

### About SETatWork

SETatWork assists European industries to gain access to the carbon markets by improving energy performance by offering an information platform and a wide range of activities within training, promotion and matchmaking for industry, technology suppliers and actors in the global Carbon Market. Learn more on [www.SETatWork.eu](http://www.SETatWork.eu)

### Profile

Since 1970 the demand for energy has increased by 7.5 %, from 375 TWh to 403 TWh (Figures 1 and 2). However, over the same period, total energy supply has increased by 36.5 %, from 457 TWh to 624 TWh.

The reason for the supply of energy increasing almost five times more rapidly than the demand for energy is that both the industrial and the residential and service sectors have carried out a major shift away from oil to electricity as the main energy carrier during the period. Although electricity is a very efficient energy carrier as far as users are concerned, it is associated with major losses on the production side, e.g. when produced in nuclear power stations. As a result, much of the conversion losses have been transferred from the end users to the supply side of the energy system.

These losses are not shown as part of the end-users' demand, but as an item in their own right. Losses occur, for example, in electricity production, in the production of district heat and in refineries. By assigning all the losses proportionally to the use of electricity, district heating and oil products in the user sectors, an alternative picture of the development of energy use in the various end-user sectors is obtained.

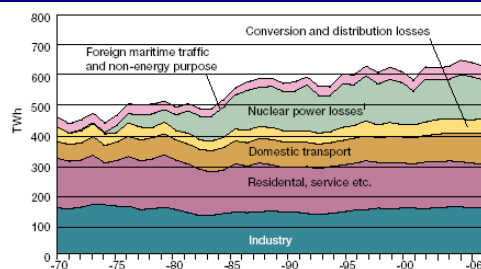


Figure 1: Sweden's total energy use, 1970-2006

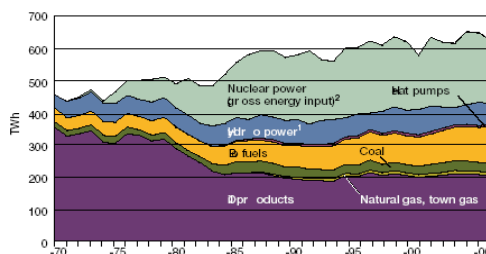


Figure 2: Total energy supply in Sweden, 1970-2006, excluding net electricity exports.

### ETS in industry

In total there are more than 700 installations included in the Swedish NAP 2008-2012. These companies are covered by the European Trading Scheme (ETS). Some of these companies told SETatWork that increasing energy efficiency in existing processes is the most important issue in Sweden. They also indicated that the following are very important:

- Energy efficiency in Industry
- Design in Policy strategy and monitoring
- Company image and marketing
- In-house savings
- Sector benchmarking and assessment tools

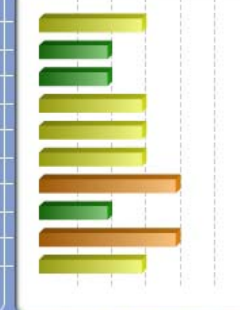
When it comes to technology bioenergy, fuel switching and Industrial CHP are given the highest ranking in Sweden. The pulp and paper industry ranks bioenergy high which could be due to their use of wood as a raw material and because they have bioenergy within their portfolio.

SET@Work arranges meetings with ETS industry to discuss opportunities regarding International projects in developing countries. The projects generate emissions reductions that could be marketed in the industrialized countries in order to reduce their emissions. The investments contribute to a sustainable development in the developing countries.

### SET Priorities: Sweden



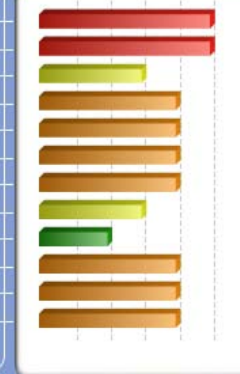
Cement  
Ceramics, Glass, Bricks  
Chemical /Pharmaceutical  
Food Processing  
Mining  
Paper & Pulp  
Power & Heat  
Offshore  
Refineries  
Steel & Iron



