



European  
Commission

# BOOSTING GROWTH AND JOBS

Success stories from EU environment policy



Environment

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Due to ongoing legislative negotiations in various areas of environmental policy the information in this brochure might be subject to change in the coming months. However at the time of publication there is already significant evidence of the impact of environmental legislation on jobs and growth. With the planned policy revisions such trends are set to continue in the future.

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# Foreword



**Effective environmental policy can give a real boost to jobs and sustainable growth. I am proud to present this brochure, which highlights where we have been successful by working together.**

Europe's environment policy is delivering some excellent results. This brochure reviews a selection of the benefits brought by EU action

in areas like air, water, nature, and the circular economy but environmental policy does not exist in a vacuum. For every policy there must be someone to implement it. And because so much of our policy is about doing things in a new way, that means new job opportunities. That is why environmental policy is a sound investment.

Evidence about the economic relevance of markets for environmental goods and services is growing. Between 2000 and 2014, employment in eco-industries grew by 20% to reach 4.2 million jobs, with a turnover of around EUR 700 billion. Backed by a circular economy approach, companies can expand their markets and create new jobs, while transforming existing ones.

The Commission is determined to continue strengthening the links between environment policy and growth and jobs. Creating a sustainable future requires investment in our environment.

Europeans share this view. In a 2014 Eurobarometer survey, four out of five people interviewed agreed that the efficient use of natural resources can boost economic growth.

Achieving the EU's clean air objectives by 2020, for example, will yield health benefits that are between 12 and 37 times greater than their cost. Investing in nature protection brings advantages of a similar order – a recent Finnish study estimated that EUR 1 of public investment in protected areas brings a EUR 20 return.

This brochure illustrates how opportunities can be translated into further success. Success that makes most sense to the people of Europe – new job opportunities, and healthier lives.

*Happy reading!*

***Karmenu Vella, European Commissioner  
for Environment, Maritime Affairs and Fisheries***

# Waste management

Waste management and recycling industries in the EU have a turnover of EUR 145 billion (2008) representing around 1% of the EU's GDP and 2 million jobs. It has been estimated that full compliance with existing EU waste rules could create an additional 400 000 jobs and an extra annual turnover of EUR 42 billion by 2020.

Every year, some 2 billion tonnes of waste – including particularly hazardous waste – are produced in the Member States, and this figure is rising steadily. Stockpiling waste is not a viable solution, while destroying it produces harmful emissions and highly concentrated, polluting residues.

The best solution, as always, is to prevent the production of such waste by changing product design, increasing product life and developing new resource-efficient business models. Waste is a resource which should be reintroduced into the product cycle as a secondary raw material by recycling its components where there are ecologically and economically viable methods for doing so. The circular economy is an economic model that treats waste as a valuable resource – nothing is wasted. It's good for the environment, good for business and good for the economy. The Commission adopted the Circular Economy package in December 2015. The Package proposes a ban on landfilling separated waste, maximum 10 % landfilling of municipal waste, 65 % of municipal waste and 75 % of packaging waste to be recycled by 2030.

The principal business opportunities in waste management are in repair, collection, sorting, processing, end-use, remanufacture and recycling technologies. Increased reuse and recycling put resources back into the economy and ensure cheaper, more reliable access to raw materials, which is indispensable for the EU's industrial competitiveness and for a real move towards a circular economy.

Higher recycling rates will ease the pressure on demand for primary raw materials, reduce the EU's dependency on some key raw materials (today the Union imports six times more resources than it exports), help to reuse valuable materials which would otherwise be wasted, and cut energy consumption and greenhouse gas emissions coming from extraction and processing.

# Keeping the coast clear

Portugal's central coastal region will soon be setting the standard for handling solid waste generated in urban areas, thanks to new facilities for transporting, processing and recycling waste. Some 87 new jobs have been directly created as a result, with economic benefits felt throughout the region.

The geographical area covered includes 36 municipalities and their 970 000 residents. The key features of the work involve the construction of two units for the mechanical and biological treatment of solid urban waste, including biogas energy production, and the construction of one new transfer station. Heavy equipment has been purchased for waste transportation, and land acquired for housing the facilities.

These investments have resulted in high-quality treatment processes and greater levels of recycling. The volume of urban biodegradable waste was estimated at 80 734 tonnes for 2010, rising to 123 122 by 2015, while the percentage of the urban biodegradable waste actually treated was estimated at 66% for 2010, increasing to 100% by 2015.

The new multi-municipal system will help meet the goal of environmental sustainability by reducing landfilling. It will also make the region a more attractive place in which to live and invest.

**SUBJECT:** Portuguese coast

**COUNTRY:** Portugal

**RELEVANT EUROPEAN LEGISLATION:**

■ Waste Framework Directive 2008/98/EC<sup>1</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Less landfilling
- Benefits for some 970 000 residents
- Around 87 new jobs created
- 100% of urban biodegradable waste to be treated by 2015

# Closing a landfill site in Estonia

The closure of an industrial waste and semi-coke landfill in Kohtla-Järve, Estonia, has created jobs and enhanced the attractiveness of the region for both residents and tourists.

This planned closure came about primarily in response to environmental concerns. Waste water and other contaminants were seeping into the surrounding environment, presenting a clear health hazard.

First and foremost, the objective was to stop environmental pollution, thereby helping Estonia to comply with relevant EU environmental legislation. Construction work enabled the closure of the pitch lakes and soil works, along with the establishment of water-management facilities.

