Climate Star 2009: The Short Track to Climate Protection

In 2009 Climate Alliance has invited all European local authorities to present their climate protection activities and apply for a Climate Star for the forth time. In October 2009 the 15 Climate Star laureates were awarded on invitation of the Regional Authority of Lower Austria at a ceremony in Stift Melk, part of the UNESCO world heritage Wachau. 444 cities and municipalities from 11 countries applied at Climate Alliance for the European award and recorded their local climate protection activities.

Climate Star Awardees 2009:

- Local authorities with more than 100,000 inhabitants: Freiburg im Breisgau (D), Ghent (B), Osnabrück (D) and The Hague (NL)

- Local authorities between 10,000 and 100,000 inhabitants: Lustenau (A), St. Pölten (A) and Ulricehamn (S)

- Local authorities up to 10,000 inhabitants: Dorf an der Pram (A), Gleisdorf (A), Poysdorf (A) and Sand in Taufers (I)

- Associations of local authorities, as districts or boroughs: Association of Local Authorities in Skaraborg (S), the Barcelona Provincial Council (ES) and Kirklees Council (UK)

- Special award: Vienna (A)
Business-driven environmental development

Association of Local Authorities in Skaraborg
Sweden
15 municipalities
250,000 inhabitants

The Association of Local Authorities in Skaraborg wants up to 90% of the public transport system to be powered by renewable energies generated within the region by the year 2020. The Association is responsible for national economic development and places particular emphasis on co-operating with companies active in the fields of agriculture and environmental technologies. The local authorities consider themselves to be role models in the fields of procurement, traffic and energy efficiency.

The Skaraborg association has set itself an ambition target, which also aims to foster new business: by 2020, 90% of the public transport system should be powered by renewable energies, with as much as possible obtained from sources within the region. Biogas buses already operate in several municipalities and biogas is already been used as the fuel at two depots. Furthermore, the municipalities and local companies have announced a tender for 800 cars to a value of 11 million euros, which are later to encourage demand amongst the general population for second-hand biogas cars.

The municipalities and private businesses have invested more than 23 million euros in a new biogas facility to produce biogas. Waste from a slaughterhouse and sewage sludge are used to produce the energy. Within the scope of the Skaraborg Gas project, farmers, investors and researchers have joined forces to consider how production of biogas from arable crops and agricultural waste can be increased. The long-term aim of the Skaraborg Association is renewable energy self-sufficiency for the municipalities.

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Action against climate change at provincial level

Barcelona Provincial Council
Spain
350 municipalities
5,416,400 inhabitants

With the signing of the Declaration of Vilafranca in 2005, cities and municipalities of the Barcelona Provincial Council made a concrete commitment to reducing CO₂ for the first time. In 2007, renewable energy and rational energy usage were promoted to all parties involved in EU project, Res Publica. In addition, an energy forum and an energy programme were established at provincial level. In 2008, climate protection and sustainability were defined as the province's key strategic goals and a Technical Office set up at the Environmental Department.

The Environmental Department of the Barcelona Provincial Council became a support structure of the Covenant of Mayors initiative in 2008, developed a standard method for the development of energy action plans in the municipality and made 1.5 million euros available for the project. To date, 88 cities and municipalities representing more than 80% of the province's population have signed the Covenant. 70 municipalities will have finished drawing up their energy action plans by October 2009 and implemented these.

The EU project Euronet 50/50, which aims at energy savings in schools through responsible behaviour, has just been launched. With the budget of 500 million euros that has already been allocated, the municipal and provincial buildings are to be made more energy efficient and PV systems installed, thereby saving 200,000 tons of CO₂ per year.

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**Energy toolbox**

Dorf an der Pram  
Austria  
1,000 inhabitants

The municipality of Dorf an der Pram intends to switch entirely to renewable energies within the next 30 years. The project Energy Toolbox came into being three years ago. Over 30 highly-committed, like-minded individuals developed a range of concepts within the scope of workshops and implemented these. The general population is kept up-to-date via the municipal newspaper and encouraged to play an active role.

