



## HORIZON MANAGEMENT NEWS 03/2013

### In this issue:

- Driving green - Towards an electric future?
- Interfacing biodiversity and policy  
Juliette Young makes an overview of the SPIRAL project
- News in research
- Events and workshops

## Driving green - Towards an electric future?



The EU has, for a long time, had an arguably strong automotive sector, which has a positive impact on the economy and employs a significant number of people. However, now the automotive sector is facing a threefold challenge.

For one, climate change and air pollution is forcing the industry to make fundamental changes in order to reduce vehicle emissions of greenhouse gases and other pollutants. Furthermore, rising oil prices and increasing concern about the security of oil supplies are pushing the industry to search for alternatives and to construct fuel-efficient vehicles. Thirdly, the

economic crisis has also taken its toll on the automotive sector by causing sales of new cars to drop, considerably damaging the industry worldwide. [The European Green Car Initiative](#) is the EU's answer to these problems and forms part of the EU's wider Economic Recovery Plan.

The initiative mainly supports the development of innovative environmentally friendly vehicles that will hopefully take the automotive market by storm. The untapped potential of electric vehicles hasn't gone unnoticed around the world though, meaning that Europe has a lot of competition in this area. Through the European Green Cars Initiative, the EU hopes to place its car industry at the forefront of the new electric vehicle market. Hybrids and electric vehicles have come a long way in recent years due in part to the support offered by the EU through funding schemes such as FP7. But these schemes are needed now more than ever because a considerable

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amount of research is still required in order to see this fringe industry flourish. Moreover, public and political interest in electric vehicles is currently at an all time high, meaning that investments would probably have a good return over time. So at this point, European funded projects and public investment will help the automotive industry to remain a major player.

The European Green Cars Initiative is maybe one of the best examples of the EU's commitment to the health of this industry. European researchers have already come up with innovative ways of improving the performance of hybrid and electric vehicles and greening the overall transport system. Supported by EU funds and programmes, scientists and engineers across the EU are working on prototypes of exciting new technologies that hold the promise of much greater improvements in performance in the future. Meanwhile, policy makers are paying more and more attention to guiding the auto sector along the path to sustainability.

However, in spite of all the latest research and the excitement of the public sector as well as of politicians at the prospect of making electric cars more widely used, there are still challenges ahead. For instance, electric cars are too expensive for use on a larger scale and their driving range doesn't meet everybody's needs. Investment in research has therefore never been so important and the EU is well aware of this. The budget for transport research under FP7 has grown to a substantial EUR 4.16 billion from the previous framework, and a significant part of this sum (around 1 billion euro) is devoted to research into sustainable surface transport.

By Violeta Marian

## Interfacing biodiversity and policy

### Juliette Young makes an overview of the SPIRAL project

The **SPIRAL** project (Science-Policy Interfaces: Research, Action and Learning) is coordinated by Allan Watt, Juliette Young (NERC Centre for Ecology and Hydrology) and Sybille van den Hove (Median). All three have been working at and on the science-policy interface (SPI) for many years, through their involvement in EU projects (e.g. Rubicode, HERMES, HERMIONE, SCALES, Bioforum), summer schools (e.g. the ALTER-Net summer school), the European Platform for Biodiversity Research Strategy (EPBRs), workshops, conferences etc.

The SPIRAL project was borne from the realisation that SPIs can and should be improved for the conservation and sustainable use of biodiversity. Effective SPIs, however, remain a challenge for both science and policy. It is particularly challenging for biodiversity and ecosystem services, which include many "wicked" problems that make knowledge generation, sharing and use particularly difficult. Furthermore, many of the cultural "gaps" between science and policy still exist, including lack of incentives, intractable timeframes and differing priorities. With these challenges in mind, **the SPIRAL project aims to improve science-policy interfaces** by:





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- Carrying out **research** on how biodiversity research informs policy-making processes (both directly and indirectly via policy instruments, the decision-making processes of individual citizens, civil society organisations, business and other actors); and vice-versa how policy-makers and stakeholders inform biodiversity research;
- **Learning** from and feeding in our knowledge to existing SPIs at the global, European and national scales. As such, SPIRAL researchers have been involved actively in the global Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), European research projects and networks, and national level institutions (e.g. the Royal Netherlands Institute for Sea Research).
- Putting learning into **action** by building capacity and networking in Europe and elsewhere on linkages between science and policy. One example is the AfriBES – an IPBES for Africa. SPIRAL supports the development of this social network of scientific and technical information for Africa, to allow for a better use of knowledge through collaboration and sharing.

