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ECOBUILDINGS: IMPROVED ENERGY USE IN NEW BUILDINGS AND RETROFITTING OF OLD ONES

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Focus on passive housing and energy efficient buildings in Southeast Sweden

Bringing people together

Passive housing is the way to go and a top priority in the Southeast of Sweden! The Energy Agency for Southeast Sweden (Energikontor Sydost) attracted a lot of interest when it brought together municipalities, housing companies, contractors and other interested stakeholders to discuss passive housing and energy efficient buildings. "This is a hot topic - climate change, the demands from the EU, the Swedish energy efficiency investigation, and last but not least the financial crisis, lead to more and more talk about energy efficiency in both new and existing settlements", says Stefan Olsson from the Energy Agency for Southeast Sweden, at the event which took place on 19 November 2008.



Passive houses are very well insulated buildings that require minimal levels of energy and help to generate this through different means, such as using human body heat and heat from appliances to heat indoor space, or using clever daylighting strategies for efficient lighting (reducing the need for artificial lights). Further renewable energy applications are used to generate electricity through photovoltaic panels and domestic hot water through solar thermal systems. A passive house uses around half the total energy consumption, including household electricity, compared to current Swedish building standards.

All the experts attending agreed that energy efficiency pays off in the short term, and it will happen even faster as energy prices continue to rise. The tenants welcome a change in the approach to energy. Neither the Hyresbostäder nor the Finnvedsbostäder municipal housing companies in Växjö and Värnamo have encountered any negative response from tenants when they introduced individual measurements for hot water and heating. "Tenants like to be able to affect their energy use and thus their costs", stated Erik Hallonsten from the municipal housing company in Växjö, "... we just have to be vigilant that the residents do not increase their consumption of electricity when it costs less to heat the apartment". Per Andersson from the Northern Älvstranden Development AB added: "We may see a slight tendency that some people choose to use their electricity for other things."

Less than 40 kWh per square meters

The construction of the massive wooden eight-floor residential buildings in Växjö, using passive housing technology, was in full swing when the participants visited the site. These buildings are part of the SESAC project, where the Energy Agency for Southeast Sweden is involved as a technical coordinator, and has assisted Hyresbostäder with energy expertise.

Eric Hallonsten shared details, highlighting the unique approach to build passive houses in this height from wood – a very popular project for prospective buyers. The buildings will use waste water heat to preheat the domestic hot water, and so further reduce energy use. Furthermore, a photovoltaic (PV) plant will be installed on the roof to produce electricity for direct use in the apartments. This represents approximately 10–15% of the electricity consumption in the buildings. Hyresbostäder expects that these passive houses will use less than 40 kilowatt hour (kWh) per square meter per year (m²/a) for hot water and space heating. "On the first day of the initial announcement people were already showing their interest for half of the 62 planned apartments", said Erik Hallonsten.

People for passive houses

Skills in planning, constructing and using energy efficient buildings are now in focus. Informed building buyers and users, trained building managers and good customer care is needed to make many more energy efficient building projects a reality. "To build the purchasing competence of a building commissioner, to have clear requirements and follow-up on the orders are very important", says Per Andersson.



Networking and exchange is another key element. With the aim to encourage the development of energy efficient buildings, regional actors have joined together in a network called 'Energy Efficient Buildings in the Southeast', including Växjö University, Kraftindustrins Vindkraftsbolag (VKAB) and the Energy Agency for Southeast Sweden. They have presented a proposal at Växjö University in January 2009 to address the renovation of existing buildings. The network aims at technically and financially supporting a professorship and research team at Växjö University. In collaboration with ALMI Kronoberg, the Energy Agency for Southeast Sweden organised a trip to the Clean Energy Power (CEP) exhibition in Stuttgart earlier this year, to view the latest developments in renewable energy and sustainable energy efficient buildings (www.cep-expo.de).