The installation of energy-saving lamps in all public buildings and conversion of street lighting to low-energy usage were the first steps taken. Meanwhile, the newest acquisition is solar street lighting, which will primarily be used on the extension of the footpath network. To encourage more frequent use of energy-saving lights, the mayor distributed a small gift of a light for punctual appearance at board meetings.

The municipality has chosen to focus on photovoltaic systems: five facilities have already been installed, one is on the municipal operations building, one on the mayor's home and two are free-standing repositioned facilities. The next step is provision of an electric fuelling station with nine loading stations from the PV electricity.

In school, children learn how much electricity can be saved through responsible behaviour. As a reward, the money saved is then reinvested in other school campaigns, such as visits to PV facilities in the accompaniment of experts.

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25 years energy building standards

Freiburg im Breisgau
Germany
217,500 inhabitants

A reduction in energy usage and coverage of energy requirements with renewable energies is the aim of this exemplary project. First reduce energy consumption then obtain the remaining energy requirements efficiently and, where possible, from renewable energies, is the approach with which Freiburg has and continues to set a trend in energy building standards throughout Germany. As early as 1992, the city had defined an internal energy standard for the sale of city property (65 kWh heat energy consumption per square metre and year), which also lay 30% below the national Ordinance on Thermal Insulation (Wärmeschutzverordnung, WSVO) implemented three year later. Two new city districts comprising 6,200 homes have been built according to the Freiburg low-energy standards.

In 2002, the Freiburg building standard was brought in line with the new energy saving ordinance and, following discussions with the administration and property developers, quality improvements also undertaken. Continued development of the energy standard to the Freiburg Passive House Standards was agreed within the scope of a one-year dialogue with all involved parties, to be implemented in two stages in 2009 and 2011.

In Freiburg, the energy standards don't only apply for individual pilot project, as is normally the case, but instead for all spaces to which such regulations are applicable. Thus it is anticipated that practically all new homes shall be subject to the new regulations.

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Local climate plan

Ghent
Belgium
230,000 inhabitants

The first climate plan outlining climate protection targets to achieve by 2020 (20% reduction in energy consumption and CO₂ emissions for the entire city, a 60% reduction in CO₂ and 50% more renewable energies for the city administration and street lighting) was set by the city of Ghent in September 2009. The climate plan comprises targets, action plans, grants and an energy agency.

From the beginning of 2007, annual CO₂ monitoring was defined within the climate plan. However, CO₂ emissions are also to be calculated for 1990 and a projection made for a 2050 scenario. The new climate plan with a timeframe until 2050 will be developed on the basis of the CO₂ monitoring with participation from the local population and adopted in 2011. It will comprise target measures to overcome CO₂ bottlenecks. CO₂ compensation will no longer be defined as a standard measure but as a last resort. The climate protection measures will be updated each year and revised in full every three.

Within the scope of the CO₂ monitoring, the city council will report back on progress made in attaining CO₂ neutrality. The target of CO₂ neutrality by 2050 focuses on the motto Addressing the Causes not the Symptoms.

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Living in the solar age

Gleisdorf
Austria
5,400 inhabitants

By 2015, 25% of thermal energy and 100% of electricity requirements are to be obtained from renewable energies.

The municipality of Gleisdorf not only wishes to help protect the environment and practice sustainable management, but also to strengthen the regional economy and reduce dependence on energy from foreign sources. Hence they have set themselves the targets of covering 25% of heat requirements with renewable energies, reducing energy consumption and CO₂ emissions by 20% and obtaining 100% of electricity from renewable sources. In 2007, a thorough evaluation of the situation was undertaken: data was collected about the energy and structural condition of all 1,500 buildings, then analysed and recorded in an electronic land register. The total number of solar collectors and PV systems, energy retrofitting, biomass heating and electric cars that Gleisdorf will need until 2015 was then calculated on this basis.

