CLIMATE INVESTMENT PROGRAMMES

An important step towards achieving Sweden’s climate targets
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Emissions of greenhouse gases are perhaps the single greatest threat to the environment. Alongside global cooperation, local climate projects are of vital importance in helping to achieve an ecologically sustainable society. The climate investment programmes, which support this local work, contribute towards achieving the Swedish climate targets.

In several rounds between 2003 and 2008, Sweden has approved applications for government support totalling just over SEK 1.8 billion to climate investment programmes, Klimp. The purpose has been to encourage municipalities, companies and other stakeholders to reduce their emissions of greenhouse gases via long-term investments. The local aspect of these climate projects is strengthened by the requirement for local collaboration. Klimp is a continuation of the local investment programmes, LIP, which were allocated from 1998–2002.

**Sweden’s climate targets**

Sweden has adopted a two-stage target in its climate policy. Greenhouse gas emissions will be cut by 4 percent compared with levels in 1990 as an average for the 2008–2012 period, and by the year 2020 emissions from activities that are not included in the EU Emissions Trading Scheme will be reduced by 40 percent.

**One of several policy instruments**

The incentive grant via Klimp is one of several tools that Sweden has used, and uses, to limit emissions of greenhouse gases. The projects in Klimp and LIP are expected to together reduce annual emissions by more than two million tonnes. This reduction in emissions can be compared with Sweden’s total emissions of just over 65 million tonnes in 2007.

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1. Local investment programmes, LIP, aimed to encourage ecological sustainability in society. A total of just over SEK 4 billion was allocated to environmental and climate investments.
Focus on direct effects in local climate projects

Only the best projects in the best climate investment programmes have been supported by Klimp. Requirements have included good climate strategies, a holistic perspective, collaboration and grant efficiency. The focus has been on achieving direct, measurable climate effects in a long-term perspective.

The projects included in a climate investment programme consist chiefly of physical investments. The programme normally runs over four years, followed by an assessment and final report. The level of the grant paid out is linked to the extent to which the targets have been met.

Local solutions go global
The fundamental idea is to make it financially possible for local stakeholders to invest in climate-adapted environmental technology within, for example, energy and transport. These local experiences are then disseminated in order to be of benefit not just in Sweden but also in the EU and other parts of the world.

What is a climate investment programme?
The starting point is for a local player, for example a municipality, to conduct an inventory of the energy situation and emissions of greenhouse gases within its geographical area. Following this, potential projects are identified that might improve the climate and energy situation. This involves considerable cooperation between those public and private players that are able to contribute. The most effective projects are gathered under a four-year programme.

Klimp supports the best projects
Applications were made to the Swedish Environmental Protection Agency, which assessed the programme proposals and their projects together with the appropriate expert authorities. The best programmes were awarded grants for those projects that offered the largest emission reduction per
krona of the grant. When a programme has been implemented and the final report submitted an assessment is made of how well the targets have been fulfilled, after which the level of the grant is decided on and final amount paid.

**Results of grants awarded**

The last grant to Klimp was awarded in 2008, and all programmes are due to be completed by the year 2012. Klimp consists of 126 programmes comprising 913 projects, which are being carried out by municipalities, companies and other organisations. The grants awarded, totalling just over SEK 1.8 billion, are expected to result in just over SEK 8 billion worth of environmental investments. More than 60 per cent of Sweden’s municipalities have been granted funds to implement climate investment programmes, or previously local investment programmes.

**Emission reduction of a million tonnes**

At the moment, the Klimp projects are expected to reduce annual greenhouse gas emissions by just over 1 million tonnes of carbon dioxide equivalents, as well as contribute annual energy savings of just over 1 TWh.

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**HOW THE GRANT APPLICATIONS WERE ASSESSED**

Only the best programmes and projects were awarded grants from Klimp. These have been assessed in three stages:

1. **The first stage** involved checking that the project fulfilled the formal requirements. The programmes were then ranked according to several aspects, including the quality of their climate strategy, distribution of knowledge, as well as planning of follow-up work and evaluation.

2. **In the second stage**, expert authorities were called in to examine the projects in the best programmes. The projects were assessed based on, for example, cost and grant efficiency.