V.Low Low Med High V.High  
Priority Level

### Priorities by Industry Sector

Wind Energy  
Biomass and Bioenergy  
Solar Systems  
Polygeneration  
Industrial CHP  
Fuel Switching  
Sustainable Design  
Certified Energy Man. Sys.  
Emissions Trading  
Climate Change & CSR  
Utility Systems  
Process Integration



V.Low Low Med High V.High  
Priority Level

### Priorities by Technology

### Government energy & climate initiatives

Initiatives in the fields of climate and energy from the government in 2008-2010 are being taken in the following areas:

- Climate research (2.3 million Euro)
- Energy efficiency measures (30 million Euro)
- Pilot and demonstration projects for second-generation biofuels (14 million Euro)
- Network for wind power (3.8 million Euro)
- Sustainable yield of bioenergy in agriculture and forestry (3.8 million Euro)
- Climate investments in other countries (9.2 million Euro)
- Programme for sustainable cities (33 million Euro)

SETatWork is supported by the European Commission under the Seventh Framework Programme (FP7). This publication reflects the author's views. Although the author's best efforts have been made to ensure that the information contained herein is accurate, neither the European Commission, the SETatWork Project Members nor the author are liable for any use that may be made of the information contained herein.

## Sustainable Energy Technology Providers

Swedish sustainable energy technology providers that have delivered their technology through CDM-projects from each category are:

- Bioenergy: *Ageratec, Chemrec AB, Consat AB, Läckeby water group, Malmberg AB, Scandinativan Biogas*
- Wind, solar, water energy: *ABB AB, PV Enterprise Sweden AB, Seabased AB*
- Water treatment: *Läckeby water group, Malmberg AB, SWECO AB*
- Sustainable building and housing: *Skanska Teknik, ÅF Group*
- Transports: *Green Cargo AB, Scania AB, Volvo Group*

There are also Swedish CDM/JI project developers such as Tricorona, Green Stream and Vattenfall. Providers of technology can contribute to greenhouse gas emission reductions by identifying projects with possibilities to carbon finance. Selling the carbon credits gives an additional financial support to CDM/JI projects. If a project complies with the rules of the Kyoto Protocol mechanisms, the project owner may receive one carbon credit for every ton of CO<sub>2</sub> equivalent emission reduced by the project. For a project to be able to generate carbon credits the emission reductions have to be real, additional and measurable and the project must contribute to sustainable development.

Please contact:

Marco Berggren at Tricorona AB, Kungsgatan 32, Box 70426, SE-107 25 Stockholm, Sweden, Phone +46 (0)8-506 885 00. E-mail [marco.berggren@tricorona.com](mailto:marco.berggren@tricorona.com)

Verner Jankevics, Swedish Energy Agency, Kungsgatan 43, Box 310, 631 04 Eskilstuna, Sweden, Phone +46 (0)16-544 2347. E-mail [verner.jankevics@energimyndigheten.se](mailto:verner.jankevics@energimyndigheten.se)

## State of the Carbon Market

The total number of emission allowances for existing installations and new entrants in 2008–2012 corresponds to about 22.5 million tons of CO<sub>2</sub> equivalents per year compared to 22.6 million tons per year for period one. The reduction is larger than it would appear from the absolute numbers since more installations will be covered by trading in Period two. The allowed number of reduction units from climate projects outside Sweden's borders per installation has been reduced from 20 per cent to 10 per cent of the total allocation.

Unlike the 2005–2007 trading period, existing installations in the Electricity and District heating sector will not be allocated any emission allowances in the 2008–2012 trading period. This means that existing installations in the combustion installations sector will have to rely entirely on the market to buy emission allowances equivalent to their emissions.

Industrial installations with fuel-related emissions will receive a somewhat reduced allocation compared to period 1, which will be decreased on a *pro rata* basis to achieve the reduction decided. Allocations to new entrants in the EU ETS will not be affected by these reductions.

### SETatWork Contact for SWEDEN: KanEnergi Sweden AB



KanEnergi is an international consultancy company with offices in Göteborg, Karlstad, Skara and Oslo. Working with governmental authorities, private companies and NGOs in industrial developed and developing countries, it strives to support sustainable and rational development of the society, in particular in relation to generation and use of energy. KanEnergi's assignment in this context is to provide return on investment advice based on the principle of sustainability.

