Eco-innovation: the key to Europe’s future competitiveness

- Eco-innovation is any innovation resulting in significant progress towards the goal of sustainable development, by reducing the impacts of our production modes on the environment, enhancing nature’s resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources.

- By supporting new processes, technologies and services that make business greener, eco-innovation helps Europe optimise its growth potential while addressing our common challenges such as climate change, resource scarcity and dwindling biodiversity.

- Eco-innovation is also an opportunity for businesses. Eco-innovation leads to reduced costs, helps capture new growth opportunities and strengthens the company image in front of its customers.

- This is why the EU needs to accelerate the transformation of good ideas into business and industrial development by removing economic and regulatory barriers and promoting investments, demand and awareness.
What is eco-innovation?

Eco-innovation refers to all forms of innovation – technological and non-technological – that create business opportunities and benefit the environment by preventing or reducing their impact, or by optimising the use of resources. Eco-innovation is closely linked to the way we use our natural resources, to how we produce and consume and also to the concepts of eco-efficiency and eco-industries. It encourages a shift among manufacturing firms from “end-of-pipe” solutions to “closed-loop” approaches that minimise material and energy flows by changing products and production methods – bringing a competitive advantage across many businesses and sectors.

Towards an integrated approach

The Commission adopted in 2010 the Europe 2020 strategy for a smart, sustainable and inclusive growth. This switch to sustainable growth will be triggered by greater innovation and by managing our resources more efficiently.

Seven flagship initiatives will help deliver the objectives of the strategy, including the Resource-Efficient Europe and the Innovation Union flagship initiatives.

The Resource-Efficient Europe initiative recognises the role that eco-innovation can play and details the support foreseen under numerous EU policy instruments. The associated Roadmap towards a Resource-Efficient Europe outlines how we can achieve a resource-efficient growth and suggests tools and indicators to help guide action in Europe and internationally.

The Innovation Union sets out a bold, integrated and strategic approach, exploiting and leveraging our strengths in new and productive ways. The initiative called for the adoption of an ‘Eco-innovation Action Plan’ focusing on the specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation.

Boosting competitiveness and environmental protection

A clean and healthy environment is a precondition for maintaining prosperity and a high quality of life in Europe. But so is the strength and competitiveness of the economy.

Developing and promoting new solutions is fundamental to unleashing the potential for economic benefits through cost savings, innovation and international trade.

Environmentally-friendly solutions will attract a new generation of high-tech manufacturing and services, increase European competitiveness and create new high-skilled jobs.

Europe needs to focus on stimulating demand for innovations. The European Commission has a considerable experience in demand-led tools and significant practice in setting up networks of public procurers and developing partnerships.

New challenges call for new solutions

The world is facing serious environmental challenges such as climate change, the depletion of natural resources and biodiversity loss. Novel economic and social models and technologies to create clear and substantial environmental benefits are needed.

In this context, Europe needs to do more with less and maximise efficiency at all stages of production. Environmental innovation can help European businesses come up with sustainable solutions that make better use of precious resources and reduce the negative effects of our economy on the environment. In this way eco-innovation can help us deliver greater resource efficiency and green economic growth.

Despite the opportunities that eco-innovation offers to companies, more effort is needed as gaps still exist when it comes to implementation. There are large differences between countries, sectors, and not enough companies are undertaking eco-innovation to the scale needed.

For that reason, boosting eco-innovation and addressing its barriers has become a priority for the European Commission.
A growing business sector

Environmental challenges and resource constraints have led to a growing demand for environmental technologies and facilitated the emergence of eco-industries. Europe is in a strong position to lead the way in using the power of innovation to meet today’s challenges. This is also a great opportunity to step up its investment in this fast-growing sector.

European eco-industries have emerged as an important segment of the European economy, with an estimated annual turnover of EUR 319 billion or about 2.5% of the EU’s GDP in 2008 and employ 3.4 million people directly.

The global market for environmental industries was worth EUR 1 trillion in 2007, with energy-efficient technologies playing a large part (EUR 450 billion).

Obstacles to getting from research to market

While Europe is a leader in new technology development, it can sometimes be difficult for a product to penetrate the market from the research stage. There are many barriers to the development and wider use of environmental technologies.