The project created 78 jobs during the initial implementation phase, but the main economic and social benefits will be felt over a longer period of time. Indeed, the closure of the landfill marks the start of a programme of regeneration that will greatly benefit the inhabitants of the Kohtla-Järve region, along with workers in industrial enterprises nearby. Furthermore, the closure will also increase the region's attractiveness to visitors.

**SUBJECT:** Closing down the industrial waste and semi-coke landfill in Kohtla-Järve

**COUNTRY:** Estonia

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- Council Directive 1999/31/EC on the Landfill of Waste<sup>2</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Some 78 jobs created
- More tourism



# Creating clean energy in Malta

A plant designed to process organic waste in large ‘digesters’ and to extract biogas to produce clean energy was completed in Malta. The country has benefited not only environmentally and economically from the facility but also in social terms, through the creation of 65 direct and four indirect jobs.

The Sant’ Antin waste-treatment plant, which opened in late November 2010, has already had a positive impact on the surrounding environment. The system ensures that nothing is left as waste. The end products from the process are used as compost in farming, and the heat generated by the digester is transferred through pipes to a nearby building to heat a swimming pool.

The plant has been processing 71 000 tonnes of waste annually. It is so safe and odour-free that the operating company has moved all the 150 administrative staff on-site, close to where the waste is being treated. Meanwhile, the surrounding area, which was used as a landfill between 1974 and 1979, has become a recreational park for families cofinanced by the EU and employing 250 people. Moreover, the electrical power produced from biogas has helped to reduce the cost of electricity for 1400 households.

**SUBJECT:** Sant’ Antin waste-treatment plant

**COUNTRY:** Malta

**RELEVANT EUROPEAN LEGISLATION:**

- Council Directive 1999/31/EC on the Landfill of Waste<sup>2</sup>
- Waste Framework Directive 2008/98/EC<sup>1</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Cheaper electricity for 1400 households
- Some 65 direct and four indirect jobs created
- Processing of 71 000 tonnes of waste annually
- Creation of a recreational park employing 250 people

# Eco-innovation

**Eco-innovation contributes towards the achievement of sustainable development. Nearly half of all EU companies in the manufacturing, construction, agriculture, water supply and food services sectors implemented some form of eco-innovation between 2012 and 2014.**

There is strong evidence that process eco-innovations can save companies material and energy costs, and can be achieved with relatively small investments. An increasing number of information sources are available for companies interested in improving their material efficiency.

More than half of innovative enterprises reported that these innovations had environmental benefits, (Eurostat 2017). A 2011 Eurobarometer survey found that up to 45% of EU companies in the manufacturing, construction, agriculture, water supply and food services sectors reported implementing eco-innovation between 2009 and 2011, with the majority achieving incremental-type improvements in resource efficiency.

While these are positive developments, indicating a greater push for efficiency, the potential for eco-innovation to create sustainable growth and jobs remains largely untapped. Eco-innovation provides opportunities for job creation in the switch-over to a greener economy, helps modernise labour markets and has the potential to make a significant impact on Europe's environmental and competitiveness goals.

This is why the European Commission has invested in programmes such as eco-innovation market replication, an initiative managed by EASME (Executive Agency for Small and Medium-sized Enterprises), which replaced EACI (Executive Agency for Competitiveness and Innovation) as of 1 January 2014, on behalf of DG Environment. Eco-innovation market replication is intended to promote new approaches to protecting the environment and to contribute to competitiveness and economic growth. Doing so requires replacing the current resource-intensive economy with a resource-efficient one, including the transformation of established industries into green high-value-added industries that create jobs while protecting the environment.

Currently, around 250 projects on recycling, food and drink, construction materials, clean production, green business and water have received financing, around 60% of which have never applied for any public funding. Around 80% of participants come from the private sector, the majority being SMEs (almost 70%). An overwhelming majority of these SMEs are small and micro-SMEs (around 80%).

An evaluation of the programme revealed that, despite its young age with first projects starting in 2009, economic impacts are already substantial; 30% of projects have already led to commercial benefits. Project leaders indicate an average leverage factor of around 20 (EUR 1 of public investment in eco-innovation leads to a gross revenue leverage factor of x20, two years after the project ends).

The average net employment generation is around eight people (full-time) per project. Environmental benefits result in a monetised benefit of EUR 833 million.

# Tapping growth in green packaging for drinks

GreenBottle is a major packaging innovation with the potential to replace plastic bottles, glass bottles and laminated carton systems in the multi-billion-euro global liquid-packaging market.

Every day, an estimated 15 million plastic bottles are needlessly thrown away in the UK alone. While recycling rates are increasing across Europe, plastic still finds its way into landfill sites, where it does not biodegrade.

Seeing a gap in the market, a new type of liquid packaging has been designed and developed as an environmentally friendly alternative to plastic bottles and laminated cartons. The GreenBottle is made from a paper outer shell with a thin plastic liner to hold the liquid.

After use, the bottle components are easily separated, so that the paper outer layer can be composted or recycled, and the inner liner recycled where facilities exist. GreenBottle has a much lower carbon footprint than a regular plastic bottle, and just a third of the plastic content of a comparable plastic bottle.

The green milk bottle was rolled out in all ASDA/Walmart stores in the UK as from January 2012, delivering 10 million bottles annually. Similar packaging solutions have been developed for other major liquid categories, such as juice, liquid detergents, wine and food sauces.

**SUBJECT:** GreenBottle innovation

**COUNTRY:** UK

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- The Eco-Innovation Action Plan (Eco-AP) - COM(2011) 899 final<sup>5</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Market entry
- 10 million bottles produced annually
- Less waste
- Resource savings
- Job opportunities

# Turning old TVs into tiles

An innovative solution for recycling cathode ray tube (CRT) glass in old television sets has been developed, and a potential new market for environmentally friendly building materials opened up.

