

ENTERPRISE INDUSTRY *magazine*



Kopernikus: observing our planet for a safer world

Promoting sustainable industry

Broadening horizons for Europe's SMEs



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ENTERPRISE & INDUSTRY

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KOPERNIKUS – IMPROVING LIFE FOR EUROPEANS

Ensuring the proper protection of citizens and environment relies on the provision of good information. Early and appropriate monitoring of developing and potential situations will become not only easier but also much more effective, thanks to the European Kopernikus initiative, previously known as GMES.

This second issue of the *Enterprise & Industry* magazine explains in detail the benefits of Kopernikus. Monitoring changes in the environment, having early warning of natural or man-made disasters, and identifying and monitoring threats to Europe's security: these are the major advantages arising from this initiative. And this will be done via the development of new and more effective means of gathering, processing and interpreting information from both satellite and ground-based monitoring equipment.

After years of preparatory work, the launch of the first set of full-scale applications moves the programme into an exciting new phase. The new name, Kopernikus, for the activities previously known under the title Global Monitoring for Environment and Security (GMES), was revealed at the recent Forum in Lille, organised by the French Presidency and the European Commission. As Kopernikus becomes fully operational,

the new identity is expected to help raise awareness of the full range of services which European policy-makers and public authorities will be able to call on in order to protect citizens and environment.

Other articles in this issue look at the new strategy to promote sustainable industry, at a package which will make cars and heavy vehicles safer, at the Electra report (which seeks to make electrical equipment more environmentally friendly), at an initiative which will assist small business in managing innovation, and at a recent study which aimed to identify measures that can help European SMEs improve their competitiveness on an international level.

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(www.ec.europa.eu/enterprise/e_i) ■

KOPERNIKUS: OBSERVING OUR PLANET FOR A SAFER WORLD

© Juanjo Tugores

The Kopernikus initiative – the new name for Global Monitoring for Environment and Security (GMES) – has launched its first package of earth observation services for Europe’s environmental and civil security needs at a forum in Lille.

The demonstration services now launched mark a giant step forward in ensuring that Europe can meet its own geo-information needs in support of national and EU-wide policies relating to the protection of the environment, mitigation of climate change, and reducing existing threats to civil security.

Kopernikus services will also help the EU meet its international commitments, especially those relating to a reduction in greenhouse gas emissions, protection of the ozone layer and the long-range movement of air pollution. Similarly, the services will be used to help formulate, implement and verify the EU’s environmental and other policies as well as supporting policy efforts at national and regional scales.

While Europe as a whole has developed world-class infrastructure that is a prerequisite for a comprehensive programme on earth observation, it remains largely uncoordinated and fragmented.

Global Monitoring for Environment and Security (GMES), now Kopernikus, was established to bring together these existing



resources in order to boost Europe’s capacity to collect, manage and develop the required information for the benefit of its citizens.

Revealing the new name for the initiative at the Lille forum, held on 16-17 September, Commission Vice-President Günter Verheugen said: “Today we honour a great European – Nikolaus Kopernikus – by dedicating his name to our European project for Global Monitoring for Environment and Security [...]. Just as Kopernikus was decisive in better understanding our world, this monitoring will help us to save our planet. This is also a very concrete demonstration of the technological capacity and expertise of Europe’s space industry.”

Geo-information services combine space, air-, sea- and ground-based earth-observation sensors in models to provide current and future analysis of the state of land, ocean and atmosphere.

New EU earth-monitoring infrastructure – for example, additional satellites, buoys, balloons and other sampling devices – will be put in place to fill gaps in coverage for such services.

Kopernikus services coordinate, analyse and process earth-observation data, preparing them for the target users: these include decision-makers, national and EU agencies, non-governmental organisations, researchers, private-sector businesses and citizens.

On the environmental side, Kopernikus focuses on climate change, air quality, marine pollution and sea state, land use, including issues of biodiversity and deforestation, agriculture and fisheries management, among other planned services. The planned services for civil security include the provision of up-to-date geo-information for border surveillance, maritime traffic, the tracking of suspicious ships and cargo at sea, disaster management, humanitarian aid, and political emergencies.

To give but a few concrete examples, the Kopernikus services enable better forecasting of smog events in urban areas, will issue early warnings and predict the extent of coastal flooding events, or determine the direction of travel of an oil spill at sea in addition to helping to locate the original polluter.

A partnership focusing on geo-information services

Kopernikus is being developed as a joint initiative of the European Commission and the European Space Agency (ESA), and involves hundreds of partners, including research groups, private companies, national organisations and EU institutions working together in consortia to build the actual services.

The services are grouped into six interacting 'themes' – land, atmosphere, climate change, ocean, security and emergency, along which the geo-information services will be offered to both public and private sectors for further use. All themes are currently supported through a number of EU-funded research projects.

The 'ocean', 'land' and 'emergency response' themes (the original 'fast-track' services), as well as 'atmosphere', are on track to offer



concrete, operational products to users, with services in the field of security to follow. Specific services targeting the issue of climate change will be developed transversally by building upon the individual 'Earth-compartment' services, marine, land, and atmosphere.

Over the past few years, the consortia developing the six themes have been making demonstration services available for testing to identified users. (See articles on the individual services in each theme). The Lille forum, served to showcase some of the services already available to potential users from these consortia. In addition, attendees were given an overview of the range of services they plan to develop in the coming years.

Targeting the commercial sector

While many of the users will be public institutions and agencies at all levels – from European policy-makers to coastguard units, for example – Kopernikus outputs are also available to private-sector companies that may want to develop new products for the commercial market.

"As the services are directed at the public good – such as better security measures and a more efficient method of managing the environment – making them available to companies will serve to stimulate the economy and encourage innovation," says Valère Moutarlier, head of the Commission's Kopernikus Bureau. "On this basis, businesses will be able to improve their own processes or develop more tailor-made services for their specific customers."

After the launch of demonstration services at Lille, increased focus will be devoted to making them operational, i.e. on providing them on an assured 24 hours a day, seven days a week basis, as well as enlarging the portfolio of services offered.

On the political front, the European Commission plans to adopt a Communication in November which will unveil the next steps in developing the Kopernikus-supported services and how the partnership between the participating bodies will be organised.

"The Communication will pave the way to bring Kopernikus from the demonstration to the operational phase," Moutarlier says.

"From the start, user involvement has been sought in shaping the services. The success of Kopernikus now depends on the extent the developed services are taken up by the targeted users." >>

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www.esa.int/esaLP/LPgmes.html



MANAGING LAND AND WATER

Kopernikus' land services provide geo-information to help policy-makers manage, among others, land and inland water resources in Europe and across the globe.