For more information on these initiatives, please contact Stefan Olsson: stefan.olsson@energikontorsydost.se

In Delft (NL) Housing Corporation Woonbron helps tenants with energy efficient behaviour

Before the end of this year the first tenants will move into their renovated apartments in the Poptahof. This is one of the projects in the SESAC project, which has improved energy efficiency of existing building stock as its main goal. The Housing Corporation Woonbron is very proud of the way the district is being renovated. Energy efficiency has been applied in designing the district as well as the residential buildings.

The third phase will focus on stimulating energy efficient behaviour among the tenants. Woonbron believes that energy behavior should be on the agenda of the tenants, and is trying to

achieve this in several ways. When tenants inhabit their new home, they will receive a brochure showing all the energy efficient measures that have been applied in the building process. Information and tips will be provided to show how they can behave in a more energy efficient way – learning that this will be good for the environment, but also for their pockets. Saving money remains a good incentive to change.

A feedback system will be set up as a communication aid for the tenants. It will show exactly what energy has been used and the cost thereof. The feedback system is one of the tools planned in the SESAC project, as an important element to improve energy users' awareness of their energy choices.



Photo: Renovation project Poptahof, Delft

Developing a PV Shopping Mall in De Bonne, Grenoble



As part of the De Bonne urban area project in Grenoble, the city is developing a photovoltaic (PV) plant of approximately 1000 m² on a shopping mall providing about 100 Kilowatt-peak (kWp). This project will architecturally integrate PV in two ways, namely using a semi-transparent glass roof made of PV panels (as a roof, providing shading and allowing daylight through), as well as PV modules installed on the roof. The image below shows an artistic view of this planned shopping mall.

The feasibility study has been completed, and with some initial delays, the work is due to start in October 2009, with the opening scheduled for early 2010.

Lessons learned in this planning phase of the project include the following:

- ▶ Standardised PV products are still not easily available for full building integration on the French market. There are no PV glass-roof products available with a technical certification from the French CSTB (Centre Scientifique et Technique du Bâtiment). This creates difficulties in terms of potential risks, implementation in public buildings and insurance contracting, and has an impact on the project cost, quotes for offers and the overall technical proposal, which vary widely from supplier to supplier – as these are so-called "non-standard" products.



- ▶ French regulation on the PV market is changing periodically, which impacts on projects. A new feed-in tariff was implemented in June 2006, yet uncertainties remain on the "building integrated PV"-eligibility criteria (guide issued last March 07), and a new additional feed-in tariff has just been announced in November 2008. Again there remain major uncertainties concerning the conditions of implementation.

- ▶ With this "new" technology, it is complicated to work with architects and promoters who are not yet familiar with the technology, the specifications and framework in which PV can be applied.

For more information on this PV Shopping Mall project please contact Perrine Flouret: perrine.flouret@ville-grenoble.fr

Kaunas: The challenge to renovate old apartment buildings in Lithuania



As is the case in all of Lithuania, the City of Kaunas needs to deal with old-fashioned, obsolete and ineffective energy use in multi-family apartment buildings dating back to the Soviet era. To address this problem, a national strategy for renovation of apartment houses has been approved by the Government of Lithuania on 21 January 2004.

According to this Strategy, two main goals need to be reached by 2020:

- ▶ Modernisation of at least 70 % of apartment houses:
- ▶ Decreasing energy consumption of heating in the houses by 30%.

Kaunas is observing progress made in building construction and renovation projects in the three SESAC cities, learning from planning and implementation processes to apply lessons learned at home, in support of the national strategy and to support citizens who are faced with increasing energy costs.

1st Market Interaction Roundtable - experts identify core issues to ease financing of sustainable energy solutions

The current financial crisis has an impact on local governments, as well on other sectors of the society. It can either be seen from a negative perspective, i.e. all action is blocked, or it can be used as an opportunity to roll out sustainable energy concepts faster and more efficiently, thereby reducing the environmental impact of energy use and saving money over the medium to long term. Ideally this would also mean integrating sustainable energy concepts into urban strategies and improving ethical financing concepts for projects – generally supporting the transition towards a low carbon economy.