A recent European study showed that the CRT television market is declining and being superseded by liquid-crystal display (LCD) and plasma TVs. The disposal of CRT TVs means a lot of glass, a lot of waste and a market opportunity.

Through innovative cooperation between two European industrial sectors – ceramics and recycling – a practical solution has been found: turning the glass from these old TV sets into tiles. Initial research found that only 30 television sets were needed to provide the tiling raw materials for a 70 m<sup>2</sup> apartment. Around 60 000 TVs sets have since been transformed into tiles.

In environmental terms, this means a saving of 20% on non-renewable raw materials (such as feldspar) and an 81% reduction in carbon dioxide emissions from the extraction and transportation of raw materials. In practical terms, the building industry now has an environmentally friendly product that meets growing consumer – and regulatory – expectations of green building materials.

The Glass Plus innovation is an excellent example of front-line national industries – electronics, recycling, and ceramics – co-operating to create value through making innovative and eco-sustainable products.

**SUBJECT:** Glass Plus innovation

**COUNTRY:** Italy

**RELEVANT EUROPEAN LEGISLATION:**

- Council Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE)<sup>3</sup>
- Council Directive 1999/31/EC on the Landfill of Waste<sup>2</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Untapped market opportunity
- Energy-efficient product
- Some 60 000 TVs recycled to date
- New jobs, less waste

# Recycling using sensor technology

Sensor-based sorting technologies are being used to recover significant volumes of increasingly valuable non-ferrous metals from municipal waste, leading to cost efficiencies and new business within the EU.

This was demonstrated with the recent installation of a new state-of-the-art pilot plant in Salzgitter, Germany. Using advanced sensor-based sorting technologies with separation rates of more than 98% and purity rates over 90%, the plant is capable of recovering non-ferrous metals such as aluminium and copper from pre-concentrates in municipal waste.

Non-ferrous metals like aluminium or copper have to be purified before they can be used as secondary raw materials. In the past, this was often done manually, usually outside the EU. By establishing a more cost-effective automated process, the German pilot plant has demonstrated that sorting can take place within the EU.

The innovation has the potential to increase added value in the European recycling sector, enhance energy efficiency in non-ferrous metal production, and ensure the sustainable development of resources. Crucially, it will also help to keep recyclable, valuable resources within Europe, thereby supporting businesses in this field.

Indeed, at the moment, no comparable or similar solutions for the treatment of such waste are available in Europe. The main competition for this new SATURN (sorting automated technology for advanced recovery of non-ferrous metals) technology is coming from scrap-metal dealers who sell the pre-concentrates to countries outside Europe.

**SUBJECT:** SATURN innovation

**COUNTRY:** Germany

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- Council Directive 1999/31/EC on landfill of Waste<sup>2</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Recycling and resource efficiency
- Keeping business in Europe
- Less waste: separation rates of over 98%

# Making European fashion environmentally conscious

European manufacturers are shredding and re-spinning cast-offs into next season's fashions.

Until now, raw material prices and the high cost and complexity of sorting and recycling have made the re-spinning of cast-offs an unattractive business proposition. The Textiles 4 Textiles (T4T) automatic sorting system enables the higher value recycling of second-hand garments and textiles.

The innovation is capable of sorting textile materials according to fibre composition (cotton, wool, polyester, blends) and colour. This ability is based on near-infra-red spectroscopy (NIRS) and sorting algorithms.

The system guarantees buyers of sorted textiles consistent quality in terms of composition. As reclaimed fibres are among the most environmentally friendly textile materials, the innovation should help make textile products more sustainable, and contribute to EU objectives of reducing unnecessary waste.

This is significant since the textile industry does not have a strong reputation for environmental innovation, with its traditionally extensive use of natural resources, water and pesticides. The high-value recycling of post-consumer garments and textiles should therefore help to reduce the sector's environmental impact and create new opportunities to make textiles from post-consumer textile waste.

**SUBJECT:** Textiles 4 Textiles project

**COUNTRY:** The Netherlands

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Resource efficiency
- New market opportunities
- Jobs



# Waste water

**Implementation of the Urban Waste Water Treatment Directive in 1991 has led to impressive increases in connection rates to sewers and waste-water treatment plants, saving taxpayers millions in repair costs. Innovative uses of waste have also created new business opportunities.**

Waste water includes 'used' water and sewage from households as well as water that has been used by industry. Failure to treat and clean it means polluting seas and rivers with the inevitable harmful consequences for wildlife, plants, and human health and well-being.

The vast majority of Europeans benefit from modern waste-water treatment. This achievement has been the result of significant and effective investment along with the careful use of EU Cohesion Funds and LIFE, the funding instrument for the environment.

For example, many LIFE projects have succeeded in cutting contaminant discharges to the aquatic environment from urban waste water. Sludge is just one of the products of waste-water treatment processes. A LIFE project, entitled MAD, developed and demonstrated a full-scale treatment process that proved highly adaptable.

This was a catalyst for improved waste-water management, and the project's technology became the new sludge-treatment standard for the entire UK water industry. Some 12 EU Member States and 26 countries worldwide have shown an interest in replicating the treatment plant, which reduces the cost of sludge disposal to EUR 210 per tonne of dry solid waste, compared to average landfill costs of EUR 415 per tonne. The system also saves farmers around EUR 175 per hectare in fertiliser replacement.