Gleisdorf has already achieved a great deal: 250 PV systems and 2,750 square metres of solar collectors have already been installed, biomass heaters and a CHP generation plant running with vegetable oil. 50 electric cars are already on the roads and being fuelled in Gleisdorf. Energy management in public buildings is almost considered a given and the implementation status of the entire project is evaluated each year.

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Kirklees Warm Zone
Kirklees
Great Britain
23 districts
401,000 inhabitants

The Kirklees Warm Zone climate protection programme launched in February 2007 is unique: it offers free cavity wall and loft insulation for all suitable homes in Kirklees regardless of the occupants income. Furthermore, many additional services are also offered, such as complimentary energy-saving light bulbs and energy efficiency advice, fire protection inspections and the free loan of carbon monoxide detectors by a network of partner organisations.

Kirklees has made 20 million pounds (around 23.2 million euros) available for the Warm Zone, which is financed by Kirklees and the energy supplier Scottish Power. The aim of the programme is to visit every one of the 172,000 homes in the 23 districts of Kirklees by autumn 2009 - 20 districts had already been visited by the end of May 2009. Those households which have not already done so have until the programme's conclusion in summer 2010 to take advantage of the various services.

By the end of the programme, 171,000 are to have been visited, 135,000 advice sessions held and 53,000 roofs and 20,000 walls insulated. This has created new jobs for more than 150 fitters and assessors, amongst others. More than 10 million pounds in heating costs and around 44,000 tons of CO2 will have been saved by 2010 in all homes. With its investment of 11 million pounds Kirklees city council has achieved an economic benefit of 45 million pounds with these measures.

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**Exceeding the Kyoto targets!**

Lustenau  
Austria  
21,000 inhabitants

A 70% reduction in CO\textsubscript{2} emissions in just five years through retrofitting, heat insulation and conversion to renewable energies!

A great deal has already been achieved in just under four years indeed, the e5 Energy Team only began its work in 2006. To launch the mixed e5 team (comprising municipal administration and private individuals), a discussion took place during which climate protection targets and a list of measures were defined. Retrofitting and heat insulation, the switching of heating systems to renewable energy sources, and the purchase of eco power were established as the key fields of action.

The school buildings first underwent energy retrofitting. In 2007, the heating in the local retirement home and the Hasenfeld school centre was then up for renewal: the heating systems were converted to run on wood pellets. During construction of the Schützengarten retirement home, Lustenau installed a geothermal heat pump, a heat recovery system, and a PV and solar facility. Since 2008, the municipality has also used only eco power for its properties, energy which was generated in part by one of the six municipal PV facilities. Moreover, concrete targets and measures for climate protection activities until 2015 have been identified in six areas including traffic and resident participation.

In March 2009, the decision was reached on construction of a biomass district heating facility. This is now being planned and calculated. Construction of the facility, which is to supply power to the town hall and several private homes, is expected to begin in November with initial operation expected in 2010.

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A research project analysed the roofs of the entire city to establish the solar potential.

Want to know whether your house's roof is suitable for collecting solar energy? Homeowners in Osnabrück are able to learn of the solar potential of their home's roof extremely easily via a city internet portal (www.osnabrueck.de/sun-area). Within the scope of a research project conducted in co-operation with the Osnabrück University of Applied Sciences, the solar potential of the roofs in the entire city were analysed for the first time.

The city then launched the SUN POWER OS consultancy programme that is financed by sponsorship to remove the greatest obstacle to investment for homeowners and to improve the availability of information. In April 2008, around 200 selected homeowners whose roofs were suitable for solar technology were offered complimentary detailed expert consultation from an engineering company. The buildings selected included a good mix of different types of buildings, roof shapes and sizes.