The package of services developed by an EU co-funded project is in part aimed at helping European Union Member States meet environmental policy commitments outlined in a series of EU directives.

One of the first operational services – monitoring the levels of soil sealing throughout the EU – was developed for the European Environment Agency (EEA). Soil sealing refers to the effect urban areas have on groundwater levels and the risk of flooding.

Urban areas essentially seal the soil from water penetration due to rain or run-off, thus lowering the recharge rate of the groundwater and eventually affecting water quality. As the water remains trapped on the surface, the threat of flooding increases.

Using satellite images, the service will provide Europe's urban planners with an important tool, says Franz Jaskolla, a spokesperson for the project. Some Member States are already using the service as a means of complying with EU policies on the environment and urban planning.

A second service monitors land use in urban areas and beyond. This is directed at urban planners as a means of helping them channel urban growth and protect environmentally sensitive areas. "Essentially, the service provides detailed information on land use," explains Jaskolla. "The information can then be used to assess the influence of humans on the environment and what steps can be taken to mitigate such effects."

A third service will provide information on the exposure of EU citizens to the risk of flooding. The demonstration service combines statistical information about population densities in flood-prone areas with land-cover data to determine risk exposure.

Monitoring water quality

A fourth service developed by the land consortium will allow environmental agencies to monitor water quality in the Union. The service will help Member States fulfil a reporting obligation under the EU's Water Framework Directive, Jaskolla says.

The service packages information on land cover, the impact of agriculture, soil type and statistical models. The information can then be used by the Member States to report on the status and quality of ground water.

Global land services

Meanwhile, a global crop-monitoring service provides information and forecasts on the current state of world agriculture. This will be useful as an indicator of the measures the EU needs to take in protecting global food security, continues Jaskolla.

Another service developed by the project – land-carbon monitoring – will contribute to the global effort to assess the impact of increased greenhouse gas levels on climate change. Satellite images are being used to assess the changes to land cover over set periods of time. ■

»» Further information

www.ec.europa.eu/kopernikus/services/land.htm

SUPPORTING CIVIL PROTECTION

Kopernikus security component aims at providing the necessary information to monitor threats and vulnerabilities, to send out early warnings of potential problems, and to support emergency and security operations, among others.

Geo-information services for security applications target mainly organisations engaged in search-and-rescue operations, humanitarian aid, land-border and maritime surveillance, customs, peacekeeping forces, and anti-terrorism activities, both inside and outside Europe.

“By definition, such services have to respond to the demand for geo-information about rapidly changing situations on the ground,” says Giovanni Cannizzaro, spokesperson for an EU co-funded project supporting the development of the security component of Kopernikus.

Some specific applications are currently at the prototype stage. These relate to support provided in several domains: maritime surveillance, conflict prevention and mitigation outside Europe, land infrastructure monitoring, large-event planning, land-border management or non-Proliferation Treaty assessment.

“A Kopernikus maritime surveillance service is currently being tested”, says

Cannizzaro. This first application is designed to aid those engaged in patrolling Europe’s seas, by using satellite data to trace and track suspicious vessels at sea, and prevent illegal movements of hazardous cargo. Demonstrations are currently being performed in collaboration with some national coastguards, and in co-operation with Frontex, the EU agency that coordinates Member States’ border security operations.

Overcoming threats

A second specific application targets the support of those engaged in conflict prevention and mitigation outside Europe. A team is currently establishing services that will provide information and risk analysis to those in the field. It will send out advance alerts of possible conflicts and then give support during any intervention if necessary.

Currently, the European Union Force (EUFOR) is a main customer of this service, which has been tested in Chad and in the Darfur region of southern Sudan.

A third specific application will help to monitor the security of strategic infrastructures, such as oil pipelines. Satellite imagery is being used to test the service by monitoring an oil pipeline in Spain. “This is a pre-operational service that can be easily expanded to other countries in Europe and outside Europe,” Cannizzaro explains.

A fourth specific application supports security planning for large events, such as a high-level political summit. The service is designed to provide up-to-date satellite images before and during an event. It was used in May at a meeting between European and Latin American leaders held in Lima, Peru. It enabled users to map the target area in three dimensions and helped them to identify potential risks and alternative exit routes in case of trouble. ■

»» Further information

www.ec.europa.eu/kopernikus/services/security.htm



EMERGENCY RESPONSE

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Kopernikus' emergency component aims to provide geo-information services relating to natural and man-made disasters, and to those responding to international humanitarian crises.

Rellevant projects focus on providing general mapping services involving the integration of socio-economic data with geo-information provided by satellites and in situ earth observation tools. Other service applications involve the forecasting, prevention and early warning of disasters such as floods, fires and earthquakes.

General services: mapping risks

The general services being rolled out by projects include asset mapping, rapid mapping and damage-assessment mapping.

The assets-mapping service plans to deliver, on a regular basis, socio-economic geo-information products containing up-to-date information on a region's critical assets in

areas subject to natural and man-made disasters. The service would include geo-information on urban settlements, population distribution, infrastructure, public buildings and hazardous areas, for example.

Such mapping can be used by civil-security organisations to assess an area's vulnerability to natural and man-made disasters and how they would respond to a crisis, or even reduce its impact on the population.

The rapid-mapping service provides geo-information to organisations in case a catastrophic event does occur. The information can be used to improve analysis of the impact an emergency has on a specific region, and the management of such a crisis. Rapid-mapping products must show the extent and the impact of the event within very short periods, immediately after or during the crisis.

The damage-assessment mapping service works in conjunction with rapid and asset mapping by targeting the authorities involved in the response and recovery phase. The service allows technicians, engineers, scientists and civil-protection services to map the region affected by a natural phenomenon and to qualify or rank its intensity globally and locally.

Humanitarian services

The other services developed by the emergency consortium include situation mapping and refugee/IDP (internally displaced person) mapping.

Situation maps aid humanitarian-response teams by helping them make informed decisions during rapidly evolving events. Situation maps provide relevant and up-to-date thematic information – for example, the location of response teams and what they do in the operational theatre. The service presents geo-information on road access, climatic conditions, the number of health centres destroyed, and security zones, among other data.

The refugee/IDP service would provide both paper and digital geo-information maps related to refugee and IDP camps. For example, the service would be able to combine satellite imagery with refugee registration data for use by UN agencies involved in relief efforts.

Other service applications are linked predominantly to forecasts, crisis prevention and to providing early warnings of such disasters as floods, fires and earthquakes. ■

»» Further information

www.ec.europa.eu/kopernikus/services/emergency.htm

HEALTHY ATMOSPHERE

© Dean Turner

Kopernikus' atmosphere component is developing, monitoring and forecasting services for tracing atmospheric constituents vital in determining climate change and air quality.