Similarly, a treatment plant on the Greek island of Psyttaleia had to be upgraded to meet the requirements of the Directive. The modernised plant, co-financed through the Cohesion Fund, has been operational since 2005. It now treats 750 000 cubic metres of sewage every day and ensures the biological treatment and removal of nitrogen before discharging the load into the sea. Economic activity in the surrounding coastal area has increased as a result.



# Sustainable benefits of waste-water treatment

Efficient sewage facilities are crucial to ensuring quality of life, whether in a major city or small municipality. In Dublin, Ireland, for example, a waste-water treatment upgrade was needed to meet the demands of an expanding population, while in Közép-Dunántúl, Hungary, over 7000 new households have finally been connected to the sewage system.

Dublin's facilities needed a significant upgrade. After primary treatment, sludge was being shipped out and dumped directly into the sea – sometimes without any treatment at all. A new urban waste-water treatment (UWWT) plant now ensures that clean water is readily available to a population of 1.6 million, while over EUR 40 million in public-sector revenue has been generated, thanks to the polluter pays principle (PPP). The development forms part of a more general scheme to enable further social and industrial development in the region.

In Hungary, works were undertaken to connect areas of Székesfehérvár, as well as the three surrounding settlements of Pátka, Pákozd and Seregélyes. The connection rate was expected to have reached over 80% by the end of 2013. Although on a smaller scale to Dublin's UWWT, the work carried out in Hungary is bringing significant benefits in terms of quality of life to the 7000 additional households now connected.

Some 50 jobs were created in Hungary during the construction phase, with nine long-term positions established. Enough revenue is expected to be generated to cover the costs of future operations and maintenance work. In Dublin, substantial future investment is planned to increase capacity at the plant, which currently employs around 50 people.

The long-term economic benefits promise to be even more impressive. The project in Hungary will stop waste water infiltrating the soil and polluting Lake Velence, a national nature conservation area. As a result, tourism in the region is likely to increase. The UWWT in Dublin produces

bio-fertilisers, which benefit local farmers, while the Blue Flag status of the local beach has created confidence among the population and increased tourism.

**SUBJECT:** Dublin Urban Waste Water Treatment;  
Sewer connection in Közép-Dunántúl

**COUNTRIES:** Ireland and Hungary

**RELEVANT EUROPEAN LEGISLATION:**

- Directive 91/271/EEC Concerning Urban Waste-water Treatment<sup>6</sup>
- Water Framework Directive 2000/60/EC<sup>7</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

Dublin:

- EUR 40 million in public-sector revenue
- Clean water for 1.6 million people
- Improved public perception
- 50 jobs

Közép-Dunántúl:

- Cost of future operations and maintenance work covered
- Over 80% connection rate by 2013
- An additional 7000 households connected
- Some nine long-term jobs created

# Treating waste water in Slovenia

Until recently, all waste water in Celje – the third largest city in Slovenia, with a population of 50 000 – was discharged into the River Savinja, resulting in poor water quality and increasing levels of contamination. Following Slovenia's accession to the European Union, the country's waste-water infrastructure improved.

Work on a new urban waste-water treatment (UWWT) plant began in 2000. In the new installation, waste water from household, pretreated industrial and hospital effluents are mechanically and biologically purified, resulting in clean water and sludge that can be used as manure in farming.

This work has considerably improved the water quality and quality of life of local inhabitants. It means Slovenia is closer to meeting the requirements of the Urban Waste Water Directive and the National Environmental Action Programme. A follow-up action aims to ensure that waste water from the entire Savinja river basin is treated.

**SUBJECT:** Celje waste-water plant

**COUNTRY:** Slovenia

**RELEVANT EUROPEAN LEGISLATION:**

- Directive 91/271/EEC Concerning Urban Waste-water Treatment<sup>6</sup>
- Water Framework Directive 2000/60/EC<sup>7</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Public-sector revenue
- Clean water
- Sewage connection



# Water

Between 1998 and 2009, floods led to insured losses totalling at least EUR 52 billion, while the cost of droughts in Europe over the past 30 years has been put at EUR 100 billion. The effective management of this precious resource has huge economic implications.

The protection and maintenance of both fresh- and salt-water ecosystems are cornerstones of environmental protection in Europe. The challenges surrounding water transcend national boundaries, which is why concerted action at the EU level is necessary. Polluted water, whatever the source, will flow into neighbouring countries or into the sea. Furthermore, floods and droughts can have a hugely detrimental effect not only on the lives of citizens but on businesses, too.

Between 1998 and 2009, Europe suffered over 213 major floods, causing some 1126 fatalities, the displacement of about half a million people and insured losses totalling at least EUR 52 billion. While floods are natural phenomena that cannot be prevented, human activity is increasing their likelihood and impact (Directive 2007/60/EC<sup>9</sup> on the assessment and management of flood risks).

In 2007, at least 11% of Europe's population and 17% of its territory had been affected by water scarcity, putting the cost of droughts in Europe over the past 30 years at EUR 100 billion.

These issues must be addressed. The main overall objective of EU water policy is to enable access to good-quality water in sufficient quantities for all Europeans, and to ensure the good status of all water bodies across Europe by managing water not on national or political boundaries but on natural geographical and hydrological formations: river basins (Water Framework Directive 2000/60). Policies and actions have been set up to both prevent and mitigate water scarcity and drought situations, with the priority to move towards a water-efficient and water-saving economy.

# Boosting the image of Plzeň

Renovation of Plzeň's water system was desperately needed to ensure adequate flood management, drinking-water standards and the safe recreational use of rivers.

In 2002, just before the Czech Republic joined the EU, the city of Plzeň sought to rehabilitate its water and sewage system in order to comply with EU legislation. The ensuing work succeeded in improving the quality of drinking water for 50-70% of the city's population, and eliminating problems of capacity and pressure.

