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**03 Imprint**



**Impressions of the latest project meeting in Varberg, Sweden**



## 01 news from within the project

### Talks on energy savings and business models in Varberg (SE)

*The North Sea-SEP partners gathered for three days presenting results and discussing the projects' lasting contribution.*

From 7<sup>th</sup> to 9<sup>th</sup> of February the North Sea - SEP partnership gathered in Varberg to discuss roadmaps and successful business models. Presentations were given on results of the project and local examples showcased the benefits of cooperation.

The focus of the seminars was cooperation between private companies and the municipality in terms of production of renewable energy and energy efficiency. Seminars were held by Varberg Energi, the municipality owned energy company responsible for the supply of both electricity and district heating, Södra Cell Värö bruk, a paper pulp mill that delivers waste heat to the district heating network as well as producing electricity from renewable sources and selling biofuel. Varbergs Bostad is the municipality's public housing company that for the last fifteen years have worked methodically with energy efficiency and finally a seminar by Elektro Emanuel, a consultancy company helping other companies with their energy efficiency.

Jürgen Knies from Jade University of Applied Sciences Oldenburg (DE) presented the last part of the co-operative work with the Energy Agency of Southeast Sweden: Using GIS tools for the planning of renewable energy.

Femke Adriaens from the municipality of Tynarlool (NL) gave an overview on business models in the context of sustainable energy planning. Chris Ashe presented Dundee College's work with the EnergyTrail, an interactive game platform where pupils may take the challenges to raise energy efficiency in their schools and homes and in addition learn a thing or two about energy saving.



An interested audience is following the presentations

The partners also got to visit the energy company Vattenfall at their nuclear power plant Ringhals, to get another view of the energy situation in northern Europe both present and in the future. A little bit more than one third of Sweden's energy use comes from nuclear power today. A visit was also made to A-hus Professional, who makes pre-fabricated low-energy houses.

Contact:  
Anja Nilsson Campus Varberg  
[Anja.Nilsson@campus.varberg.se](mailto:Anja.Nilsson@campus.varberg.se)



## Dundee Open Days (UK)

*As part of the EU Open Days series of events being hosted across Europe in autumn 2011, Dundee College and the University of Dundee hosted a thought provoking and stimulating half day conference on Friday 18<sup>th</sup> November.*

The conference was supported through the transnational North Sea-SEP initiative in which Dundee College is a major partner.



Chris Ashe

High profile speakers from Scotland, Belgium and Germany joined David Sigsworth, Chair of the Scottish Environment Protection Agency to present a lively program of talks and discussions presenting the visions and challenges surrounding the transition to a renewable energy powered Europe. Over 70 delegates from across Europe heard perspectives from industry, academia, the skills sector, the European Commission and government (local, regional and European) and engaged in a lively discussion session with speakers.

Conclusions from the conference suggest that the renewable energy sector in Scotland and Europe is at a stage that is ready to push forward towards meeting targets however technical, economic and political barriers must be overcome in the very near future otherwise opportunity will be lost. There is much willingness to learn from experiences between member states and to co-operate to develop solutions to some of the common challenges to transitioning to a renewable energy based economy. A clear lead from government at all levels is necessary to remove some of the institutional barriers and to demonstrate leadership to citizens to empower the necessary changes.

The conference ended with a networking lunch and an opportunity to meet with partners of the North Sea - SEP project as well as European delegates from other synergistic projects as part of a knowledge transfer experience. The focus was on planning together and co-operation across Europe to deliver a sustainable and prosperous future for all.