Services will support the provision of geo-information for such tasks as gauging the effect of greenhouse gases and aerosols on climate change, on air quality, and on levels of ultraviolet radiation. Decision-makers could also access the service for determining the best sites for solar-power generation.

The services developed by an EU co-funded project will contribute to the Union's efforts to exploit alternative energy sources, on ensuring the health of its citizens, and on meeting its environmental obligations under international treaties.

While Kopernikus' climate services deal with the weather and the effects of water vapour, the atmosphere component focuses mostly on the changing chemical make-up of the earth's air envelope, says the project's spokesperson Adrian Simmons.

However, services from the two components monitor related areas of concern and contribute to each other's efforts, he continues.

"The services will also complement the weather and climate services provided by Europe's meteorological infrastructure, and builds on the global weather forecasting system operated by the European Centre for Medium-Range Weather Forecasts."

Services are being developed in four main areas. One service component will monitor the concentrations of greenhouse gases and their surface sources and sinks.

Another component will measure global aerosol levels and will develop forecasting services for a range of particles and chemicals in the atmosphere, including pollen, dust, sea salt, black carbon, organic matter, sulphates and other pollutants.

Tracking aerosol levels for health alerts

Such airborne particles have an impact on human health and can be important factors when forecasting the weather or assessing climate change. Aerosols such as dust also serve to cool down the temperature and can be important in offsetting global warming caused by climate change.

A third component will monitor chemically reactive gas levels. The service will log changes in ozone, nitrogen dioxide, carbon monoxide, sulphur dioxide and formaldehyde, among other chemicals. It will also provide improved monitoring and forecasting services for determining the levels of ultraviolet radiation in any particular location.

A fourth component will provide the means to improve the forecasting of regional air quality. For example, the service has been tested by making 66-hour forecasts of nitrogen dioxide levels over Europe.

The service will be useful in assessing the impact of climate variability and changes in air quality, says Simmons. "The services will allow users to provide important health warnings for those at risk – such as asthmatics – and also enables local authorities to take remedial action such as reducing the number of cars [on the roads] on a given day." ■

»» Further information
[www.ec.europa.eu/kopernikus/
services/atmosphere.htm](http://www.ec.europa.eu/kopernikus/services/atmosphere.htm)



MITIGATING CLIMATE CHANGE

© Nancy Nehring

Kopernikus' climate services will help Europe develop policies to mitigate the effects of global warming on its citizens and also contribute to the worldwide effort to address the world's main environmental crises.

"There is a clear need to understand whether the intensity and frequency of environmental events indicating climate change will increase in the future, as they can have major impacts on local and regional communities in Europe," says Adrian Broad, spokesperson for a Kopernikus climate-oriented project.

An important part of the project's efforts is to build a historical database of the earth's climate as a means of creating more accurate models of what is occurring today and what might happen in the future.

Policy-makers will therefore have the best available information on which to make decisions on how to mitigate the effects of global warming.

The information also complements existing meteorological climate data as a means of monitoring the implementation of national, European and international conventions on climate change, explains Broad.

"The climate change agenda is moving beyond a health check of the planet. Monitoring is still an essential criterion to ensure that emission-reduction policies are being implemented effectively by nations, and to monitor any changes in climate conditions and extremes," he says.

Understanding uncertainty

One of the project's most important contributions is the development of methods to understand the uncertainty built into climate change prediction models and of ways to quantify those unknowns, he adds.

The services have a potential user community which includes government policy-makers, national environmental agencies, energy suppliers, transport organisations, and the health sector. "For example, if Europe's climate warms up significantly, we might start seeing some tropical diseases migrating to the

continent," says Broad, in relation to the health sector.

Climate geo-information services are also important in determining where to locate infrastructure and human populations as sea levels are expected to rise in the future. The climate service would help policy-makers form a development strategy for coastal areas.

Other impacts, such as the amount of sea ice and the rate of glacial retreat, are also being developed by the project.

"Climate change is happening," says Broad. "The key is to understand what is likely to happen in the future and how to forecast that change. Kopernikus will provide significant assistance to key stakeholders so policies can be adjusted to meet European needs." ■

»» Further information

www.ec.europa.eu/kopernikus/services/climate.htm



MANAGING MARINE RESOURCES

Kopernikus' ocean services are directed at users such as shipping companies, pollution-monitoring agencies, and local authorities engaged in coastal management, among others.

Geo-information services deliver local and global information by providing observation data, model analysis and predictions and scenario simulations for applications improving the safety and efficiency of maritime transport and naval operations.

Other services will help policy-makers make decisions on how to exploit and manage sustainably ocean resources, such as offshore oil reserves and fisheries, or lessen the impact of environmental hazards and pollution, like oil spills or harmful algal blooms.

The services will also contribute to ongoing climate variability studies and forecasts by providing a better understanding of the ocean and its ecosystems, says Vincent Toumazou, spokesperson for an EU co-funded project.

One of the first demonstration services is an ocean state forecasting service. The service is based on the work of the project and will involve seven forecasting

centres that can provide information to user groups such as coastguard units or shipping companies.

Ocean state forecasting could become as commonplace as the weather forecast on television, says Toumazou. "We are inventing a new career category," he adds.

Coastal and regional forecasts

A higher-precision service will provide similar forecasts on coastal and regional scale. When combined with weather forecasts, this information provides a more accurate and detailed picture of possible conditions at sea.

Another service will provide information to help authorities detect and track oil spills at sea. The service will supply details which can help forecast the movement of a spill. It will also provide data which authorities can use to track the ship responsible for the spill.

Another service, which assesses water quality, uses satellite images to spot algal

bloom at sea, indicative of low-oxygen or toxic conditions harmful to marine life. This service would be useful to commercial operations such as oyster farms.

The project has also launched a service that assesses drifting ice conditions, of value to shipping companies routing their vessels through dangerous waters.

A fish management service is now in the preliminary stages of being launched.

"We can also provide other researchers with up to 20 years of data," says Toumazou. "We have collected the best description of the ocean available, and foresee a large scope for commercial and downstream applications." ■

»» Further information

www.ec.europa.eu/kopernikus/services/marine.htm

SUSTAINABLE INDUSTRY FOR A COMPETITIVE EUROPE

Respecting the environment can contribute to economic growth and should be seen as an opportunity rather than a threat. That is the message of the European Commission's new communication on a sustainable industrial policy. Using natural resources more efficiently, and placing eco-friendly production at the heart of the European economy can do nothing but boost its competitiveness.