3. **In the third stage**, those programmes that were ranked the highest in the assessments were allocated grants for their best projects.
Local climate strategies – a key to success

The holistic perspective has been a significant assessment factor in grant applications to implement a climate investment programme. It has therefore been important for the programme and proposed projects to be part of the municipality’s overall climate strategy.

One requirement for being awarded a grant has been for the municipality to have a climate strategy in place. The analyses in the climate strategy make it possible to determine which projects will make the most effective contribution towards achieving the Swedish climate target. The strategy should detail the level of greenhouse gas emissions within the municipality, the targets that the municipality has set for reducing its environmental impact, and the measures that are being planned to achieve these targets.

Consensus between stakeholders
The strength of such a strategy lies in the fact that the municipality, together with other relevant organisations, has conducted a systematic review of conditions within the municipality’s geographical area and identified the problems that exist.

KLIMP CONTRIBUTES TOWARDS REDUCING SWEDEN’S EMISSIONS OF GREENHOUSE GASES

Klimp contributes towards reducing Sweden’s emissions of greenhouse gases in three different ways

1. Direct effects
   Achieved via investments that reduce emissions of greenhouse gases and cut energy use.

2. Strong local environmental work
   Achieved via increased collaboration within the municipality as an organisation, and between municipalities and other local stakeholders. Similarly municipalities are encouraged to cooperate with each other.

3. Increased knowledge among other players and among the general public
   Knowledge and experiences are disseminated in connection with investments to encourage climate projects, both locally and in other parts of the country.
One important requirement for receiving a grant was that the climate investment programme had to be based on a holistic perspective of greenhouse gas emissions. Collaboration between various players has thus been a key element in assessing the applications. Pursuing climate projects in the form of programmes creates synergies by bringing together a large number of players in the projects included in the programme.

The programmes’ investments are implemented in those sectors that impact most on the climate. The investments have focused largely on transport and energy use.

Collaboration was already underway during the early stages of formulating the programmes. Consultation with the county administrative boards has meant that regional and national aspects have been included in the planning process right from the start.

Several players in the same programme
Involving a large number of players has been entirely natural in view of the holistic approach of the climate strategies. These players have been on board right from the planning stage of the climate investment programme to highlight various perspectives, improve the content and gain endorsement for the projects. A completed programme should thus result in increased collaboration and greater understanding between the various players. The municipalities have been the main players in Klimp, and their commitment has been a success factor for the programme. Other sectors that have often participated in the programmes include businesses/industry and universities.

“It is extremely important for municipalities to work together with businesses on the climate issue. It’s more important than ever now. Klimp has helped with this, and the timing has been perfect. Municipalities have the local holistic perspective. Equal cooperation with the government and businesses has enabled climate measures to be chosen and implemented in a long-term and efficient manner. The respect and understanding between the interested parties for their various roles also partly explains why it has worked so well.”

PETER WENSTER, ENVIRONMENTAL EXPERT AT THE SWEDISH ASSOCIATION OF LOCAL AUTHORITIES AND REGIONS, SALAR.
Klimp has focused on climate investments that offer measurable results. The climate investment programmes and the projects within them each have clear effect targets, which are followed up and reported. A final assessment will be carried out when all the programmes are completed in 2012. To follow is a presentation of the situation in June 2009, based on the final results that have so far been reported and the forecasts available for the results of programmes that are still in progress.

This is how Klimp has been allocated.
The support has not been directed at any particular kind of technology, but has instead been given based on effect. The allocation of Klimp grants in the diagram to various different sectors is based on the nomenclature of international climate reporting.

The impact on climate of different sectors
The diagram beside shows a break-down of the estimated effect, an annual reduction of just over 1 million tonnes of carbon dioxide equivalents, when all the projects have been completed. However, the effect may well be lower, since experience shows that not all projects are implemented according to plan. In June 2009, 31 programmes had submitted their final reports.
Cost per tonne of carbon dioxide equivalents
Over the years, the cost to Klimp of reducing greenhouse gas emissions has fallen. Thus the projects that have been awarded Klimp grants have become increasingly efficient. The average grant cost for the government is approximately SEK 100 per tonne, which can be compared with the EU Emissions Trading Scheme, where a tonne costs SEK 1502.