Contact:  
Chris Ashe  
[c.ashe@dundeecollege.ac.uk](mailto:c.ashe@dundeecollege.ac.uk)



## Municipal Energy Management (DE)

*How can communities become more energy efficient and save energy?*

How can the 11,000 German communities become more energy efficient? This question can not be answered only with proposals for technical solutions or a manual. The council members, the mayor and the municipal employees need convincing arguments in the first place. These "arguments" can be divided into the following categories:

1. Information
2. Legal requirements (Eco design directive or Energy Performance of Building Directive)
3. Financial incentives (funding programs)
4. Good examples of cost savings

*Municipal Energy Management - Cost savings through low and non-investitive measures*

The "argument" cost savings is especially true in municipal energy management. The energy saving potential of measures, that require no or low investments in public buildings vary between 10 to 20%. This savings are still unused in many communities. Although a municipality with 20,000 inhabitants has annual energy costs of about 1 million Euro. A saving of only 10% in this case corresponds to annual savings of about 100,000 Euro. These savings can apparently be achieved without major investments, but that requires suitably qualified staff, which keeps an eye on the operation of their own technical systems. Before spending a lot of money on expensive measures to improve energy efficiency, low or non-investitive measures should be taken first.

*Training on municipal energy management*

To use these savings in the communities and to provide good examples for other

communities, the projects North Sea - SEP and "Climate Change and Local Authorities" (both run by the U.A.N.) launched a training program for 10 municipal energy managers in Lower Saxony.

*Budgetary savings through energy management*

The training program consists of six seminars and four on-site monitoring in the communities held by experienced engineers. Together with the engineers the participants identify public buildings with energy savings potential in the non-and low-investing area. Even in communities that have a supposedly good energy management, engineers may find unnecessary energy hogs on site in public buildings. Thus, for example they noticed that the heating system of a "new" kindergarten of 1995 was dimensioned too huge and was not regulated well, it also worked during the summer. The flow temperatures are often set too high and the outside temperature sensors are often not or wrongly connected.



Non-insulated pipes in a heating system are responsible for massive heat losses



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Under sinks, electrical water heaters have been found, which produce hot water all day long and on all 365 days of the year, no matter if it is used or not. The list of hidden energy guzzlers is very long. Only through an accurate inspection, installation of switches, the setting of the heater control and similar measures seemingly banal significant amounts of energy can be saved.



Regularly recording of meter readings is the first step in energy controlling

Energy controlling in public buildings is economically very profitable and it shows that climate change has been taken seriously by the community, and is not just limited to publicly visible measures such as the installation of a solar system.

Municipal energy management gives an overview of the administrations energy consumption and costs as well as a technically basis for decision making for future investment. The energy management is an ongoing municipal task, and a step towards improved energy efficiency.

Contact:  
Wiebke Abeling  
[abeling@uan.de](mailto:abeling@uan.de)



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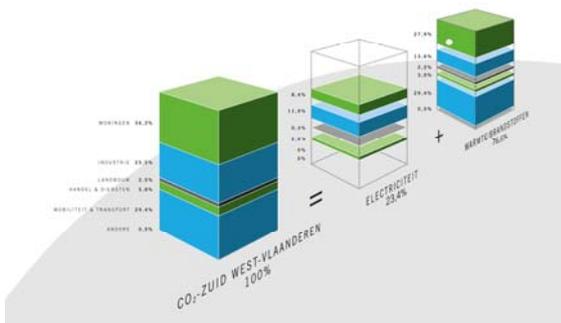


## The regional carbon emission monitor (BE)

*Leiedal (North Sea – SEP project partner) set up an instrument to monitor the carbon emissions of the 13 cities and municipalities in the Kortrijk region (BE). The first results were presented by Leiedal on January 31<sup>st</sup>, 2012. CO<sub>2</sub> monitoring is an excellent indicator for energy consumption, energy efficiency and renewable energy mapping.*

South West Flanders annually consumes about 6.3 billion kWh of energy. Energy consumption is responsible for most of our CO<sub>2</sub> emissions: from the combustion of fuels in vehicles, for heating, for electricity production etc. South West Flanders annually emits 2 million tons of CO<sub>2</sub>.

That is a total of 7.1 tons per capita. See the picture:



All South West Flemish municipalities are doing a lot better than the Flemish average. The explanation is that we host less energy-intensive industry (steel industry, petro chemistry).