The key aims of the consultation that a total of 66 homeowners ultimately took advantage of were to make use of as much of the roof space with optimal economical solar usage potential as possible, to identify the potential amount of roof space and to remove any technical, economic or other obstacles to roof space usage. Following a second survey in the summer of 2009, the actual activated solar potential was calculated.

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Energy-saving initiative

Poysdorf
Austria
5,600 inhabitants

The municipality of Poysdorf motivates its citizens to behave in an environmentally-friendly manner with an energy model and countless campaigns for cycling, retrofitting and heating.

The Pedalling Poysdorf initiative was launched in May 2008. There has now been a noticeable increase in everyday cycle traffic and several companies also offer company bicycles. Various activities such as a Cyclist of the Month scheme, cyclist homepage, reports in the city news and local newspapers, spring bicycle repair services, bicycle computer campaign to measure mileage, bicycle stands at bus stops and campaigns in schools as well as new cycle paths off the city's streets have all played a part.

In January 2009, the Energy-Saving Initiative began running expert presentations about energy retrofitting, alternative heating, financial support and passive houses, amongst other topics. An energy group with regular meetings was founded. Cycle rides lead to passive houses, PV systems and energy-optimised old builds. Furthermore, there is an energy consultancy day and thermography images are prepared for interested city inhabitants.

In March 2009, the Energiespargemeinde Poysdorf (Poysdorf Energy-Saving Municipality) scheme was established and a municipal energy mission statement prepared. Energy days are to take place in all of the cadastral communities in autumn to motivate the local population. Energy accounting in the fields of lighting, electricity and cars is planned for the municipality. The purchase of electric cars has already been budgeted.

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Energy municipality

Sand in Taufers / Campo Tures
Italy
5,200 inhabitants

Sand in Taufers / Campo Tures wishes to become an energy centre that sets a good example and has therefore developed a comprehensive energy concept. Since 2006, the heat and energy consumption of all public buildings has been recorded and analysed. This measure alone has allowed for a saving of 15% to be made. The municipality acquired an electric bus in 2007 for the local public transport system and converted the municipal car fleet to gas. The Hiking without car and Mobile Sand in Taufers programmes help to encourage the use of environmentally-friendly modes of transport. In 2009, the Taufers Energy and Innovation Centre (Zentrum für Energie und Innovation Taufers, Z.EN.I.T.) was established as an information, consultancy and education centre.

Renewable energy sources are being developed: there is a wind power station, a biogas facility powered by organic waste, a gas grid, a wood-powered district heating plant, a new hydroelectric plant, a PV system on the sports centre and 33 private PV facilities, street lighting with PV and, since the beginning of this year, a carbonation plant for organic waste.

Building and retrofitting are of course also important: since 2007, it has been written into the municipal building regulations that all new public buildings must meet Climate House A standard (< 30 kWh/m²a) and all private buildings and refurbished buildings must meet the B standard (< 50 kWh/m²a). Consultancy packages for local residents on energy refurbishment with thermography, climate house calculations and building supervision as well as a 2009 20 roof programme complete the comprehensive municipal programme.

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District heating NEW

St. Pölten
Austria
51,500 inhabitants

Around half of all companies and households in the Lower Austrian town of St. Pölten have already been connected to the district heating network. Some 6,000 customers housed in 950 buildings are provided with thermal energy via the 70 km long network. To date, both of the district heating plants have been run on natural gas however this is soon to change: the city has called the District Heating New project into life with the aim of securing the supply, i.e.: with no dependence on natural gas or heating oil.

The new source of thermal energy is waste heat from CHP plants of the Energieversorgung Niederösterreich (EVN, Energy Supply Lower Austria) in Zwentendorf-Dürnrohr. Household waste is incinerated in one of these. The longest stretch of district heating pipeline in Austria totalling 31 km in length was built to use the heat in St. Pölten. Despite this, the projected heat loss is only marginal, with a fall in the flow temperature from 140°C to 138°C. A total of 35 million euros have been invested in the project.