Addressing the more positive approach, several excellent results were gained from the 1st SESAC Market Interaction Roundtable on the topic 'Access to Capital - Financing sustainable energy solutions'. This was organised as a side event to the Local Renewables Freiburg Conference 2009 (www.iclei-europe.org/freiburg2009) earlier this year. Energy and financing experts shared their views on how to ease access to financing solutions for energy efficiency (EE) and renewable energy (RE) solutions planned by local governments. Cooperation options in providing sustainable energy products and services were explored, as were barriers and potentials of working with the business sector.

The primary conclusion was that information is still the main challenge. Information on the needs and approaches from all sides – local governments, banks, companies - remain unclear for the other actors, and a huge effort is needed to improve awareness and the flow of information. An information clearing house could be a solution to this, but there is also a need for improved policy and regulations at European and national level (e.g. implementing stricter energy efficiency standards in all buildings) that 'force' action, and practical financing solutions need to be connected to this to support roll-out at local level. To encourage the faster roll-out of sustainable energy solutions across Europe, a more focused and combined effort is needed, involving banks and other financing institutions - sparking their interest. The idea to cluster smaller projects to make projects bankable was highlighted as a potential solution. Recent developments regarding ELENA (European Local Energy Assistance) offered by the European Investment Bank, reflect a practical development towards addressing some of these needs.

Building the future through sustainable energy systems

Projects magazine' (www.projects.eu.com) has published earlier this year a valuable publication on the SESAC project. Based on interviews with the project partners Torun Israelsson and Stefan Olsson (Växjö), Kees Kruijff (Delft) and Laurent Gaillard (Grenoble), the article reflects how the three SESAC cities respond to the threat of climate change by the project implementation and assessment of new innovative sustainable energy systems and solutions.

This publication outlines concrete measures in the field of energy efficiency, renewable energy, and also highlights the importance of consumer behaviour. If you are interested in reading the entire article, please [download it here](#).

News snippets

Covenant of Mayors: Sustainable Energy Action Plan template & instructions now online!

The **Covenant of Mayors** is the **most important and ambitious EU initiative** engaging signatory local authorities to go beyond the EU's energy and climate goals and curb their CO2 emissions by at least 20% by 2020 via energy efficiency and renewable energy actions.



Within the year following adhesion to the Covenant, the signatories submit their **Sustainable Energy Action Plans (SEAPs)** describing how they intend to reach the objectives.

Since the Covenant commitments concern the whole geographical area of the city/town/region, the SEAP should include actions concerning both the public and private sectors in the city.



Energie-Cités (the Association of European local authorities promoting sustainable energy policies) has been chosen by the European Commission to lead the Covenant of Mayors Office together with CEMR, Climate Alliance, Eurocities, Fedarene and Pracsis.

On 13th August 2009, the Covenant of Mayors Office released a Sustainable Energy Action Plan (SEAP) template and instructions, which were developed together with the Joint Research Centre (JRC) of the European Commission. This is the first step in providing practical guidance to the Covenant Signatories. **The SEAP template and instructions help the Covenant signatories to structure their actions and measures, and to follow up implementation.**



At the same time the template is a valuable tool for collecting key information from the Sustainable Energy Action Plans, and thus encouraging local authorities to go beyond the EU energy & climate objectives, exchange their experiences, etc.

Highlights of local authorities' actions will be shortly made available on-line at the [Covenant of Mayors website](#).

ELENA - developing bankable investment projects

ELENA (European Local Energy Assistance) is a **technical assistance facility to be launched in November 2009 by the European Commission, in cooperation with the European Investment Bank (EIB). It will target local authorities and is designed to provide them financing** for the development of bankable investment projects or programmes in the area of sustainable energy. It also aims to ensure the eligibility of the supported investment projects or programmes for further EIB funding.



Sustainable energy projects eligible under ELENA can focus on a variety of sectors, such as retrofitting of public and private buildings, low energy buildings, energy-efficient district heating

and cooling networks, or environmentally-friendly transport. The key condition for eligibility is that projects contribute to the achievement of the CO2 reduction objectives fixed in the Covenant of Mayors. Further information will be available on www.eumayors.eu.