But the challenge is not less significant: The houses are on average worse insulated. That also applies to new construction. The

monitor is not a report that says whether a municipality is doing well or not. It outlines the state of affairs, showing the status quo, the bottlenecks and provides new insights. The CO<sub>2</sub> emission is not easy to steer. Within a few years after the baseline other measurement will and have to follow. It will show us whether we are moving in the right direction or not.

### *A municipal CO<sub>2</sub> monitor?*

Leiedal's CO<sub>2</sub> monitor also allows calculating the footprint of the local government. What are the emissions from municipal buildings, public lighting, service relocations, and the waste? What is the positive impact of solar panels, wood pellet, etc?

### *Fine tuning*

The figures are calculated on the basis of 2009 emissions by energy consultancy 3E that will after a few years be measured again. The CO<sub>2</sub> monitor is further refined so that other greenhouse gases will be charged as CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>. These gases will be calculated in CO<sub>2</sub> equivalents.

The CO<sub>2</sub> monitor was made within the North Sea-SEP project and is downloadable from the website.

Contact:  
Dominiek Vandewiele  
[Dominiek.Vandewiele@leiedal.be](mailto:Dominiek.Vandewiele@leiedal.be)

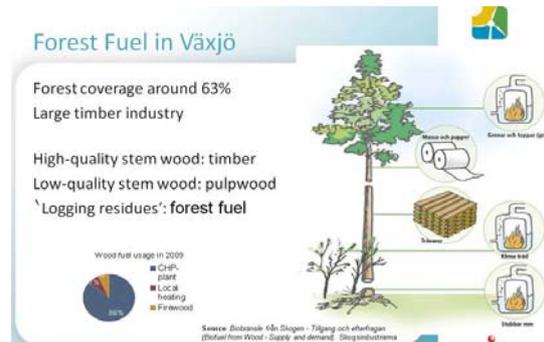


## A GIS-model to estimate the sustainable potential for forest fuel for energy generation in the municipality of Växjö (SE)

*The results of the study were presented in Varberg (SE) as part of a project meeting (07<sup>th</sup> – 09<sup>th</sup> February, 2012). Furthermore, the study was presented in Freising at the conference of the Society for computer science in agriculture, forestry and food (focus: forestry) from 29<sup>th</sup> February – 01<sup>st</sup> March, 2012 and discussed with experts of forestry.*

Since the 1980s the municipality of Växjö in Southern Sweden has been increasingly focusing on using wood, primarily forest wood, to produce heat and electricity. A permanent and sustainable supply of forest wood (so-called forest fuel) is therefore indispensable for the future operation of the energy generation process.

The objective of this activity within the North Sea - SEP project was to develop a model to estimate a sustainable potential of the forest fuel supply until the year 2050 for the municipality of Växjö.



The model for the spatial and temporal analysis was implemented in a Geographical Information System (GIS).

The study started further discussions about the issue forest fuel against the background of the sustainability and the use of ICT and GIS in energy planning.

Contact:  
Jürgen Knies  
[Juergen.Knies@jade-hs.de](mailto:Juergen.Knies@jade-hs.de)

## A Sustainable Strategic Energy Plan for 5 municipalities in Denmark is on its way! (DK)

*At the moment the Green Network, and the municipalities of Vejle, Kolding, Fredericia, Hedensted and Middelfart (partners of the North Sea – SEP project) are working on a common “Sustainable Strategic Energy Plan” that focuses on the use of surplus heating.*

At the municipality of Middelfart, Head of Climate Change Morten M. Westergaard is very proud:



Morten M. Westergaard

*"It's never been done before. Due to the project 5 municipalities agreed on dealing with the same challenges. We are working on possibilities to use surplus heating from industry and put it into our district heating system. It's a courageous project and we are challenging the system. Both the political system but also our district heating system"*

Due to the tax system in Denmark a lot of surplus heat and energy from industry is let out in the air. The question is: Why don't we reuse the surplus heat, at least for a short period? It could be a very important contribution to achieve the Danish goal that is to be independent of fossil fuel in 2050.

