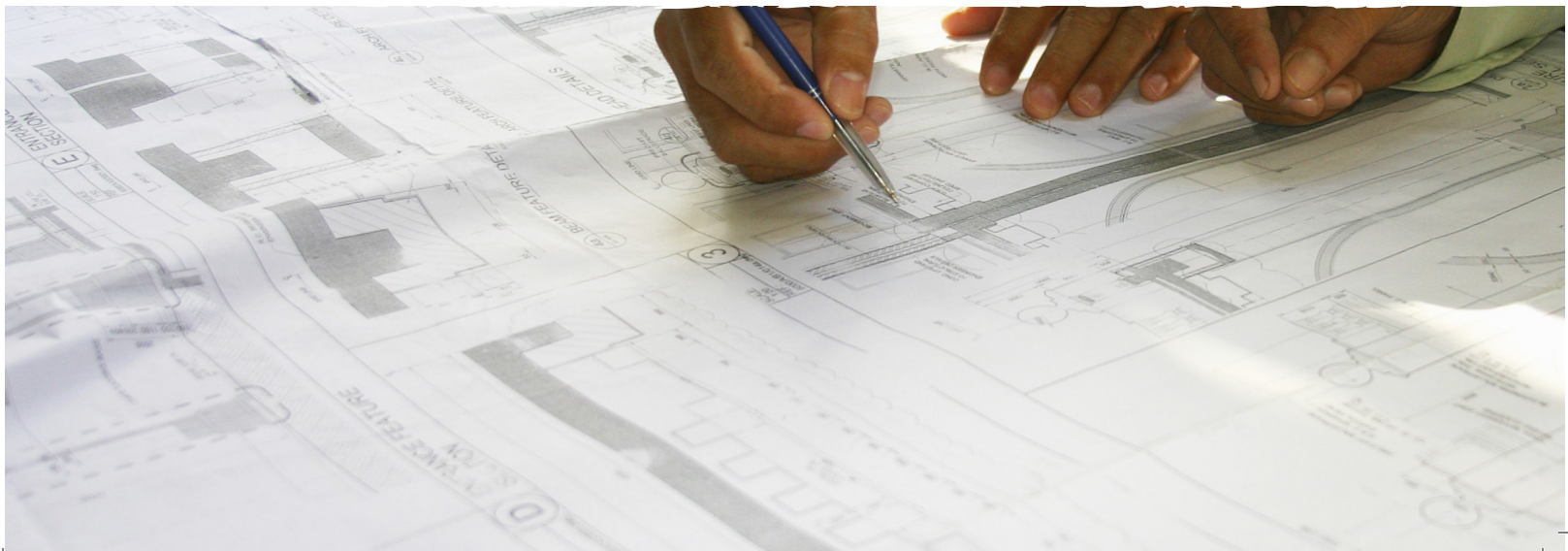
Companies, authorities and organisations should introduce a purchase policy with focus on the environment, to facilitate for climate smart choices.

Introduce purchase policy for energy efficient vehicles

When companies, municipalities and regional authorities use purchase policies with an environmental perspective they will buy energy efficient vehicles with environmental labels.

Environmental management system

An environmental management system is a way for companies and organisations to work systematically and in a structured way with environmental issues. There are international standards for such systems, like EMAS and ISO 14001, but also national simplified standards like Miljödiplomering. To be certified is not equivalent to being environmentally friendly. It just means a promise to work actively and in a structured way to reduce the impact on the environment.



Climate commission

The Regional Council of Southern Småland has established a climate commission, a broad group consisting of representatives from the region's trade and industry, university, politicians and other organisations. The Climate Commission will show on best practice examples and facilitate for people from different areas of society to meet over boundaries and exchange experiences.

Mobility management office

The regional mobility management office is a platform, opinion-maker and driving force in the regional work with sustainable transport.

Choose locally produced products to reduce transports in trade

If locally produced products and services are promoted, climate gas emissions can be reduced. When buying food it is also important to choose ecologically produced products.