In addition, the EU-funded work achieved sustainable operational efficiencies, which have led to financial and economic gains for the city. Prior to this, four communities on the outskirts of the city – involving around 4500 people or about 1000 households – were not connected to the central sewage system. Now these households can benefit from cost savings related to removing the need to empty septic tanks.

The provision of a clean and reliable public water supply has also had a positive impact on the city's image as a whole, both with respect to attracting new inhabitants, as a tourist destination, and as a place for business investments. Wider environmental benefits are related to the reduction in the number of waste-water overflows, leading to less pollution of surrounding rivers and groundwater.

Finally, the completion of the works has triggered other initiatives, such as the restoration of river banks and the creation of bicycle and walking paths.

**SUBJECT:** Expansion of water distribution in the city of Plzeň

**COUNTRY:** Czech Republic

**RELEVANT EUROPEAN LEGISLATION:**

- Water Framework Directive 2000/60/EC<sup>7</sup>
- Council Directive 98/83/EC on the Quality of Water Intended for Human Consumption<sup>8</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Cost savings: less maintenance work
- Improved public image: attractive place to live
- Proper sanitation: over 1000 more households connected

# Cost savings through responsible water management

The rehabilitation of key rivers in the English county of Cornwall has had a significant effect on the economic viability of the surrounding rural communities.

Cornwall, situated in the south-west corner of England, is highly dependent on tourism and farming. Ensuring the conservation of the region's many waterways is therefore an economic priority. To achieve this, over 870 landholdings in Cornwall were visited, with each receiving a confidential individually tailored and free 'Integrated River Basin Resource Management Plan'.

This plan identified opportunities to improve farming practices, protect the environment and make cost savings. In total, it covers a land area in excess of 560 km<sup>2</sup> and over 1380 km of surveyed watercourses.

An independent follow-up economic survey revealed that significant savings have been made by taking up key advice included in each plan. For example, average annual savings per farm were calculated to be in excess of EUR 1600, a figure which represents continuing financial sustainability and excellent value for money.

In addition, eight ongoing demonstration sites and an angling marketing scheme have been set up, while education officers have been sent into schools and along the river banks themselves.

**SUBJECT:** Cornwall's rivers

**COUNTRY:** UK

**RELEVANT EUROPEAN LEGISLATION:**

■ Water Framework Directive 2000/60/EC<sup>7</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Annual cost savings of over EUR 1600 per farm
- New business opportunities
- Recreation opportunities: over 1380 km of surveyed watercourses covered

# Modernising water supplies in Greece

A region in north-western Greece has had its water supply successfully modernised, a development that has helped to create new jobs and improve residents' quality of life.

Until 2004, 50% of the drinking water in the region of Ioannina, the largest city in north-western Greece, was not metered and was supplied through ageing pipes. EU-funded works were carried out to install a new drinking-water system, providing citizens with clean water and generating more than EUR 425 000 in public-sector revenue each year.

Social benefits include the creation of 37 direct and 11 indirect jobs, an important consideration in a region beset by high unemployment. The main contribution however has been to sustainably improve the lives of citizens in a metropolitan area with a population of around 120 000.

Wider environmental benefits include the protection of Lake Pamvotida, one of the biggest lakes in Greece, along with underground reservoir waters. Following completion of the water system, fewer leaks have resulted in less wastage, leading to a more efficient use of natural resources.

**SUBJECT:** Modernisation of drinking-water systems, Ioannina

**COUNTRY:** Greece

**RELEVANT EUROPEAN LEGISLATION:**

- Council Directive 98/83/EC on the Quality of Water Intended for Human Consumption<sup>8</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Resource efficiency
- More than EUR 425 000 in public-sector revenue each year
- Some 37 direct and 11 indirect jobs created

# Coastal zones

The EU's Coastal Regions contribute to the maritime economy also known as the blue economy. These Coastal regions generate around 40% of EU GDP and are increasingly vital to the economy, according to a November 2013 European Environment Agency report. They are also vulnerable – risks include flooding, erosion and rising sea levels. Indeed, if sea levels were to rise by one metre, the yearly bill for inaction has been put at EUR 6 billion.

More than 40% of European citizens currently live near coastlines, stretching from the North-East Atlantic and the Baltic to the Mediterranean and Black Sea. These regions are among the most productive areas in the world, enjoying high ecological and economic value. They offer a wide variety of valuable habitats and ecosystems services that have always attracted humans and human activities.

As the well-being of populations and the economic viability of many businesses in coastal zones depend on the environmental status of these areas, it is essential to make use of long-term management tools, such as integrated coastal management, to enhance the protection of coastal resources while increasing the efficiency of their use. Integrated coastal management aims to coordinate the application of different policies affecting coastal zones, such as nature protection, aquaculture, fisheries, agriculture, industry and tourism.

In March 2013 the Commission adopted a proposal for a Directive establishing a framework for maritime spatial planning and integrated coastal management in order to further promote the sustainable development of coastal zones.. The proposed instrument will require Member States to establish coastal-management strategies that build further on the principles and elements set out in the Council Recommendation on Integrated Coastal Zone Management of 2002<sup>10</sup> and the Protocol to the Barcelona Convention on Integrated Coastal Zone Management, ratified by the EU in 2010.

In addition, the Bathing Water Directive<sup>13</sup> plays an important role in underpinning the economies of coastal and inland tourist resorts by setting common quality standards for bathing waters. It promotes a level playing field by ensuring that all resorts attract tourists by adhering to a minimum common set of environmental standards.