At the moment the Danish partners are not sure about the exact surplus potential in the 5 municipalities. So this will be included in some of the findings in the Strategic Energy Plan. But also the potential for producing biomass is being investigated in detail and a roadmap on existing consumption will be produced.

*"A fantastic thing was that due to the North Sea - SEP project, some of the other municipalities in the region got interested. So they are going to join us! It means that in the beginning of May, we will have a Strategic Energy Plan that covers 7 municipalities"* says Morten Westergaard.

The Strategic Energy Plan will be presented to the politicians in June 2012.

Further information and contact:  
Morten M. Westergaard  
[morten.westergaard@middelfart.dk](mailto:morten.westergaard@middelfart.dk)

Sanne Østergaard Nielsen  
[son@greennetwork.dk](mailto:son@greennetwork.dk)

## "Energiekompetenz Osterholz" (DE)

*A new step in the Energy-U-turn ("Energiewende Osterholz 2030") brings closer cooperation between project partners.*

Starting in 2012, the county of Osterholz, its municipalities (partners in the North Sea – SEP project), private companies, and educational institutions in the region henceforth will work even more closely

together under the umbrella brand name of: "Energiekompetenz Osterholz" (Energy Competence Osterholz).

By additional conveyance by the state of Lower Saxony, new resources are to disposal to develop und advance new projects, to create innovations on the field of producing and providing energy, and to generate shared



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public relations of the partners to a transregional quality label for energy related products and services from the county of Osterholz. Therefore, "Energiekompetenz Osterholz" is another step to promote the combination of climate protection, the careful handling of natural resources, and economic promotion on a regional level.

The following photo presents the project partners on a press conference on Thursday, December 8<sup>th</sup> 2011:



From left to right: Project Leader Ulrich Müller (city of Osterholz-Scharmbeck), Klaus Peter Maier (Volksbank Osterholz), Dr. Jörg Mielke (head of administration, county Osterholz), Bernd Lütjen (mayor, community of Hambergen), and Christian Meyer-Hammerström (commercial director, Osterholzer Stadtwerke)

Contact:  
Ulrich Müller  
[u.mueller@osterholz-scharmbeck.de](mailto:u.mueller@osterholz-scharmbeck.de)

## Dr Stewart Russell 6<sup>th</sup> August 1955 – 17<sup>th</sup> September 2011



We are sad to report the tragic and untimely death of our colleague, Stewart Russell. Stewart had been battling with cancer since February. He will be greatly missed, both as a colleague and friend.

Stewart was Deputy Director of Edinburgh University's Research Centre for Social Sciences, and was a much valued member of the Heat and the City team. Much of Stewart's work was on energy innovation and governance issues. He undertook a major study on the history up to the mid 1990s of combined heat and power and district heating

systems in the UK. His other research work on energy issues has included projects on health risks of energy systems; on renewable energy in Australia and 'green power' retail schemes in its electricity sector; on greenhouse gas emission reduction strategies; on domestic energy use; on 'sustainable city' experiments; on micro generation; and on local government energy and sustainability planning.

As the memories and reflections of Stewart's colleagues and friends make clear, he had a great influence on his many colleagues and was much respected, admired and liked. He will be sorely missed. Our thoughts are with his partner, Lorraine.



## 02 external research news

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### Low Carbon Regions in the North Sea (LOWCAP) Cluster Project

The project partners of North Sea – SEP are also involved in other North Sea - SEP related projects. Jade-Hochschule (DE), City of Aberdeen (UK) and Intercommunale Leiedal (BE) are working together in the LOWCAP Cluster Project within the North Sea Region Programme. The project's goal is again the reduction of energy consumption



The Low Carbon Regions in the North Sea (LOWCAP) cluster project will exchange knowledge and experiences from four carbon reduction and energy efficiency projects (Build with Care, Care North, North Sea - SEP

and Carbon Capture & Storage) in the North Sea Region.