In Europe, and throughout the world, energy consumption is rising, pressure on natural resources is growing, and pollution is damaging the environment.

To reduce the environmental impact of our current patterns of production and consumption, we need to buy more eco-friendly products. But producers will be reluctant to offer new, more environmentally friendly products without sufficient sales prospects. Consumers, on the other hand, can find it difficult to verify the competing 'environmental' claims of rival products and therefore choose between them, particularly when the initial investment required varies.

Enabling producers and consumers to make this leap together is at the heart of the European Commission's sustainable industrial policy communication, part of a package adopted in July 2008 to stimulate the development of sustainable products and technologies and their take-up. The package includes a mixture of new standards to reduce the environmental impact, and energy consumption, of products, and incentives for consumers to choose such products in preference to less sustainable options.

Better products

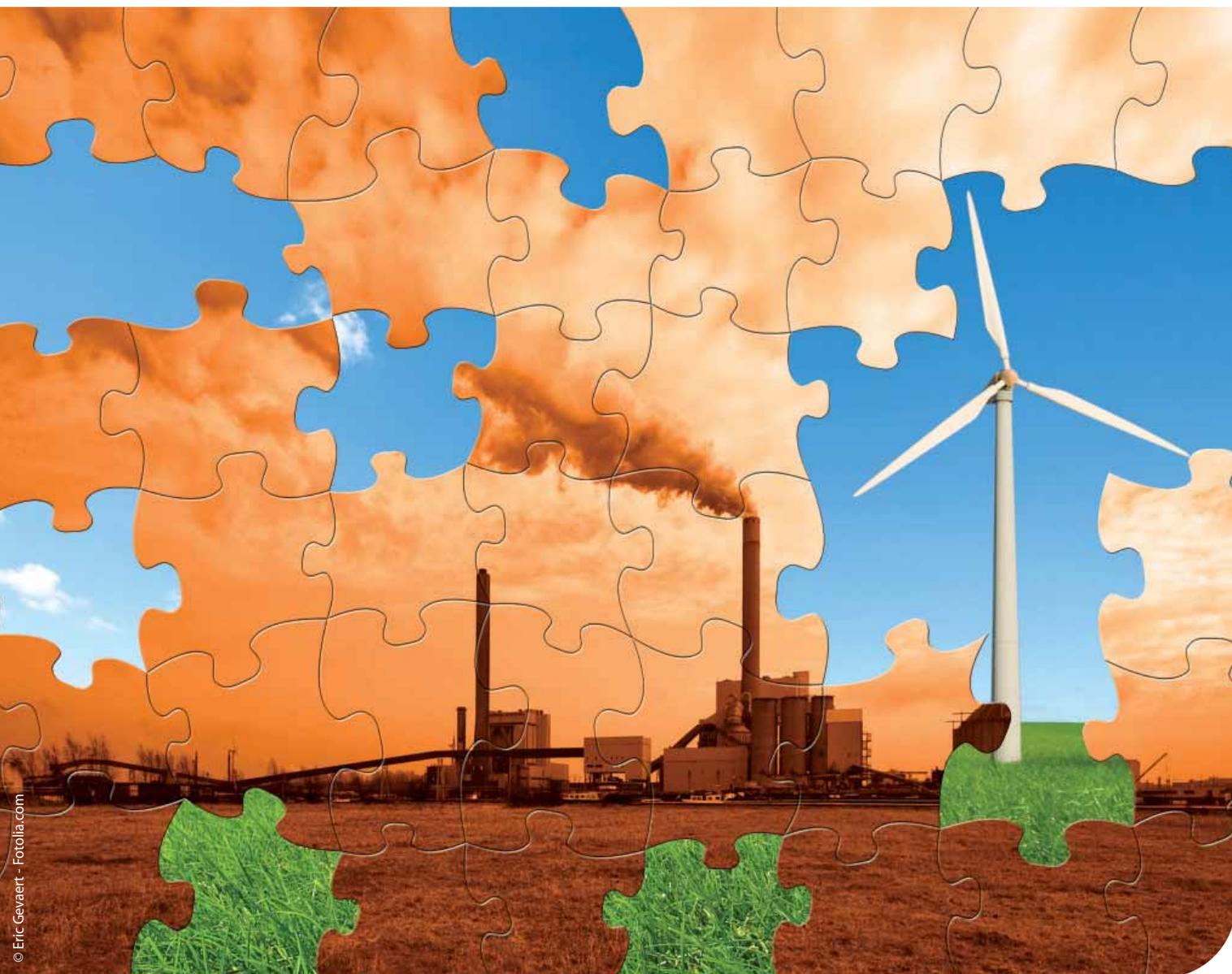
"Products placed on the EU market are probably more sustainable today than ever," according to Didier Herbert, Head of the Sustainable Industrial Policy Unit in the Commission's Enterprise and Industry DG. "But building European leadership in environmental performance requires sustainable products to become mainstream."

The EU's Ecodesign Directive, adopted in 2005, put in place a framework for setting eco-requirements for all products which consume energy while in use, such as refrigerators, televisions or boilers. Now, the Commission proposes to extend the Directive to cover all products which have an effect on energy consumption, even though they do not directly use energy themselves. For example, window design has a significant impact on the energy used to heat a house, and a shower-head governs the amount of hot water used while washing. Reducing the energy consumption of such products brings benefits in itself, provided that consumers are informed that such products are available in the market place.

Clearer choices

A new extended labelling system will provide information to consumers on the environmental performance of a wide range of products, helping them to make informed choices. Moreover, the existing Ecolabel scheme – which enables manufacturers to inform consumers reliably that their product is one of the best-performing in the market place – will be simplified to encourage a greater number of producers to make use of it.

The Commission supports a common approach across Europe to incentives for consumers who purchase sustainable products, based on the labelling system. This would help producers to offer sustainable products at lower prices, thanks to economies of scale. The Commission is also working to introduce guidelines for 'green public procurement', through which the huge purchasing power of



governments and public authorities across Europe (equivalent to 16% of GDP) can be leveraged to encourage industry to produce more sustainable products.

Leaner production

If European companies and entrepreneurs are to benefit from the increased demand that such measures could stimulate, eco-innovation will be crucial. The Commission is therefore proposing a number of measures to encourage small and medium-sized enterprises, in particular, to improve their environmental performance, and focus on eco-innovation as a means to boost their competitiveness. The Commission is looking at the barriers to eco-innovation, with the aim of developing an industrial policy which can overcome these to foster greater take-up of new eco-technologies.