KanEnergi's key competence and projects in relation to SETatWork are:

- analysis and co-ordination of the set-up of a centre for businesses relating to environmental technologies in the region of Västra Götaland;
- co-ordination of the CO-OPET contract for Swedish Energy Agency;
- co-ordination of the actions related to workshops, case studies and Annual conference in the ManagEnergy initiative as well in conjunction with the Sustainable Energy Europe Campaign;
- export initiatives in EU-funded projects (like Green Energy Cluster) and trade fair and match-making activities on behalf of Swedish Energy Agency;
- advisory role to companies like Statoil, Norsk Hydro, Nycomb Synergetics, Alstom Power and ABB in market assessments and project developments.
- KanEnergi is responsible for SETatWork match-making activities and the evaluation and strategy work package.

For further information contact:

Pernilla Alexandersson – Email: [pa@kanenergi.se](mailto:pa@kanenergi.se) Tel: +46 733 96 13 39  
KanEnergi Sweden AB, Södra Larmgatan 4, 411 16, Göteborg, Sweden

Details of other partners can be found at: [www.setatwork.eu/partners.htm](http://www.setatwork.eu/partners.htm)

## Good Practice

The Swedish Energy Agency has through its Program For Energy Efficiency In Energy Intensive Industry enabled an electricity saving of 1 TWh per year. By participating in the program companies in the energy intensive industry may get exempted from the electricity tax. Contact Karolina Petersson for further information: [karolina.petersson@energimyndigheten.se](mailto:karolina.petersson@energimyndigheten.se)

Södra Cell, manufacturing paper pulp, has invested in a new evaporation plant thereby improving energy efficiency at the Värö Mill. Through the investment bark with an energy content of 200 GWh/year will become available for sale. Contact Jonas Eriksson for further information: [jonas.eriksson@sodra.se](mailto:jonas.eriksson@sodra.se)

Norrmejeriers dairy in Ersboda has been equipped with a biogas plant making wastewater into an energy source. A heat pump recuperates heat in the wastewater after the biogas plant. The energy intensive process of concentrating whey protein through evaporation has been replaced by ultra-filtration. The project has led to significant energy savings and large reductions in wastewater emissions. The investment is repaid in less than 6 years. Contact Tony Bäckström for further information [tony.backstrom@norrmejerier.se](mailto:tony.backstrom@norrmejerier.se)

Megtech provides technology to produce steam from coal mine ventilation air with a methane content of as little as 0.9%. This is done with a flameless regenerative thermal oxidizer. At a coal mine in New South Wales, Australia, the technology reduces GHG emissions by 250 000 tons of CO<sub>2e</sub> /year. Contact Richard Mattus for further information [rmattus@megtec.se](mailto:rmattus@megtec.se).

## Dates for your diary

In the table below some of the forthcoming events for 2010 are mentioned. Further details can be found in the Events Diary on the SETatWork website:

[www.setatwork.eu/events.htm](http://www.setatwork.eu/events.htm)

Event	Date and Location
International Brokerage Event of Renewable Energy ENEX 2010	3 March 2010 Kielce (Poland)
World Bioenergy, conference & exhibition on Biomass for energy	25-27 May, 2010 Jönköping, Sweden
Methane To Markets Partnership Expo	2-5 March 2010 New Dehli (India)
The Delhi Sustainable Development Summit	5-7 Feb 2010 New Dehli (India)
SETatWork Matchmaking Event in Thailand (CEED)	25-26 Feb 2010 SEA/Thailand
Danske Industri, DI forthcoming event	June/July 2010 Africa
ExpoEnergy 2010 Brokerage Event	5 March 2010 Wels (Austria)
Envietech 2010 Business Lounge	5 February 2010 Vienna (Austria)

Further details of the case studies, businesses and match-making opportunities in Sweden and the other countries covered by SETatWork can also be found online at: [www.SETatWork.eu](http://www.SETatWork.eu)