The project brings together the key results and lessons learned from the partner projects and other related North Sea Region projects. The findings will be shared with stakeholders in the North Sea Region, including decision makers in the public sector and end users from business and communities. Through a review of EU programmes and the most recent literature, LOWCAP will produce policy advice for the North Sea Region in regards to carbon reduction and energy efficiency.

Details can be found at:

<http://www.northsearegion.eu/ivb/projects/details/&tid=150>

### Sustainable Energy Action Plans in municipalities within Come2CoM (Come to the Covenant of Majors)

The IEE-project Come2CoM has the purpose to foster municipalities in their affiliation-process to the covenant of mayors, with the main aim to elaborate Sustainable Energy Action Plans for these municipalities in collaboration with officials and enterprises. The outcomes of the project match the outcomes in the project North Sea – SEP in a fruitful way. When municipalities have signed

for the covenant, we have the possibility to use results from North Sea - SEP in order to develop such an action plan. It gives us a holistic view of the local needs and in many cases we have fostered the municipalities with the organization of workshops and seminars. Other ways of fostering is to present different tools and models elaborated in North Sea - SEP to be useful on local level.



The role for Energikontor Sydost, partner within the North Sea – SEP project is to inform Swedish municipalities about the covenant of Mayors. Up to now there are 50 participating in it in Sweden. Other roles are to foster municipalities in the affiliation process, elaborate proposals for methodology to present a baseline emission inventory. Since the municipalities shall elaborate Sustainable Energy Action Plans for the decreasing of the emissions of carbon dioxide with at least 20% for the year 2020 in comparison with 1990, the emission-data from 1990 has to be available, and it is available in Sweden. But some figures need to be re-calculated in one way or another way. Finally the role for Energikontor Sydost

as a partner of the Come2CoM-consortium is to organize seminars for the elaboration of Sustainable Energy Action Plans (SEAP) and to present different methodologies for the elaboration.



Please find more information about Come2CoM here:

<http://regions202020.eu/cms/sec/come2com#>

## EU Sustainable Energy Week (EUSEW)

The EU Sustainable Energy Week will take place in Brussels and across Europe between 18<sup>th</sup> and 22<sup>nd</sup> June 2012. EUSEW is a core activity within the Sustainable Energy Europe Campaign.

The event's activities in Brussels will range from a three-day policy conference focusing on renewable and sustainable energy policy issues to dozens of engaging events, projects and exhibits open to the public. And additionally in the EUSEW every year hundreds of organisations and individuals

participate by hosting Energy Day events. An Energy Day is defined as a not-for-profit event, activity, project, exhibition or display that promotes energy efficiency or renewable energy. It must take place between 18<sup>th</sup> and 22<sup>nd</sup> June 2012 (weekends before and after is also acceptable). Registration for EUSEW is open. Please find more details at <http://eusew.eu/>



## Energy Roadmap 2050

In December 2011 the European Commission adopted the Communication "Energy Roadmap 2050". The EU is committed to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group. In the Energy Roadmap 2050 the Commission explores the challenges posed by delivering the EU's de-carbonization objective while at the same time ensuring security of energy supply and competitiveness. The Energy Roadmap 2050 is the basis for developing a long-term European framework together with all stakeholders. To have a closer look follow the link below:

[http://ec.europa.eu/energy/energy2020/roadmap/index\\_en.htm](http://ec.europa.eu/energy/energy2020/roadmap/index_en.htm)



### 03 Imprint

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- Website:** [www.northseasep.eu](http://www.northseasep.eu)
- e-mail:** [info@northseasep.eu](mailto:info@northseasep.eu)
- Editors:** Tim Brauckmüller, atene KOM GmbH, Berlin/Germany, [info@atekom.eu](mailto:info@atekom.eu)  
Silke Nolting, The Municipal Environmental Campaign U.A.N., Hannover/Germany, [nolting@uan.de](mailto:nolting@uan.de)