In addition to the funding set aside within the Competitiveness and Innovation Framework Programme (CIP) to support the introduction of new environmentally friendly technologies and processes, the Commission will develop an environmental technology verification scheme. This will provide greater certainty about the claimed

environmental benefits of new technologies, for customers and investors alike, thereby speeding up their take-up.

These measures, backed up by advice services tailored for SMEs which want to do better in this area, are aimed at reducing the environmental impact throughout the life of a given product – minimising use of natural resources, energy consumption and pollution in both production and use, and ensuring disposal where recycling is not possible has lowest environmental cost. By focusing on so-called lean production, companies will ensure they are best placed to compete in markets where environmental factors are growing ever more significant, and ensure our children and theirs continue to benefit from a high quality of life. ■

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PAVING THE WAY FOR SAFER AND GREENER CARS

The European Commission has put forward proposals for a new car safety package which will simplify EU regulations in this area and greatly enhance road safety through the introduction of a number of mandatory new safety requirements. It will also help improve environmental protection through reduced CO₂ emissions and lower levels of noise pollution.

Adopted on 23 May 2008, the European Commission's proposal for a new regulation concerning type-approval requirements for the general safety of motor vehicles will have a threefold impact, as stated by European Commission Vice-President, Günter Verheugen in his presentation of the new 'car safety package': "We are simplifying legislation. We are improving road safety. We are promoting fuel efficiency. We are presenting a modern integrated policy approach beneficial for citizens, for the environment and the industry."

The proposal recommends the widespread adoption of a number of safety-enhancing technologies which have been developed by manufacturers over the last decade. These include electronic stability control (ESC), advanced emergency braking (AEBS) and lane departure warning systems. It also calls for the mandatory introduction of new requirements for motor-vehicle tyres aimed primarily at reducing fuel consumption and secondarily, noise levels.

Simplifying and harmonising

One of the principal objectives of the proposal is to do away with the large number of existing directives on car safety and replace them with a single regulation, directly applicable in the EU Member States and in line with harmonised UN standards. Most of the work on car safety standards is already being carried out within the United Nations Economic Commission for Europe (UNECE), with the close involvement of the EU.

"Instead of having a lot of different directives, which are basically copying the UN regulations, we will repeal most of the directives on car safety and refer to UN rules in the matter. This will remove the present duplication," comments the project officer from the Enterprise and Industry DG. "In certain areas, this will update safety requirements as in some cases EU rules have been left behind. It also has the advantage of ensuring greater international harmonisation of rules, simplifying things for the motor vehicle industry."

Better safety for all

The number of deaths on the road in Europe has fallen by 24% since 2001. Further progress in this direction over the next decade is most likely to come from technological advances which help improve the safety of vehicles. "A number of advanced safety technologies have been developed and introduced to the market," notes the official. "But their introduction is not even. It tends to be limited to top-end vehicles, or to certain Member States and not others. We are trying to even up the market and improve safety for all."

Electronic stability control (ESC) systems are a case in point. Numerous studies around the world confirm that ESC is highly effective in helping drivers maintain control of their cars, thus saving lives and reducing the severity of crashes. The proposed Regulation will make ESC mandatory on all new car models from 2012, and on all new cars (existing models too) from 2014.

Overview of new requirements

- *Mandatory electronic stability control (ESC) systems on new models and commercial vehicles by 2012 and on all new cars by 2014*
- *Advanced emergency braking (AEBS) on large vehicles from 2013*
- *Lane departure warning (LDW) systems on large vehicles from 2013*
- *Low rolling resistance tyres (LRR) on new models by 2012 and all new cars by 2014*
- *Tyre-pressure monitoring systems (TPMS) on all new models by 2012 and all new cars by 2014*
- *Wet grip safety requirements*

Preliminary estimates suggest that this is likely to save around 2 000 to 2 500 lives per year.

In addition, all heavy-duty vehicles will be required to have an advanced emergency braking system (AEBS) and a lane departure warning (LDW) system by 2013. This requirement may be extended to all vehicles in due course, but initially it will apply to large vehicles only. "This is for two main reasons," he says. "These systems are still very expensive but their cost is more easily absorbed in the overall cost of larger vehicles; and the consequences of accidents involving large vehicles are more serious – either because the weight of the vehicle causes more damage or because they are carrying a large number of passengers."

Reducing fuel consumption

The new 'car safety package' proposal also foresees the mandatory fitting of tyre-pressure monitoring systems (TPMS) on passenger cars and introduces a number of requirements for tyres aimed primarily at reducing fuel consumption and CO₂ emissions.

Tyre-pressure monitoring systems warn the driver when tyre pressure is low. Low pressure can increase fuel consumption by 4%, reduce tyre lifespan by 45% and can

cause accidents. Tyres can lose 3-6% of pressure every month which frequently goes unnoticed, so TPMS should contribute significantly to both greater fuel efficiency and safety. All new car models should have integrated TPMS by 2012 and all new cars by 2014.

With regard to tyres, all new car models will be required to be equipped with low rolling resistance tyres (LRR) by 2012. This will be extended to all new cars by 2014. This new type of tyre lowers fuel consumption by reducing the resistance to motion that occurs when the tyre rolls over the road surface. Again, one of the main benefits of this will be a reduction in fuel consumption.

The proposal also makes the requirements on rolling noise for tyres more stringent and introduces new requirements on tyres with respect to their wet grip. With regard to wet grip, the standards are not being changed from the existing situation, but a minimum standard has been set to ensure that other changes made do not compromise safety. ■

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SUSTAINABILITY FOR THE ELECTRICAL AND ELECTRONIC SECTOR

The Electra industry policy group for the electrical and electronic engineering sector was established last year to address the EU's policy objectives on climate change and on boosting growth and creating better jobs. The group presented its 20 key recommendations on 25 June. Taking the lead in improving products' energy efficiency will boost Europe's economy, saving every consumer money in the long term and allowing everybody to contribute to reducing environmental damage.



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The electrical and electronic engineering sector is an engine of economic growth in the EU, accounting for a turnover of about €320 billion a year and employing 2.8 million people in 18 000 companies. EU manufacturers account for 21% of the overall worldwide production of electrical and electronic products by value, behind China, which holds a 30% share, and just ahead of the USA and Japan, which each have a 19% share.

The sector's scope covers a broad range of technologies, equipment, systems, software and services, and includes the manufacture of such products as household appliances, electromedical equipment, cabling, wiring and lighting or complete power plants.

In addition, the electrical and electronic engineering sector plays a significant role as a key driver of innovation in the EU. Its manufacturers are among the most important suppliers to other industry sectors, such as transport, health, chemicals, and information and communications technology.

