Green Week 2009: Planning the battle against climate change

European Commission President José Manuel Barroso

This year’s edition of Green Week, the Commission’s annual environmental conference, took a long hard look at climate change challenges in the run up to the Copenhagen conference this December. Commission President José Manuel Barroso presented an overview of the advances already made in Europe and stressed the need to tackle economic and environmental challenges at the same. First movers in energy-efficient and low-carbon technologies would reap major benefits, he said. “We have already achieved much over the last five years,” said President Barroso. “The EU has now formally adopted the climate and energy legislative package, which makes Europe the first region in the world to set far-reaching, legally binding climate and energy targets. The package delivers on EU leaders’ commitments in March 2007 to reduce greenhouse gas emissions by at least 20% of 1990 levels and to raise the share of energy consumption provided by renewable resources to 20%, both by 2020. It also contributes to the target of improving energy efficiency by 20%.”

He stressed that the fight against climate change must not be put on hold until the economy recovers, and that the economic and environmental challenges need to be tackled together. The economic arguments for taking action on climate change are just as compelling as the scientific case: the costs of climate change will be far higher if action is not taken now – up to 20% of GDP annually in the long run, according to the Stern Review.

The benefits of going green are also underestimated. “Change brings big economic opportunities, provided that the EU further exploits its first mover advantage, and consolidates its position on world markets for energy-efficient and low-carbon technologies,” said President Barroso. “Achieving a 20% share for renewables, for example, could mean more than a million jobs just in this industry by 2020. Smart investment in infrastructure, energy efficiency and clean car technology supported by the European Economic Recovery Plan will all support vulnerable industries in intelligent ways: by preparing them to thrive in the markets of the future, instead of artificially propping them up for markets that are fading into the past.”

http://ec.europa.eu/environment/greenweek/home.html

Focus on 2008 runners up

The two runners up for the 2008 EBAE process category and the runner up in the international co-operation category feature in this issue.

See pages 2 and 3
**FOCUS ON 2008 EBAE RUNNERS UP**

**PROCESS CATEGORY**

### New cathode technology slashes chlorine energy use

Vast quantities of chlorine are used in the manufacture of plastics and drugs. However, the electrochemical production of chlorine is one of the most energy-consuming processes in the chemical industry. Bayer is changing that with a new oxygen depolarized cathode (ODC) process for closed-loop recycling of chlorine from hydrochloric acid (HCl) by electrolysis, bringing major improvements in energy efficiency.

The concept is a result of research into ODC for fuel cells. Unlike traditional HCl electrolysis, no hydrogen is formed, meaning the electrolysis cell voltage can be reduced significantly, while the chlorine production remains the same.

“The principle of increasing the efficiency of electrolysis cells by suppressing hydrogen formation has been known for some time,” explains Dr Joachim Genz of Bayer. “Our innovative achievement is in implementing its technical application which requires cathode surfaces of 2.5 m² and had not been successfully managed up to now.”

[http://www.bayer.com](http://www.bayer.com)

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### Cleaning up on water while cutting costs

Nereda is a water-treatment technology for industrial and municipal wastewater. This Dutch innovation is the product of a close collaboration between engineering consultancy DHV, Delft University of Technology, STOWA – the Dutch Foundation for Applied Water Research – and five municipal water companies, with the support of the Technology Foundation STW and SenterNovem innovation programmes.

“This is the first real process breakthrough in generic biological purification of municipal and industrial wastewater for many decades,” explains Andreas Giesen of DHV. The technology uses natural bacteria in the treatment. Unlike existing processes, these bacteria grow in the form of concentrated, compact granules. As a result, the technology requires less space and involves lower construction costs.

Nereda makes wastewater treatment more sustainable since, in comparison with similar existing processes, it requires far less energy and fewer construction materials. The technology is also financially attractive as it requires less investment.

[http://www.nereda.net/](http://www.nereda.net/)

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### Technology already operational

Nereda technology is already operational in the industrial sector in the Netherlands. Work is currently under way with STOWA and several municipal water companies to make the technology available in the short term for large-scale sewage treatment. Other Nereda treatment plants are under construction in South Africa and Portugal.

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### Industrial scale production in China

Bayer is now using the ODC technology to recycle chlorine in a 215 000 tonne/year industrial-scale plant in Shanghai, contributing to China’s efforts to improve the energy-efficiency of its industries. The chlorine goes into the production of polyurethane chemicals.

By using advanced technology and an energy-efficient setup, the Bayer Integrated Site Shanghai is able to save approximately 100 MW compared with conventional production plants. These savings can supply up to 10 000 homes.

[http://www.bayer.com](http://www.bayer.com)

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INTERNATIONAL CO-OPERATION CATEGORY

Spreading the renewables message

The core business of Austrian renewable energy supplier Windkraft Simonsfeld (WKS) is the production of clean power using wind energy. WKS operates 50 wind turbines generating around 200 GWh of electricity a year – equivalent to the needs of 57,000 households. But its portfolio also covers other forms of renewable energy in Austria and abroad. The EL SOL project in Bolivia is one example, promoting self-build solar-thermal water-heating systems. “EL SOL water-heating systems have been implemented in Bolivia since July 2005,” says Gloria Diewald of WKS. “A continuous evaluation since has optimised the technology provided for local needs.”

The simplicity of its systems enables people on low incomes and in remote areas to use solar energy to meet some of their needs. The technology can be produced locally, requires little maintenance and has the potential to be replicated widely. WKS is now planning co-operation with local NGOs experienced in the implementation of alternative energy sources in rural areas.

http://www.wksimonsfeld.at/

IMPROVING CONDITIONS FOR RURAL SCHOOLS

WKS recently visited a school in the Bolivian village of Wilacollo near the Peruvian border together with representatives of the Canadian international development organisation CECI, which already operates seven EL SOL collectors. Since May 2007, sanitary conditions at the school have clearly improved with the installation of an EL SOL collector and thus the provision of warm water.

COUNTRY FOCUS

Luxembourg: Cutting energy in OSB panel production

The tenth edition of the Luxembourg environmental prize for industry took place in November 2007 at the headquarters of the Luxembourg Business Federation (FEDIL). Guests included Luxembourg environment minister Lucien Lux and members of the jury from the public and private sectors, as well as the prize winners.

Three high quality projects had been shortlisted. The first prize went to Kronospan Luxembourg for its ‘Neue Umwelttechnologie in der OSB-Fertigung’ project, which has markedly reduced the energy required to dry the wood used for oriented strand board (OSB), a layered wood product, while improving panel quality. The research was carried out as part of an EU-funded LIFE programme project.

http://www.fedil.lu

From left to right: Nicolas Soisson, Director of FEDIL; Robert Dennewald, President of FEDIL; René Winkin, Secretary General, FEDIL; Lucien Lux, Minister of the Environment; and the management of Kronospan Luxembourg
The annual Swedish national environmental innovation competition has been running since 1998. It is part of an environmental innovation programme coordinated by Sweden's Environmental Technology Council, SWENTEC, and managed by the Halland Regional Development Council.

There were 90 applicants in 2008 in product and process categories. The three winners were selected from 15 finalists. The ‘Miljöinnovation 2008’ prize went to ‘OrganoClick’, which makes it possible to add new and commercially interesting properties to cellulose-based materials – such as waterproofing paper, stopping timber rotting or making textile fibres water resistant.

http://www.miljoinnovation.se/

Sweden: Cellulose innovation wins top prize

OrganoClick innovators Jonas Hafrén and Armando Cordova won the Miljöinnovation 2008 prize