To a large extent, compliance is now driven by transparency (a well-publicised annual report<sup>12</sup> on bathing water quality has been published) alongside a related voluntary scheme, the Blue Flag, which is awarded to bathing areas which meet a set of quality criteria, including the standards in the Directive. Some years ago, the major north-west England tourist resort of Blackpool was the subject of successful Commission legal action because standards were below those required by the legislation. Major investments in waste-water treatment were carried out, leading to significant improvements which helped to boost the local economy.



# Harnessing tidal power

A means of generating electricity from marine tidal currents – at 50% of current energy costs – has been developed to take full advantage of nature’s power. Such innovations promise to bring new technologies and jobs to coastal regions.

Rising energy demand and increasing greenhouse gas emissions have led to a global push towards energy production from renewable sources. Tidal energy remains a substantial untapped renewable energy resource, offering various advantages over other sources.

Tidal energy is one of the most predictable and reliable forms of renewable energy and can generate electricity for populated as well as very remote locations with minimal impact on the environment. Indeed, it is vital that such activities do not conflict with the overall economic prosperity and environmental sustainability of coastal areas. BLUETEC tidal energy technology has demonstrated that this is possible.

By generating electrical power from marine tidal currents at 50% of the cost of existing technologies, BLUETEC has established marine tidal currents as a viable source of renewable energy, with huge potential for growth in coastal areas. It is hoped that the technology could be applied in numerous locations around Europe’s coastline.

**SUBJECT:** BLUETEC

**COUNTRY:** The Netherlands

**RELEVANT EUROPEAN LEGISLATION:**

■ LIFE + Regulation No 614/2007<sup>12</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Generating electrical power costing 50% of current technologies
- Clean renewable energy

# Economic benefits of sustainable aquaculture

Aquaculture, which is mainly practised in coastal waters, can have a positive impact on coastal zones as it requires good water quality and a clean environment. In turn, fish farms and shellfish beds provide fresh seafood for local hotels and restaurants.

However, aquaculture can also have negative environmental impacts, since it competes for limited water space, creates issues of waste disposal and can be a source of pollution. EU LIFE programmes, such as ECOSMA, have helped to make the sector more sustainable by addressing concerns over water pollution, antibiotic use and loss of ecologically valuable areas.

The project implemented a coordinated series of actions, and introduced guidelines for aquaculturists to promote better water quality around the Baltic Sea coast. The ecological certification of products deriving from marine aquaculture could also open up a new market for sustainably sourced food, providing a boost to local coastal economies.

**SUBJECT:** ECOSMA

**COUNTRY:** Germany

**RELEVANT EUROPEAN LEGISLATION:**

■ LIFE + Regulation No 614/2007<sup>12</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Tourism
- Boost for aquaculture sector
- Clean environment



# Nature and biodiversity

It has been estimated that approximately 7% of all jobs in the EU are directly dependent on healthy nature and protected biodiversity, and this figure is projected to rise.

The EU is committed to protecting its natural heritage, and to halting biodiversity loss within the Union by 2020. The EU Natura 2000 network of protected sites is the centrepiece of the EU's nature and biodiversity policy. The network currently covers 18% of Europe's land and more than 6% of marine territories. Natura 2000 is the world largest coordinated network of protected areas and one of the EU's outstanding achievements.

In addition to the preservation of threatened species and natural habitats, the Natura 2000 network makes a significant contribution to the protection of freshwater ecosystems, storage of carbon in peat bogs, improvements to air and soil quality by preserving forests, and making Europe more resilient to natural disasters caused by climate change.

Nature is beautiful in many ways, but it is not just about aesthetics. From carbon storage to bee pollination, from water purification to flood prevention, nature and its ecosystems provide numerous services which go far beyond its mere beauty. They are indispensable services for our well-being and fundamental drivers of our economy. Therefore, investment in Natura 2000 is essential to help safeguard the flow of these services, which might otherwise be at risk of degradation.

It is estimated that the Natura 2000 network provides other knock-on benefits to society and the economy, worth between EUR 200 and 300 billion a year, while the estimated cost of managing the network is around EUR 6 billion annually. Thus, it is obvious that investing in nature makes very sound economic sense.

In Europe, around 4.4 million jobs depend directly on healthy ecosystems. A growing number of these jobs are now in or around Natura 2000 sites in sustainable activities such as agriculture, forestry and fishery, tourism, site management, restoration, and visitor and education centres.

Natura 2000 also represents a significant resource for recreation, tourism and education. Protected areas can be a driver for local and regional economies, attracting inward investment and supporting jobs. An estimated 1.2 to 2.2 billion visitor days to Natura 2000 sites each year provide recreational benefits worth from EUR 5 to 9 billion, based on estimates of the willingness of visitors to pay per recreational visit.

Within this framework, the sum of EUR 1.9 billion invested by the LIFE nature programme since 1992 in 1400 nature conservation projects across the EU has not only played a significant role in establishing, managing and restoring the Natura 2000 network of sites and helping to reverse the decline of a large number of endangered species and habitats, but has also contributed to making these sites better known and better equipped with nature-compatible visitor infrastructure.

# Protecting the Danube's wetlands

The Lower Danube Green Corridor Agreement, which aims to protect and sustainably manage one of the most outstanding biodiversity regions in the world, can help boost the local economy.

Wetlands are well known as biodiversity hot spots, but they are also crucial to our welfare, providing flood protection, drinking water, nutrient removal, tourism and recreation. The Lower Danube Green Corridor (LDGC) Agreement, which was signed in 2000 by the governments of Romania, Bulgaria, Ukraine and Moldova, represents a commitment to restore some 2236 km<sup>2</sup> of flood plain, side channels and associated habitats along this mighty river.