SPIRAL is primarily a practical project: our priority is to help all individuals interested in science-policy interfaces in the EU and beyond (be they from science, policy business or civil society) to better understand, and therefore more effectively engage in science-policy activities. In order to make all our outputs as relevant as possible we have included policy-makers at every stage of the project: from initial discussions with the European Commission representatives from the DG Research and DG Environment, to workshops with policy-makers, joint publications, and a Dynamic Network of Advisers made up of policy-makers, scientists, and NGO representatives. Following on from this, we have produced a series of 2-page briefs to help people start getting involved in,

or improve the way they operate at the science-policy interface. All briefs can be found on our [website](#) and currently include:

- A beginner's guide to understanding challenges of communicating about biodiversity
- What's so special about biodiversity?
- A myth-busting-guide to science-policy interfaces (SPIs)
- Reflections on recent experiences with SPIs: the UK National Ecosystem Assessment; deer management in Scotland; the development of National Biodiversity Strategies
- Recommendations for improving science-policy communication (for individuals, teams and organisations)
- Designing for success: SPI structures
- Goals and roles: SPI objectives and functions
- Keep it CRELE: credibility, relevance and legitimacy for SPIs
- CRELE Choices: trade-offs in SPI Design
- Integration of research results into policy making: recommendations to policy makers
- Improving the use and impact of your research: recommendations to EU research projects
- Adding and sustaining the value of research: recommendations for research funding institutions
- Tools for Science-Policy Interfaces: Recommendations on BISE and Eye on Earth  
Funded under the European Community's Seventh Framework Programme (FP7/2007-2013), contract number: 244035.



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## News in research

### Energy: Advances in renewable energy

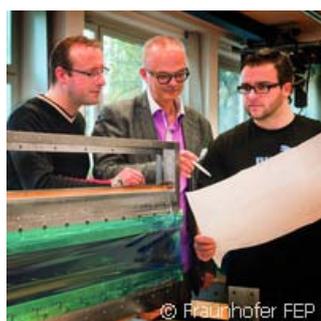


The diversity of the renewable energy sector is reflected in the 23 innovative renewable energy demonstration projects in 16 EU Member

States have been awarded EUR 1.2 billion. The projects cover areas such as advanced biofuels, concentrated solar power and geothermal power, wind power, ocean energy and distributed renewable management (smart grids).

[Details](#)

### Medicine: Nanoparticles and the Immune System



Nanotechnology has great potential and thus it's predicted to have a wide range of applications from the ability to reproduce things like diamonds and food to the world being devoured by self-replicating

nanorobots. But in more practical terms this technology can bring impressive new medical improvements. For instance, the InLiveTox project, which has been funded by the EU over the past three years, has significantly advanced the capability of in vitro testing of nanoparticles.

[Details](#)

### Healthy seeds for healthy food

One of the solutions to the food problem facing the world has been genetically modified seeds. Scientists at the Fraunhofer Institute for Electron Beam and Plasma

Technology FEP in Dresden, Germany have developed an environmentally friendly method for removing germs from seeds.

[Details](#)



### DNA chip for Attention Deficit Hyperactivity Disorder

ADHD is the most common childhood neuropsychiatric disorder. A researcher from the UPV/EHU-University of the Basque Country has come up with an innovation that she believes could

improve the rate of diagnosis of this disorder, and open the way to potential new therapeutic treatments.

[Details](#)

### Learning the Alphabet of Gene Control

Scientists from Karolinska Institutet in Sweden have made progress in understanding how human genes are regulated. In their study they have identified the DNA sequences, which bound to over four hundred proteins controlling the expression of genes.

[Details](#)

### Others: Optimised custom-made skis

The development of sports equipment especially adapted to the requirements of physically challenged competitive athletes is still in its infancy. A team of German researchers from the Fraunhofer Institute for Mechanics of Materials IWM has been working on improving ski equipment for people with disabilities. For the first time, competitors will have the chance of lining up with optimised skis adapted to their individual needs.

[Details](#)



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### 'Designer' enzymes to boost hi-tech manufacturing

Engineering of new 'designer' enzymes is a key technology in a world where cleaner, cheaper and safer industrial processes are urgently needed. It is this function that the OXYGREEN project is trying to achieve. The project represents a giant step forward in enabling industry to harness the hidden power of nature to achieve precisely this goal.