Market demand for environmental technologies in the public and private sectors is low for a number of reasons. These include the lock-in to existing technologies, price signals that tend to favour less eco-efficient solutions, difficult access to finance and low consumer awareness.

Switching from traditional to environmental technologies is a complex process. It may involve economic barriers such as higher investment costs resulting from perceived risks and significant start-up costs. Complicated access to finance in this area also hinders the move, from drawing board to production line.

Support systems for innovative enterprises are inadequate and private investment into research across Europe needs a boost. Applied research, and cooperation between the science and industry sectors in particular, need greater support.

Encouraging market take-up

The challenge is therefore to improve the overall environmental performance of products throughout their life-cycle, to boost the demand for better products and production technologies and to help consumers make informed choices.

To encourage greater take-up of environmentally-friendly technologies, the EU is using a variety of tools including green public procurement, eco-labelling, environmental technology...
verification, financial incentives, voluntary agreements and industry standards.

The EU has also designed specific financial measures to share the risks of investing in eco-innovation. The rules on state aid for environmental protection have been adapted to allow more effective support for innovative technologies.

Finally, evidence shows that well designed environmental legislation can act as a driver for innovation. Results from companies that comply with such legislation show that their overall costs have decreased significantly.

**Changing the way we consume and produce**

There are many areas where technology is helping us to solve the major environmental challenges facing us. But technology alone is not the answer. Big changes are needed to the way we consume and produce goods and services. The market price of many conventional products and services often fails to reflect their true environmental and social costs. European consumers and producers need to play their part in a low carbon, energy and resource-efficient economy in order to protect and preserve the planet.

**Working together**

EU Member States as well as regions have an important role to play in supporting and promoting new technologies. Based on the lessons learned, national voluntary eco-innovation roadmaps to facilitate policy learning between Member States will be developed.

The EU is also working with other countries and regions to promote sustainable development on a global scale. It is especially important for developing countries, where addressing the detrimental environmental impact of production activities and lessening the impact of a growing population on scarce resources is becoming increasingly urgent.

At the same time emerging economies offer significant markets and partnership opportunities for European eco-innovators. The European Commission actively advocates the reduction or removal of trade tariffs on environmental products, technologies and services.

**Funding for eco-innovation**

To encourage investment in environmental processes and technologies, the EU has developed a range of instruments that focus on environmental innovation and entrepreneurship. Under the EU’s Competitiveness and Innovation Framework Programme, a total of EUR 430 million is available for the promotion of eco-innovation through different forms of assistance, like risk capital financing or networking activities. Nearly EUR 200 million has been earmarked to support market replication projects on eco-innovation, reaching out to the business sector. For more information, visit: http://ec.europa.eu/ecoinnovation/

There are also financing opportunities for environmental services and technologies under the EU’s funding programme LIFE+. LIFE co-finances projects that contribute to the development and demonstration of innovative policy approaches, technologies, methods and instruments, mainly addressed to the public sector. For more information, visit: http://ec.europa.eu/environment/life/funding/lifeplus.htm

Running from 2014 to 2020 with a EUR 80 billion budget, the EU’s new Horizon 2020 programme for research and innovation is the financial instrument implementing the Innovation Union. Horizon 2020 will support not only research into new solutions, but also their piloting, demonstration and market uptake it will facilitate the transition from research to market, thus helping achieving the full impact of EU funding.

**Further Information**

European Commission EcoAP
http://ec.europa.eu/environment/ecoap/

Eco-innovation Observatory
http://www.eco-innovation.eu/

Resource-efficient Europe Flagship initiative
http://ec.europa.eu/resource-efficient-europe/

Innovation Union Flagship initiative
http://ec.europa.eu/research/innovation-union/index_en.cfm

European Commission Competitiveness and Innovation Framework Programme
http://ec.europa.eu/cip/index_en.htm

LIFE+ programme
http://ec.europa.eu/environment/life/about/index.htm#lifeplus

Horizon 2020 – The Framework Programme for Research and Innovation
http://ec.europa.eu/research/horizon2020/index_en.cfm

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