Facing globalisation and climate change

The Electra report makes key recommendations on how to boost the sector's competitiveness in the face of increasing globalisation, and on how industry can help the EU meet its commitment to achieve by 2020 a 20% improvement in energy



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efficiency, a 20% reduction in CO₂ emissions and a 20% share of renewables in energy consumption.

Electra was set up as a joint initiative between the European Commission and Europe's electrical and electronics engineering industry under the sectoral industrial policy initiatives in the framework of the 2005 Industrial Policy Communication.

The report was presented in Brussels on 25 June by Commission Vice-President Günter Verheugen, responsible for Enterprise and Industry, and Professor Edward Krubasik, co-chairman of Electra, along with Robert Mahler, President of Orgalime (the European Engineering Industries Association representing the interests of the mechanical, electrical, electronic, metal-working and metal articles industries).

Under the slogan "We can do it", Verheugen said the climate change policy presents an opportunity for industry to innovate and create better, more efficient products for Europeans and the world.

Electra represents one of the most important among a number of industrial sector initiatives supported by the Commission as part of the Lisbon Strategy's objectives of growth and job creation and is in line with sustainable development in Europe, he told attendees at the presentation.

The work goes beyond making proposals on innovation, growth and jobs, by connecting policies with Europe's industrial transformation to a low-carbon economy.

"Electra connects our most important industrial sector with our most important political and economic policies," he said.

Electra's 20 recommendations focus on the electrical and electronic sector's present and long-term competitive outlook in a globalised world. They deal with measures to promote the industry's growth beyond the current 4% annual increase in output and to boost job creation.

Energy efficiency as a driver of innovation

Improving energy efficiency, creating and supporting future lead markets for innovation, along with the design of an effective regulatory framework are the key areas that need addressing, the Electra report states.

The recommendations also outline measures to stimulate significant additional investments in the industry's key customer segments. All of the recommendations ultimately tie into the technologies and innovations that will drive energy efficiency and CO₂ reduction in the EU.

Among the recommendations is a call for an EU-wide set of harmonised energy-efficiency targets for products and systems. Incentives for consumers to invest in the most energy-efficient products are also needed.

Regulation must continue to support energy efficiency in buildings and homes. Minimum energy-efficiency requirements must be introduced progressively for products and systems, the report states.

The Electra team also calls for improved market surveillance to verify compliance with targets, and increased investment by public authorities in energy-efficient infrastructures.

Attracting investments

Fiscal and financial policies should be designed to attract investment and should be complemented by incentives for private input.

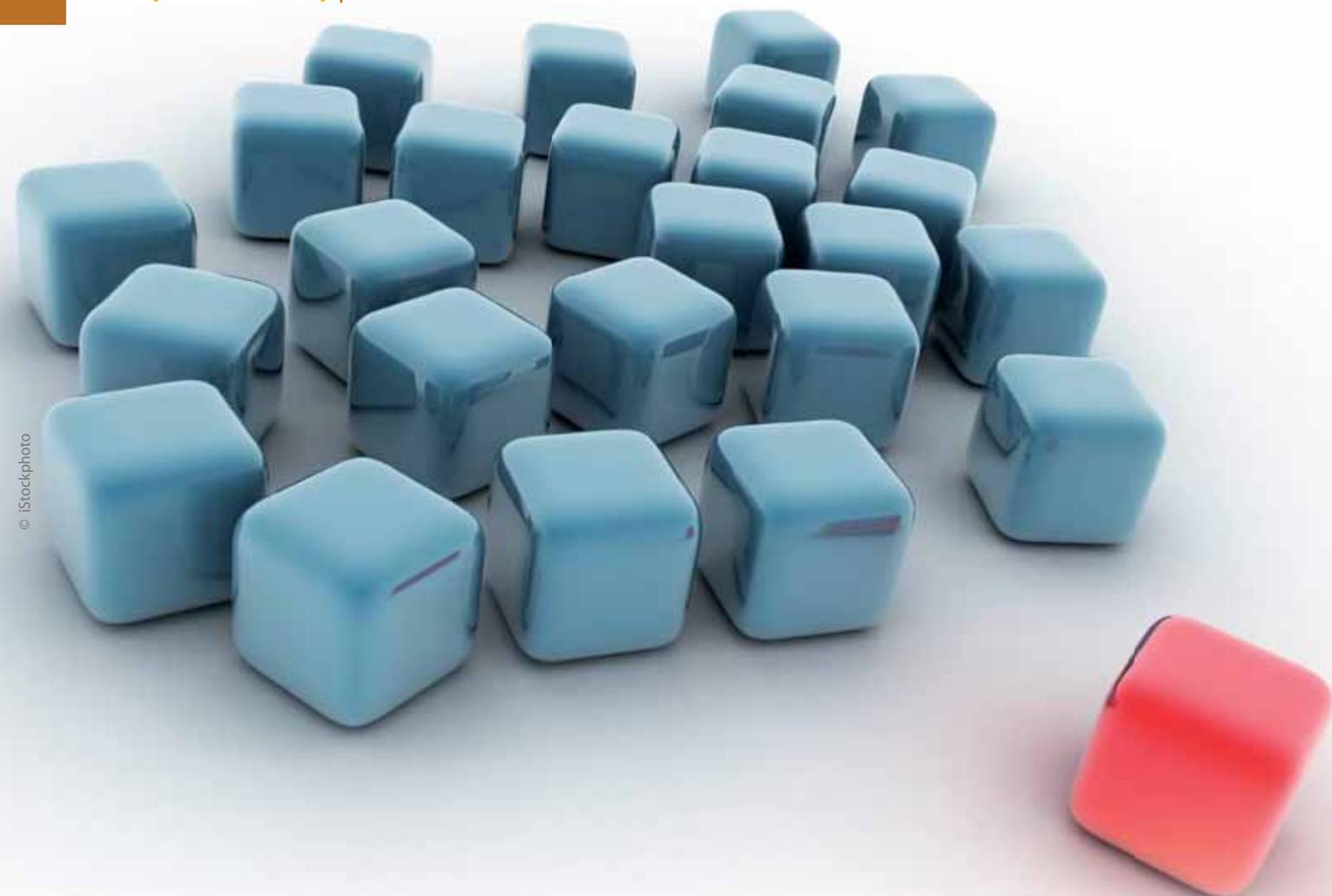
Energy-efficient products need to be bought by consumers who are aware of the role they play in a low-carbon economy. Policy-makers must foster research and development programmes that support the goals outlined for the industry, the report states.

Energy efficiency targets should be set for each EU Member State, based on the current conditions of each of their local environments. Member States' environmental policies need to be more consistent, while trading partners must align their own legislation to the EU's as far as possible.