[Details](#)

### Principles for Better Self- and Co-Regulation and Establishment of a Community of Practice

The first results of the European Commission's Communication A renewed EU strategy 2011-14 for Corporate Social Responsibility (COM (2011) 681 final) of October 2011 has been published. DG CONNECT took the lead for Action 5.

[Details](#)

### EU resumes its development cooperation with Mali

European Commissioner for Development, Andris Piebalgs, announced the fully-fledged resumption of development aid in Mali. Commissioner Piebalgs underlined that cuts to the EU aid budget compared to the original proposal of the European Commission mean that EU individual member states will need to increase their own national development budget in order for the EU to respect its global commitment to allocate at 0.7 per cent of our Gross National Income (GNI) for development purposes by 2015.



[Details](#)

### Commission to launch bioeconomy observatory

The European Commission will establish an observatory to map progress and measure the impact of the development of the European Union's bioeconomy. The observatory will gather data to follow the evolution of markets, to map EU, national and regional bioeconomy policies, research and innovation capacities, and the scale of related public and private investments. The observatory will be coordinated by the Joint Research Centre, the Commission's in-house science service.

[Details](#)

### The Beauty and Benefits of Science: The European Commission at AAAS 2013 Boston, USA, 14- 18 February 2013

The European Commission is taking part in one of the world's biggest and prestigious science gathering worldwide, organized annually by the American Association for the Advancement of Science.

[Details](#)

### Environment: Transport emissions: JRC to lead development of a new test procedure for cars

In Europe the compliance of emissions from passenger cars with regulatory standards is measured during a predefined test procedure in the laboratory. The JRC believes that this laboratory test does not accurately capture the amount of nitrogen oxides emitted by diesel cars on the road, which is substantially higher.

[Details](#) In photo: A real-driving test performed by the



JRC using PEMS © EU, 2013



## Events and Workshops

Technology assessment and policy areas of great transitions, 13- 15 March 2013 in Prague, Czech Republic

The event is organised within the framework of the PACITA ('Parliaments and civil society in technology assessment') project. PACITA is a four-year EU financed project under the Seventh Framework Programme (FP7) aimed at increasing the capacity and enhancing the institutional foundation for knowledge-based policy-making on issues involving science, technology and innovation.

### [Details](#)

Breaking into your brain, 14 March 2013 in London, UK

The event will be an opportunity for attendees to discuss the computing, physics and engineering methodology aspects of brain research and understand how they work.

### [Details](#)

The 11th International Conference of the European Chitin Society (EUCHIS 2013), 5-8 May 2013 in Porto, Portugal

Chitin is a potential energy source as well as gene and drug delivery carrier. It also has potential in the emerging field of nanobiotechnology.

### [Details](#)

ACQUEAU Workshop, 19 February 2013 in Brussels, Belgium

This workshop will bring together relevant R&D and innovation stakeholders such as large enterprises, SMEs, research centres and public authorities to develop projects ideas around three water priority challenges being water and wastewater infrastructures; water and wastewater treatment processes; and energy saving and recovery innovations.

### [Details](#)

Human Genomics and Medical Technology, 18 - 21 March 2013 in Nijmegen, the Netherlands

The course will highlight the relation between technology and medical ethics. It will focus on moral issues generated by the research and development and application of new knowledge in a range of emerging fields like tissue engineering and genomics.

### [Detail](#)

European climate change adaptation conference, 18 - 20 March 2013 in Hamburg, Germany

The event will cover a broad range of issues related to climate change adaptation, placing a great emphasis on understanding and assessing adaptation in action under the theme integrating climate into action.

### [Details](#)

Biovision 2013: From Life Sciences to Sciences for Life, 24 - 26 March 2013 in Lyon, France

The event aims to foster productive interactions and collaborations between all life sciences stakeholders, from academic and private sector to policy makers and civil society. It places special emphasis on solutions having a real impact on citizens.

### [Details](#)

BioPhotonics and Imaging Conference (BioPIC 2013), 25- 27 March 2013 in Dublin, Ireland

The conference will gather research leaders who wish to shape the future of bio-imaging in Europe, from researchers developing new imaging techniques to those who will apply them.

### [Details](#)

The Sixth International Symposium on Mining and Web, 25- 28 March 2013 in Barcelona, Spain

### [Details](#)