Reduced energy use
Efficiency improvements and savings can reduce emissions of greenhouse gases via less energy use. The projects within Klimp are estimated to reduce energy use by just over 1 TWh a year. The greatest reductions are being made within road traffic and energy production and distribution.

More environmental benefits
Klimp also has the spinoff effect of contributing towards other environmental objectives in Sweden. In addition to limiting the impact on climate, the projects are also helping to reduce emissions of nitrogen oxides, sulphur, dust and volatile organic compounds. Similarly, Klimp is also reducing acidification and eutrophication. Finally, many of the projects are also contributing towards the environmental objective ‘A Good Built Environment’.

Flexibility improves results
A programme continues for four years, and conditions can change during that time. Klimp is flexible about such changes, and the Swedish Environmental Protection Agency is continually processing proposals that involve adaptation and improvement. This flexibility means that the size of the grants and the anticipated emissions reductions are being constantly adjusted. Such adaptation will continue up until the last projects are completed in 2012.

Unutilised grants are reinvested
For various reasons, some projects are never carried out. In such cases, the unutilised grants have been reused to finance Klimp projects in later decision rounds. To date just over 30 per cent of the grants awarded have not been used, which has meant that the scheme has been able to support more programmes.

2. Source: www.pointcarbon.com
Four examples from 126 programmes and just over 900 projects

You can search for information on all projects that have been awarded grants in the web-based Environmental Investment Register, MIR. This also includes summarised versions of specially selected ‘best practice examples’. To follow is a brief presentation of four completed projects within various sectors.

**Biogas helps the municipality of Helsingborg achieve environmental target**

Helsingborg’s environmental target is for carbon dioxide emissions to fall by 20 per cent by 2010, compared with levels in 1990. For road traffic, this means stabilising emissions at 1990 levels.

The municipally joint-owned recycling company NSR doubled its production of biogas as part of the process. The advantage of this renewable energy source is that it does not provide any net addition of carbon dioxide to the atmosphere. Following the expansion of the waste and recycling installation and with a new gas upgrade, the installation now produces fuel equivalent to just over three million litres of petrol per year.

The project has given rise to new partnerships with local food companies and farmers, who supply raw material for the digestion process. Raw material is also supplied via the sorting of organic household waste from NSR’s six owner municipalities.

A total of SEK 46 million has been invested in the expansion of biogas, SEK 6.6 million of which came from Klimp.

**KLIMP IN Helsingborg**

- Total funding granted: SEK 41 million
- Total environmental investment: SEK 171.0 million
- Reduction in greenhouse gas emissions*: 17,410 tonnes/year

* calculated as carbon dioxide equivalents

The expansion of the biogas installation has improved access to biogas as a fuel for both buses and cars in Helsingborg.
Public outreach initiative helps Linköping residents to take climate action

Linköping’s climate investment programme included the information and public education project TEMP – Transport, Energy, Environment and Project. This project has been responsible for all the information measures in the programme, while also implementing its own communication measures. Linköping residents have, for example, been supported in increasing their knowledge of:

- environmental travel alternatives
- biogas as vehicle fuel
- how to reduce energy consumption
- heating from renewable energy sources.

Several campaigns have been implemented on the theme of climate-friendly traffic, including “About town without my car” and “Cycling to work”. School pupils have also been informed and inspired, partly through the exhibition “Klimatgreppet” (Getting to Grips with Climate).

Linköping municipality has been responsible for the project, which involved cooperation between various local players. The project cost SEK 22.6 million, of which SEK 7.1 million came from Klimp.

KLIMP IN LINKÖPING

- Number of projects: 22 in total (13 in 2003, 9 in 2008)
- Total funding granted: SEK 35.8 million
- Total environmental investment: SEK 192.8 million
- Reduction in greenhouse gas emissions*: 15,006 tonnes/year

* calculated as carbon dioxide equivalents
Cooling from sea water reduces carbon dioxide emissions.

Artificially produced cooling in local properties causes unnecessarily high energy consumption and coolant leakage. The City of Stockholm wanted to reduce its environmental impact by expanding capacity for district cooling.

An aquifer was constructed on Kungsholmen, which went into operation in summer 2009. This means that existing conventional cooling systems can be phased out. New commercial properties can plan for district cooling right from the start and thus avoid investing in their own compressor-driven cooling equipment. The aquifer can produce a total of 80 MW of district cooling.