Operations are to begin at the start of the 2009/2010 heating period. Approximately 200 gigawatt hours of thermal energy shall then be delivered via the pipeline each year. This means around two thirds of the district heating will be provided by the region and savings of around 21 million cubic metres of natural gas and 40,000 tons of CO₂ each year. Moreover, a new district heating concept with the foci of supply security and climate protection is currently being developed and is due to be completed by the end of 2009.

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Seawater power station for Duindorp

The Hague
Netherlands
475,000 inhabitants

Around 800 homes in The Hague have been heated with seawater since January 2009. The combined heat and power (CHP) station, which draws heat energy from the waters of the North Sea, is the first of its kind in Europe.

Duindorp is a sub-district of the district of Scheveningen in The Hague located directly on the dunes beside the sea. Intensive refurbishment work is being undertaken in this area; almost 800 homes are currently being refurbished or built - and since January 2009, all are being heated with energy obtained from seawater.

In the seawater thermal power plant in Scheveningen Harbour, the heat energy is drawn from the seawater into a heat exchanger and then sent through a supply network with a temperature of 11°C. During the winter, when the average temperature of the North Sea's waters falls to just 4°C, a central heat pump is used to increase the temperature. A small heat pump has been installed in each home, which brings the water to the desired temperature (45°C for heating, 55°C to 65°C for warm water) and delivers it via underfloor heating. During the summer, cold water is delivered via the same system, which helps keep homes pleasantly cool. This system requires half the amount of energy to maintain the correct temperature in the homes than central heating in individual homes. The seawater thermal power plant draws its energy from wind power.

Thus renewable energies are used in Duindorp to generate even more renewable energy. The system reduces CO₂ emissions by approximately 50% in comparison to average new buildings.

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The sustainable city

Ulricehamn
Sweden
22,600 inhabitants

The development and funding of various cooperations both within the city and also beyond the city boundaries with businesses and the local population form the core of the process-oriented sustainable city approach.

The city of Ulricehamn launched the process in 2003 with businesses and Linköping University. Together they analysed the energy consumption of individual companies. Up to 50% of consumption could be saved mainly at marginal investment costs! The researchers used a simple yet effective method, which is now also being used by the energy consultants and allowed all businesses to reduce their energy consumption or to increase production whilst keeping consumption constant.

In 2004, the subject of city planning was revised using new methods in co-operation with the Luleå University of Technology. This allowed for strategic decisions between various sustainability scenarios to be reached. A more comprehensive plan of action was prepared and implemented: the new kindergarten was built in a low-energy house design and PV systems already produce between 13,000 and 15,000 kilowatt hours of electricity per year. A second plan has just been developed using a method, which will make involvement of the local population far easier.

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Climate protection programme

Vienna
Austria
1,680,000 inhabitants

The climate protection programme of the city of Vienna (Klimaschutzprogramm, KliP) was launched in 1999, shall run until 2010 and comprises 36 programmes featuring over 200 measures. KliP combines a reduction in greenhouse gases with improvements to the quality of life, creation of jobs and strengthening of the business centre of Vienna.

Implementation of KliP is evaluated externally; for the period from 1999 until 2007, this was conducted by the Austrian Energy Agency. Following this, more than 100 measures were realised in the five spheres of activity of district heating and energy generation, mobility, city administration, habitation and business. Thus it was possible to save the equivalent of 2.9 million tons of CO₂ per year by the end of 2007, meaning that the target value of 2.6 million tons by 2010 has already been exceeded. The investments totalling 10 billion euros made by KliP have resulted in added value of 22 billion euros. Furthermore, KliP has secured around 55,000 jobs, this constitutes almost 7% of all employees in Vienna.

Vienna now has the lowest CO₂ emissions per head in Austria and is sure to reduce this even further with their climate protection programme.

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