This will help to control floods in the region, which have caused widespread destruction in the past. The total cost of the restoration work is estimated at around EUR 50 million and will eventually result in 2100 million m<sup>3</sup> of flood-retention capacity. This compares favourably to the costs already incurred in Romania alone, as a result of the 2010 floods, which amounted to EUR 59 million. In addition, it is expected that the restoration of the Danube will provide EUR 112 million a year in additional ecosystem services for fisheries, forestry, nutrient retention and recreation.

**SUBJECT:** Lower Danube Green Corridor

**COUNTRIES:** Bulgaria, Romania, Ukraine, Moldova

**RELEVANT EUROPEAN LEGISLATION:**

- Natura 2000 Network established under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora<sup>14</sup>
- Water Framework Directive 2000/60/EC<sup>7</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Restoring over 2200 km<sup>2</sup> of flood plain
- EUR 112 million a year in additional ecosystem services
- Encouraging recreational activities

# Reconciling tourism with biodiversity protection

The rehabilitation of a popular and economically important tourist route in Karkonosze National Park, Poland, will help open up a beautiful region of central Europe to nature-conscious visitors.

The Karkonosze National Park, established in 1959, is located in south-western Poland. It covers the northern slopes of the Karkonosze, the highest and largest range of the Sudetes Mountains stretching from Poland and the Czech Republic to eastern Germany.

This mountainous region is one of the most important natural habitats in Central Europe. Some 70% – 3828 hectares – of the area is covered by forest vegetation, and there are also almost 40 hectares of peatbogs.

In 2009, work began to preserve habitats along popular tourist routes in the park, as well as to ensure the protection of threatened fauna and flora in the region. An existing tourist route was directed away from these delicate sites and a new one constructed.

The work centred on an area covering 196 hectares, including some nine kilometres of tourist route. The ongoing success of Karkonosze National Park is a good example of reconciling tourist activities with the protection of nature and biodiversity. More than 1.5 million tourists visit the Karkonosze National Park every year.

**SUBJECT:** Karkonosze National Park

**COUNTRY:** Poland

**RELEVANT EUROPEAN LEGISLATION:**

- Natura 2000 Network established under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora<sup>14</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Increased tourism
- Some nine kilometres of walking routes restored
- Potential for job creation and effective biodiversity protection

# Benefits of public investment in nature

Finland's impressive network of national parks is playing a crucial economic role in supporting communities in some of the country's more remote – but stunning – regions.

Finland has the most comprehensive and coherent network of protected areas in the world, according to the Finnish Natural Heritage Services (Metsähallitus) 2012 Annual Report<sup>14</sup>, and this impressive national park system continues to play an important environmental and economic role.

In 2012, Finland's national parks welcomed around 2.09 million visitors, bringing income to the surrounding areas worth around EUR 109.5 million and 1412 person-years in employment.

These figures are largely in line with a 2009 survey, which was carried out by Metsähallitus in association with the Finnish Forest Research Institute (METLA). This study estimated that it takes EUR 1 of public investment in protected areas to provide EUR 20 in return. The survey was designed to provide a national assessment of the economic impact of nature tourism and nature-related recreational activities on the local economy.

“Our participation in the EU's Natura network and other forms of international cooperation also gives us access to foreign funding sources,” said Rauno Vaisanen, Director of Metsähallitus Natural Heritage Services in the 2012 Annual Report. “This has enabled us to channel EU funds into local economies around Finland, while also promoting a European identity.”

**SUBJECT:** Survey on economic impact

**COUNTRY:** Finland

**RELEVANT EUROPEAN LEGISLATION:**

- Natura 2000 Network established under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora<sup>14</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- 2.09 million visitors in 2012
- Visitor spending in the region of EUR 110 million
- Some 1412 person-years in employment

## The return of the lynx

*The Iberian lynx, one of the world's most endangered feline species, is not only on the path to recovery, due to a large extent to a series of LIFE Nature projects, but is also contributing to local revenues from tourism and sustainable hunting.*

*The Iberian lynx is highly dependent on rabbits as a source of food. The decline in rabbit numbers from disease and the loss and fragmentation of their habitats led this emblematic species to the brink of extinction. A package of successive LIFE projects in Spain and Portugal, involving population reinforcement, habitat restoration and strengthening of the rabbit populations, has not only helped to reverse this decline but is starting to bring in sizeable economic benefits. Every year, more and more Lynx-watchers ("linceros") gather to see the lynx during their female 'heat' season, creating revenue for the local tourism sector.*





# Circular economy

**The transition towards a circular economy will bring benefits for businesses, the environment and for society. The policy delivers energy savings, supply-chain efficiencies and environmental benefits – good for businesses and people.**

The Commission's Circular Economy Package, adopted in December 2015, aims to achieve global competitiveness, foster sustainable economic growth and generate new jobs. It comprises a new legislative proposal on waste, and a Circular Economy Action Plan<sup>15</sup> with concrete actions, to be implemented until 2020, which will help the EU's transition towards a more circular economy.

The measures in the Action Plan cover the whole economic cycle, from production and consumption to waste management and the market for secondary raw materials. The main initiatives include eco-design, which supports the reparability, durability and recyclability of products, taking into account their specific requirements.

Increasing resource efficiency is crucial to improving productivity and driving down costs. This transition can reduce greenhouse gas emissions by 2-4%. Waste prevention, eco-design, reuse and similar measures could bring net savings of EUR 600 billion or 8% of the annual turnover of all businesses in the EU, while creating new jobs.