Overall, Electra stresses that the move towards energy efficiency and CO₂ reduction targets is a driver of innovation in the industry, one that will keep manufacturers at the forefront of the competition and ensure job growth for Europeans. ■

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HELPING ENTREPRENEURS IMP³ROVE THEIR INNOVATION MANAGEMENT

As its name suggests, IMP³rove helps boost the capacity of SMEs to manage innovation. This EU-funded project is developing a range of tools and practices to encourage companies to recognise the importance of innovation management, and to apply such techniques to improve their competitiveness.

Innovation is about thinking out of the box and having the confidence and courage to pursue new ideas. Although, for many people, innovation is linked with high-tech firms, it has become a crucial component of the modern business cycle for all types of enterprises, especially SMEs which tend to be the most innovative.

And for innovation to work it needs to be managed: from the conception of an innovative idea, to its application and

marketing. Innovation management is not an end in itself, but is about developing and organising internal capabilities within companies and translating them into competitive advantages and profits in an increasingly competitive global market.

However, many SMEs and young innovative companies do not possess the entrepreneurial skills needed to exploit innovation successfully and survive against fierce competition. But equipping

them with these capacities is crucial both for their own success and Europe's economic health.

"SMEs employ two-thirds of Europe's industrial labour force. Therefore, their growth is crucial for the wealth and economic development of Europe," explains a desk officer in the European Commission's Support for Innovation Unit. "One of the key drivers for growth is innovation. Only with new products, services, business models, more efficient business processes and organisational structures can these SMEs secure the growth needed to compete."

Smoothing the road to innovation

To help European enterprises manage innovation more effectively, Europe INNOVA, the EU-backed network for innovation professionals launched IMP³rove – which is targeted at SMEs, consultancies, business intermediaries and policy-makers – to provide new and better innovation management tools.

The project covers a wide range of sectors, including information and communication technologies, knowledge-intensive services, biotechnology, space, and food and beverages. "The selection of these industry sectors was based on their relevance for the economy in European countries as well as their perceived innovation potential," the official points out.

With the project's assistance, SMEs can gain a clearer picture of their innovation-management performance and their potential for improvement. It will help innovation consultants and intermediaries to develop state-of-the-art innovation-management tools and to support enterprises better. "IMP³rove helped to develop tools for SMEs that were either not available before or simply not affordable for most SMEs, in particular in the new and southern Member States."

It will provide financial actors, such as banks and venture capitalists, with tangible means of evaluating companies and facilitating access to finance. On a more strategic level, policy-makers will obtain insights into key success factors for innovation management and the constraints on innovation faced by SMEs.

Know yourself

One major weapon in IMP³rove's arsenal is the on-line self-assessment tool which enables enterprises to evaluate their innovation-management performance, helping them to benchmark against competitors in the same sector across countries or across sectors within the same country. The results of this self-assessment can then be used for marketing and fund-raising purposes.

The tool uses a structured approach to assess all the dimensions of innovation management, including the strategic, organisation and cultural aspects. In addition, it is Europe's largest and most up-to-date database for innovation management in SMEs.

After a 12-month trial run in which over 2 000 SMEs tested the software, the full on-line assessment tool is now available. Entrepreneurs who have used it have so far reacted positively.

"IMP³rove is very important because of the integrated benchmarking, which allowed us to compare ourselves with other similar SMEs," said the CEO of a German chemical company. "Second, IMP³rove helped us to get a structured picture of our current innovation-management performance and identified important gaps and improvement potential; and third, to be honest, we saw that there are many things we probably knew, but now we are sure that these must be put in an appropriate structure to define the right goals for the future."

"[IMP³rove] helps you to stop and think which are the issues that really matter for the development of your business," commented the development manager of a Finnish ICT firm.

In addition, IMP³rove helps link SMEs up to various 'competence networks' across Europe where they can get additional support.

Innovation relays

IMP³rove offers numerous benefits for innovation-management consultants and intermediaries. The platform is helping to set European standards by providing a holistic and integrated approach to innovation management. It also offers training and support that will enable them to give their clients the best innovation-management services. Moreover, it provides consultants with useful benchmarks and client feedback on their services.

In addition, the project is laying the foundations for a European innovation-management certification system, building on the self-assessment tool and the experience gathered from IMP³rove.

"During the IMP³rove field test, it became obvious that there is as yet no common understanding of what constitutes effective and efficient innovation management," explains the Commission official. "SMEs which seek support in improving their innovation-management performance currently have no means for assessing the quality of the services that are offered in the market. An innovation-management certification system will provide this means and set the minimum standard for the assessment of innovation management and related services offered to SMEs." ■

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BROADENING HORIZONS FOR EUROPE'S SMES

Globalisation is both an opportunity and a threat for Europe's SMEs, whose capacity to operate on an international level will determine their long-term competitiveness. Yet, the vast majority of smaller European firms continue to limit their operations to their own country. A recent EU report seeks to identify the factors which impede, or support, the internationalisation of companies in Europe.



Increasingly, companies are being called upon to broaden their horizons and compete on an international basis.

'Internationalisation' has been proven to be one of the key drivers of competitiveness and growth and, indeed, a full 63% of European Union citizens are in favour of globalisation (Flash Eurobarometer 151b). However, European SMEs have difficulties embracing this global trend and the opportunities it offers. According to a report from the European Observatory of SMEs, only 8% of SMEs in the EU export, only 12% of the inputs of an average SME are purchased abroad, and only 5% of companies obtain income from foreign business partnerships.

Concerned about the low level of internationalisation of European SMEs, the European Commission launched a BEST project, at the end of 2006, on 'Supporting the internationalisation of SMEs'. An expert group, including high-level representatives from across the EU and associate countries, was set up to examine national and regional policies to promote more international trade by SMEs, both within the EU and outside it.

"The aim was to analyse the factors which facilitate or hinder internationalisation, to identify existing policies that encourage or support SMEs in going in this direction, and provide policy recommendations for the future," notes the project officer from the European Commission's Entrepreneurship Unit.

Identifying good policy and good practice

The 'Internationalisation of SMEs' expert group met four times between November 2006 and December 2007 and produced two final documents which should make a significant contribution to the definition of policies and programmes aimed at increasing the international orientation of European SMEs.

A 'Final Report of the Expert Group on Supporting the internationalisation of SMEs' was published in early 2008, and a good practice brochure presenting a collection of 27 national programmes, identified as providing examples of good practice in support of the internationalisation of SMEs, was distributed for the first time at the conference of the European Charter for Small Enterprises in Bled, Slovenia, in June 2008.