Call for input into European Local Government Positioning

All European communities have the chance to engage in the European and international climate and energy debate. The **project LG Action** provides a unique opportunity to cities to engage in current developments, share their positions, and mobilise – together we are powerful! “Networking action to involve Local Governments in the EU and international energy and climate debate” (LG Action) is an IEE co-funded project aimed at mobilising local government to engage in local climate and energy action. The call for input prior to the COP 15 is an open invitation to all European local governments (LGs) and their associations. This can include views, needs and challenges regarding energy and climate protection at the local level. What works well? What is blocking action? Are there country-specific problems? Does your community have adequate resources to tackle climate change? Provide the project team with items, facts and figures that can be used to shape the LG Positions prior to the COP 15, as well as afterwards, where more detailed positions will be compiled, based on input received. The results will help to shape the policy debate, also linking to the Covenant of Mayors and other European sustainable energy initiatives.



An online questionnaire is available on www.lg-action.eu - 'Share your needs' section. For further information contact [Maryke van Staden and Carsten Rothballer at ICLEI Europe](#)

Add your community's climate commitments to 'The City Climate Catalogue'

Communities around the globe are invited to share their climate and energy targets – and help develop a strong argument for the **COP 15**. In **December 2009** the 15th Conference of the Parties (COP 15) will take place in **Copenhagen**, to take a decision on an international post-2012 climate agreement.



The [City Climate Catalogue](#) will be used by the City of Copenhagen, ICLEI and the [Local Government Climate Roadmap](#) partners to draw attention to the importance of local governments and local climate action. It will help to emphasise the need for national governments to empower local governments to act. Add your community data and help to send a strong message to the United Nations and other key actors.

The Interactive CONCERTO Communities Map

The CONCERTO Initiative recently published an Interactive CONCERTO Communities Map on their website, which gives information on all communities and their energy projects, co-funded through the CONCERTO Initiative. 45 CONCERTO-communities are represented in 18 projects, each working to deliver the highest possible level of self-supply of energy.

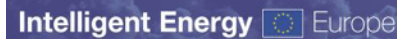


CONCERTO is part of the framework research programme supervised by the DG Energy and Transport of the European Commission. It is a Europe-wide initiative proactively addressing the challenges of creating a more sustainable future for Europe's energy needs.

For further information contact: [Monika Derecque Pois](#). The map can be viewed [here](#).

Explore the EACI project database

Another useful resource is the EACI project database. The Executive Agency for Competitiveness and Innovation (EACI), manages the IEE Programme on behalf of the European Commission, and provides an online database with summaries of all current projects funded under the IEE listed.



It is easy to navigate, and one can also find projects on different funding streams, such as ALTENER, SAVE, STEER, COOPENER and Integrated Initiatives. The database can be accessed [here](#).

Energy Performance of Public Buildings - New Display video

The European Display® Campaign is a voluntary scheme designed by energy experts from 20 European towns and cities. It is aimed at encouraging local authorities to publicly display the energy and environmental performances of their public buildings using the same energy label that is used for household appliances.



The idea is to engage citizens and make them more conscious of their energy consumption in order to reduce energy use and greenhouse gas emissions and achieve financial savings.

The Display Campaign is funded by the European Commission (TREN) under the Intelligent Energy - Europe Programme.

5 minutes to find out everything you need to know about the [European Display Campaign!](#)

Subtitles are available in French, English, German, Spanish, Ukrainian, Lithuanian, Slovenian, Finnish, Czech, Italian and Portuguese!

IEE co-funded project Sustainable NOW develops instruments for sustainable energy communities

The Intelligent Energy Europe (IEE) co-funded project 'European Sustainable Energy Communities - effective Integrated Local Energy Action today' (Sustainable NOW), running from September 2008 until 2011, is going into a phase where results are becoming available. The focus is on improving capacity to act in the field of sustainable energy, from a climate protection, community resilience, and energy security perspective.