Climate information: regional actors and regional collaboration

Develop a regional climate commission which activates and keeps climate work going in the county

Create a regional climate centre

A “display window” must be created where climate smart companies can show their products for stakeholders, consumers and other companies.

Develop municipal energy advice to the citizens

Climate and energy advisers' role must be strengthened. It is also important that the regional mobility management office has a good long-term economy to be able to continue working in the long term.

Training and information to companies and the public

Develop web pages for information and training in environment and climate issues.

Increase knowledge about energy and sustainable development in schools

Schools are important as a way to change attitudes in the area of climate and energy. Sustainable development should be an even more clear part of the education of teachers.

*Nobody can do
everything, everyone can
do something!*



This needs to be done:

Planning and policy documents

- * Develop a regional climate commission which activates and keeps climate work in the county going
- * Plan transports in the county with a climate perspective
- * Develop municipal climate strategies
- * Adopt environmental management systems in transport companies
- * Buy environmentally friendly energy and energy saving products
- * Introduce purchase policy for energy efficient vehicles
- * Build a large network of cycleways in and between villages
- * Choose nearby produced products to reduce transports in trade
- * Take more consideration to climate and energy issues in physical planning
- * Advise on heating when handling building permits

Information

- * Inform about climate friendly agriculture
- * Continue developing the local mobility management office
- * Create a regional climate centre and a regional energy centre
- * Climate label food, other products and services
- * Training and information to companies and the public
- * Increase knowledge about energy and sustainable development in schools
- * Develop municipal climate and energy advice to the citizens



Reduce emissions from transports

- * Make it easier for more people to choose bus and train – travel by public transports
- * More goods on trains instead of lorries
- * Make it easier for more people to drive eco cars
- * Reduce the number of short car trips – emphasize cycling
- * Continue building fiberet to reduce need for transports

Climate and environment driven trade and industry

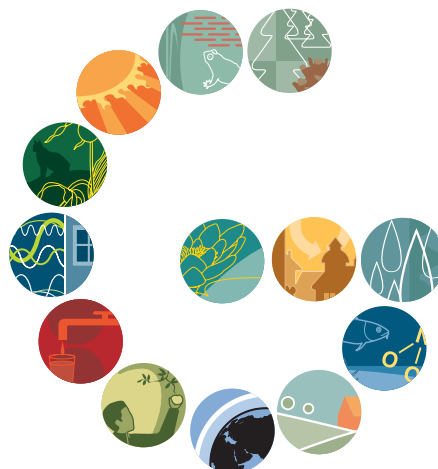
- * Develop the local production of biofuels
- * Create new combustion systems for biofuels
- * Make use of potential in expansion of wind power
- * Increase collaboration between trade and industry and research at Linnæus University

Go on with energy efficiency

- * Build new – build passive houses and energy-plus-houses
- * Make old houses good for climate – make them more energy efficient
- * Train more people in eco-driving
- * Reduce the share of electricity for heating residential buildings
- * Use climate smart electricity in industries and municipalities
- * Collaborate to make goods transports more environmentally friendly
- * More carpooling
- * More carsharing
- * Use surplus heat in industry and agriculture
- * Stimulate consumers to save energy with individual metering
- * More efficient use of nitrous oxide (county council)
- * More district cooling

Renewable energy

- * Expand wind power with minimum intrusion
- * Start producing biogas in agriculture
- * Produce more biogas from organic waste and sewage sludge
- * Start campaigns for biofuels and replacement of boilers
- * Start producing alternatives for petrol and diesel – renewable vehicle fuels
- * Develop the local production of biofuels
- * Create systems to introduce biofuel in the countryside and smaller places
- * More Combined Heat and Power
- * Replacement of oil boilers to heat pumps
- * Build nearby and district heating nets in more villages
- * Invest more in solar heating
- * Make smallscale hydro power more efficient
- * Increase the share of biofuels in industry
- * Make it possible to produce one's own electricity



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