There are several environmental benefits. The reduction in electricity consumption reduces carbon dioxide emissions considerably; the system avoids coolant leakage; there is no noise from fans, and the power in the electricity network can be used for more productive purposes.

There has been a huge amount of interest from around the world. The district cooling installation has been visited by schools, organisations and government authorities. The US Department of Energy has been on a visit, as have representatives from Japan, China, Dubai and a number of European countries. The project has cost SEK 115 million, of which SEK 19.6 million was from Klimp.
The technique of storing solar heat in the rock in order to use it during energy shortfalls in the winter half of the year has cut housing company Mölndalsbostäder’s electricity consumption by half.

Solar energy stored in rock provides heating for Mölndal residents

The housing company Mölndalsbostäder wanted to replace an old electric boiler, which provided heating and hot water to 111 flats, with a more environmental solution. They considered geothermal heating, which generally makes use of the heat that is present in the bedrock. However, Mölndal opted for a solution that takes the technique a stage further.

The system is based on storing air heated up by the sun down in the rock during the summer. The combined geothermal and solar heat solution functions like a kind of energy bank. It saves energy when there are major energy surpluses during the summer half of the year, to then use it when there is an energy shortfall during the winter half of the year. The construction means that the installation can also provide cooling if required.

Mölndalsbostäder is the first company in the country to use this technique in a block of flats.

The project has meant that the 1,000 MWh of electricity that was used every year to produce heat and hot water for the residents has been cut by half. The installation is in operation, and consumption is now roughly 500 MWh a year.

SEK 990,000 of the total investment cost of SEK 6.4 million for the geothermal and solar heat installation was financed via the grant.

KLIMP IN MÖLNDAL

- Number of projects: 9 in total (7 in 2004, 2 in 2008)
- Total funding granted: SEK 5.9 million
- Total environmental investment: SEK 27.1 million
- Reduction in greenhouse gas emissions*: 2,269 tonnes/year
* calculated as carbon dioxide equivalents
The climate investment programmes should combine healthy finances and a positive final result with low energy use and low emissions of greenhouse gases. Part of the programme involves highlighting this to the general public, companies, organisations and those with political responsibility. Public education and information are important elements of Klimp’s work.

Klimp focuses chiefly on physical investments. But that is not always enough. For example, if a new transport solution or recycling project is to have the anticipated environmental effect then it often requires a change in behaviour.

This is where the climate investment programmes provide unique opportunities. The physical investments that are made are an excellent springboard for discussion on how to achieve a sustainable society. Based on these specific changes, communication and information can help improve environmental awareness and increase understanding of the social changes that are needed to tackle the climate issue.

This is why all programmes also include information campaigns and education. Examples of the sorts of measures this could involve include study circles, publications, information campaigns, expanded websites and information at conferences and meetings.

Best practice examples have a knock-on effect

It is possible to search for information on all programmes and projects that have been awarded grants using the web-based Environmental Investment Register, MIR, which can be accessed via the Swedish Environmental Protection Agency’s website.

The Swedish Environmental Protection Agency’s objective is to be able to highlight a tenth of these projects as particularly good examples. Following quality assurance, these projects are marked out. The search function makes it easy to find relevant climate projects and demo installations, gain inspiration and implement similar measures in other locations.

The Swedish Environmental Protection Agency’s website also publishes summaries of some of these best practice examples. This provides other Swedish and international interested parties with a good idea of the latest Swedish environmental technology.

Evaluation

The considerable financial investment in the programmes warrants a similar investment in evaluating their results. A number of evaluations of the local investment programmes, LIP, have already been carried out. Evaluations of Klimp are underway, and several are planned based on various aspects.
The Swedish Environmental Protection Agency is responsible for the government grants to the climate investment programme, Klimp. Between 2003 and 2008, the Swedish parliament granted SEK 1.8 billion in climate investment grants for long-term investments to reduce greenhouse gas emissions throughout Sweden.

This publication aims to highlight Klimp internationally as a tool for achieving the Swedish climate target and involving people at local level. Our ambition has been to give a brief description at an overall level of Klimp as a policy instrument and system, as well as of the results and effects that have been achieved so far.

Do not hesitate to contact us for further information!
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Further reading at:
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