Local climate and energy action is complex and requires the involvement of many stakeholders. In addition to the Sustainable NOW newsletters, a range of tools under development include: an instruments database where resources will be centralised specifically for local governments and energy, capacity development workshops, and a Local Energy Action Plan (LEAP) wizard to help decision-making at community level.

ICLEI leads a consortium of 15 partners and more details are available on the project [website](#) or through contacting the [coordinator](#).

Events

European Conference for the promotion of Local actions to combat Climate Change

Date: 23-25 September 2009
Place: Huelva, Spain
Web: www.laccc.es/index.php?lang=en

5th Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems

Date: 30 September-3 October 2009
Place: Dubrovnik, Croatia
Web: www.sdewes.fsb.hr

6th European Conference on Green Power Marketing 2009 – The future of green power – Achieving an energy revolution in challenging time

Date: 1-2 October 2009
Place: Geneva, Switzerland
Web: www.greenpowermarketing.org

Open Days - European Week of Regions and Cities - Global Challenges, European Responses

Date: 5-8 October 2009
Place: Brussels, Belgium
Web: www.opendays.europa.eu

North European Renewable Conference

Date: 7-8 October 2009
Place: Oslo, Norway
Web: www.messe.no/en/ntf/Projects/NEREC

Procura+ Seminar and Participants Meeting 2009 - Tackling Climate Change through Sustainable Procurement

Date: 22-23 October 2009
Place: Zurich, Switzerland
Web: www.procuraplus.org/zurich

3rd European Renewable Energy Policy Conference

Date: 16-17 November 2009
Place: Brussels, Belgium
Web: www.erec.org/policyconference2009

Hamburg City Climate Conference - First Annual Conference of the Covenant of Mayors

Date: 16-18 November 2009
Place: Hamburg, Germany
Web: www.city-climate-conference.de

CPH CO2009 - The Copenhagen Climate Exchange 2009

Date: 3-6 December 2009
Place: Copenhagen, Denmark
Web: www.cphco2009.dk

15th Conference of the Parties to the UNFCCC (COP 15))

Date: 7-18 December 2009
Place: Copenhagen, Denmark
Web: <http://en.cop15.dk>

Local Government Climate LOUNGE at COP 15

Date: 7-18 December 2009
Place: Copenhagen, Denmark
Web: www.iclei.org/climate-roadmap

The Copenhagen Climate Summit for Mayors - Cities Act!

Date: 14-17 December 2009
Place: Copenhagen, Denmark
Web: www.climatesummitformayors.dk

15th Conference of the Parties to the UNFCCC (COP 15))

Date: 7-18 December 2009
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Web: <http://en.cop15.dk>

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Energie-Cités' Annual Rendezvous

Date: 28-30 April 2010
Place: Salerno, Italy
Web: www.energie-cites.eu

10th REHVA World Congress – Sustainable energy use in buildings

Date: 9-12 May 2010
Place: Antalya, Turkey
Web: www.clima2010.org

6th European Conference on Sustainable Cities and Towns

Date: 19-21 May 2010

Place: Dunkirk, France

Web: www.dunkerque2010.org

1st World Congress on Cities and Adaptation to Climate Change

Date: 28-30 May 2010

Place: Bonn, Germany

Web: www.iclei.org/bonn2010

We invite your comments on the newsletter.

Do you have articles or events of interest relevant to sustainable energy systems in advanced systems or to climate protection? Please pass these on to [ICLEI](#) or to [Energie-Cites](#)

Other projects:

For further information on the CONCERTO initiative and other CONCERTO projects, please visit the CONCERTO homepage

www.concertoplus.eu.

Contacts:

- Newsletter Editors: [ICLEI](#) - www.iclei-europe.org - Local Governments for Sustainability, Climate & Air Team and [Energie-Cites](#) - www.energie-cites.eu - The association of European local authorities promoting a local sustainable energy policy.

- Project Coordinator: City of Vaxjo, Sweden - Torun Israelsson, torun.israelsson@kommun.vaxjo.se, Manager of International Projects

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