The final report is based on the recommendations of the experts and supported by statistical data and studies. It provides a good overview of the current situation across the EU with regard to the internationalisation of SMEs and offers an insight into the barriers that exist and how they may be overcome.

The importance of public support

"One clear message to emerge from the report is the vital importance of public policy support," according to the Commission official. "The existence of public support

programmes makes a major difference. Many SMEs would not even consider going international if it were not for support received from public agencies. This makes public support not only helpful, but absolutely necessary."

The report also identifies the need for better communication and greater clarity in the provision of support services. "There are too many different support agencies and networks, and better coordination is needed," he says. The main reported reasons for failure to move outside the national market are a lack of financial resources and, most of all, a lack of the skills and/or people required to tackle internationalisation. "There is a need for more international entrepreneurs. In the long term this should be fostered through the national education systems. Education systems need to create entrepreneurs with the necessary language skills, international outlook and understanding of business in an international context."

Looking to the future

The expert report recommends better coordination of policies and programmes to support internationalisation, as well as greater involvement of SMEs themselves in defining policy. It also stresses the importance of raising awareness among SMEs of the value of extending their vision beyond national boundaries. It suggests that, whilst the national level is probably the best for the development and coordination of policies, for maximum impact they should be implemented at regional/local level. It also recommends support to networks, promotion of lifelong training, and an emphasis on internationalisation rather than simply exports.

The next step for the project will be the completion of an in-depth study to identify the state of play with regard to internationalisation in European SMEs. "This should provide a clear overview of the extent of the problem, with an analysis by sector, type of activity, size of the enterprise, and so on," concludes the official. The study is now under way and should be completed by the end of 2009. ■

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NEWS IN BRIEF

SIMPLER APPROVALS FOR HYDROGEN CARS

Manufacturers will soon be able to bring new hydrogen-powered vehicles on to the EU market with a single approval process valid in all Member States. The European Parliament has backed the Commission proposal, and Council approval is expected to follow soon. This represents a big step forward in introducing cleaner, hydrogen-powered cars to the market. In particular, the common standards agreed at EU level should encourage manufacturers to introduce new models faster.

www.ec.europa.eu/enterprise/automotive



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<http://webcast.ec.europa.eu/dgnttv/portal/>



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EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY

The European Institute of Innovation and Technology (EIT), the EU's flagship initiative for boosting innovation in Europe, recently marked the launch of its activities with the first meeting of its Governing Board. The meeting took place in the Institute's host city of Budapest on 15 September 2008.

www.ec.europa.eu/eit



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SAFER ROADS FOR PEDESTRIANS

Some 8 000 pedestrians and cyclists are killed on EU roads every year. To bring down this figure, the European Commission wants to see passenger cars fitted with Brake Assist Systems (BAS) which reduce the stopping distance required in an emergency. Now the European Parliament has backed the proposal, BAS could be fitted to new cars as soon as 2009, if the Council also agrees on the proposal.



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STRATEGY ON INDUSTRIAL PROPERTY RIGHTS

Effective protection and enforcement of industrial property rights (IPR), particularly for small and medium-sized enterprises, is a critical factor in fostering innovation. The European Commission has adopted a strategy which seeks to maintain a high-quality industrial property rights system for the EU in the 21st century by ensuring the IPR systems in the European single market as a whole are accessible

to SMEs and innovators, provide protection against piracy and counterfeiters, and are made more effective. The strategy will be implemented in parallel with efforts to introduce a Community patent and integrated patent jurisdiction.

www.ec.europa.eu/internal_market/indprop/rights



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ENSURING SAFETY FOR NANOTECHNOLOGY

Nanomaterials, which are at the heart of more and more new products coming on to the market, can drive competitiveness and improve quality of life. At the same time, they raise concerns for health, safety and environmental protection. According to a recent Commission Communication, current EU legislation covers in principle, and without excluding regulatory change where necessary, risks in relation to health, safety and environment. However, in order to ensure a smooth implementation, there is further need for research and international co-operation in order to bridge current knowledge gaps.

www.ec.europa.eu/nanotechnology



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UPCOMING EVENTS

European e-Skills 2008 Conference, 9-10 October, Thessaloniki

Developing e-skills throughout Europe's workforce is an essential element of lifelong learning, and vital to improving the competitiveness of European enterprises. This conference will focus on the development of a long-term e-skills strategy in Europe, following up the European Commission's 2007 Communication.

www.eskills.cedefop.europa.eu/conference2008

World Standards Day, 21 October, Paris

This conference concentrates on the importance of standardisation for small and medium-sized enterprises. It will look at how SMEs can use standards to grow their businesses, and how SMEs can become more involved in standard-setting, either directly or through representative organisations, particularly sectoral associations.

www.ec.europa.eu/enterprise/standards_policy/international/world_standards_day/2008_en.htm

Europe INNOVA Conference 2008, 22-24 October, Lyon

This regular event brings together a wide range of professionals involved in facilitating innovation in enterprises across Europe, from innovation agencies, technology transfer offices, research centres and incubators, for example. Europe INNOVA is one of the Commission's major innovation-support initiatives, and the conference enables hundreds of participants to share experiences and make new contacts. The focus of this year's event will be on identifying means to accelerate innovation in companies.

www.europe-innova.org

'Preventive mechanism for barriers to trade' seminar, 12 November, Brussels

This seminar marks the 25th anniversary of the EU's preventive mechanism against barriers to trade (set out in Directive 98/34, renewing the original Directive 83/189), through which Member States must publicly notify the Commission of all draft technical measures which might constitute a barrier to trade in goods. The event will facilitate a review of how well the mechanism has helped business, SMEs in particular, and identify possible means of improvement.

www.ec.europa.eu/enterprise/newsroom/cf/itemlongdetail.cfm?item_id=1687

European Ministerial Conference on Clusters, 13-14 November, Sophia Antipolis

The conference will commence with wide-ranging discussions on topics such as finance, co-operation, involvement of SMEs, and taking on new competences, which are significant for the development of clusters in Europe. On the second day, ministers from Member States, together with the European Commission, will work on a common strategy for EU cluster policy.

www.sophia-antipolis.org/actualites/agenda/2008/novembre2008.htm

ENTERPRISE & INDUSTRY *magazine*

The *Enterprise & Industry* on-line magazine provides regular updates on policy development, on legislative proposals and their passage to adoption, and on the implementation and review of regulation affecting enterprises. Articles cover issues related to SMEs, innovation, entrepreneurship, the Single Market for goods, competitiveness and environmental protection, better regulation, industrial policies across a wide range of sectors, and more. In short, it addresses all EU policies under the responsibility of the European Commission's Directorate-General for Enterprise and Industry.

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