Eco-design rules result in more resource-efficient products on the market. Rules on energy labelling help consumers make informed choices when choosing products. By 2020, the EU's eco-design and energy-labelling rules are expected to save the equivalent of 1.3 billion barrels of oil a year – equating to around Italy's annual energy consumption or approximately EUR 55 billion in annual business revenues.

People will benefit, too: eco-design and energy-labelling policy means households will save EUR 490 million on energy bills each year.

The Commission has also taken key measures in areas such as waste, food waste, organic fertilisers, guarantees for consumer goods, and innovation and investment. Circular economy principles have been gradually integrated into industrial best practices, green public procurement, the use of Cohesion Policy funds, and through new initiatives in the construction and water sectors.

To ensure a smooth transition towards a circular economy across the EU, the Commission is setting up the European Circular Economy Stakeholder Platform. The aim is to fully involve businesses, civil society and public bodies from all Member States and engage them in sharing best practices that promote the circular economy.

Together with the European Investment Bank, the Commission has also launched the Circular Economy Finance Support Platform with the goal of upscaling investment, both public and private, in the circular economy. Furthermore, this platform will help to raise awareness of the untapped business potential in the circular economy.

# Positive result for rechargeable-battery technology

Industrial group Umicore has been acclaimed as one of Europe's most eco-innovative companies, winning first place in the Process category of the 2012 European Business Awards for the Environment (EBAE). The group was recognised for its unique rechargeable battery-recycling technology.

Umicore's process enables the recycling of valuable elements such as cobalt, nickel, copper and rare-earth elements from spent rechargeable batteries and other waste streams in an environmentally sound way. An industrial-scale pilot plant has been operational in Hoboken, Belgium, since September 2011.

The pilot plant has an initial annual capacity equivalent to some 150 000 (hybrid) electric-vehicle batteries or 250 million mobile-phone batteries. The facility will enable Umicore to offer a range of new recycling services, including a closed materials loop for battery producers.

It is anticipated that this market will gain momentum, driven by a combination of stricter recycling legislation, a continuously growing portable electronics market, and an increasing share of hybrid and electric vehicles on the roads.

The EBAE are designed to recognise and promote organisations that make an outstanding contribution to sustainable development. The awards highlight policies, practices, processes and products from all business sectors in the EU that help to achieve economic and social development without damaging the environment and natural resources upon which continued human activity and further development depend.

The Umicore Group has industrial operations on all continents and serves a global customer base. In 2016, it generated a turnover of over EUR 11 billion (EUR 2.6 billion excluding metal) and currently employs some 10 000 people.

**SUBJECT:** Process category of the European Business Awards

**COUNTRY:** Belgium

**RELEVANT EUROPEAN LEGISLATION:**

- Council Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE)<sup>3</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- New market opportunities
- Increased plant capacity for 250 million mobile-phone batteries
- Jobs, recycling

# Resource-efficiency tools for SMEs

North Rhine-Westphalia Effizienz-Agentur (EFA) helps SMEs increase their resource efficiency by providing an audit of resource consumption, advice on how to reduce this consumption and even access to funding.

Between 2000 and 2011, some 527 SMEs benefited from this programme, with 45 % of them implementing a resource-saving project. These schemes generated sufficient annual savings to pay back the initial investment in just a few years.

The EFA is a centre for small and medium-sized manufacturing enterprises in the German state of North Rhine-Westphalia. The team is equipped to answer all queries regarding cleaner production and resource efficiency. It was founded in 1998 as part of an initiative set up by the Ministry for the Environment in North Rhine-Westphalia.

**SUBJECT:** North Rhine-Westphalia  
Effizienz-Agentur (EFA)

**COUNTRY:** Germany

**RELEVANT EUROPEAN LEGISLATION:**

- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>
- Circular Economy Finance Support Platform<sup>15</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Over 500 SMEs have benefited
- Resource efficiency, increased connectivity
- Initial investment paid back in just a few years

# Embedding sustainable practices in business

Enworks coordinates environmental advice, training and business support for enterprises in north-west England. By doing so, it is increasing synergy and the sharing of good practices.

Participating companies can access on-site support and an online toolkit. Until now, 2017, Enworks has helped businesses to achieve EUR 316 million of cost savings through improved environmental performance. Some 8300 jobs have been created or safeguarded, while 1.1 million tonnes of waste have been diverted from landfill.

In total, more than 13 000 businesses have received advice, with 6500 assisted through intensive resource-efficiency support. In 2013, Enworks won the European Commission's RegioStars Awards for Sustainable Growth.

The programme also supports the five north-west Local Enterprise Partnership (LEP) areas in the UK by helping them to embed environmental sustainability into their economic development priorities and work streams through the Environmental Sustainability Technical Assistance (ESTA) project.

**SUBJECT:** Enworks

**COUNTRY:** UK

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>
- Circular Economy Finance Support Platform<sup>15</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- EUR 316 million cost savings for businesses
- Some 8300 jobs created
- Around 13 000 businesses advised

# A second life for glass

Around a quarter of glass collected for recycling is currently rejected due to impurities. This is why an Italian company recently trialed a new process to turn this waste into useful raw materials, and in turn help industry make better use of its resources.

With EU support, the processing company Sasil successfully upgraded its facilities to produce so-called 'glassy sand', which can be melted down during glass-container manufacturing. Very fine sand particles from waste glass are also separated by an air stream, mixed with clay and sold to the brick industry. The new process ensures that very little material is wasted, while at the same time reducing the amount of energy typically required.

The new facilities also include a new water-purification plant. This enables Sasil to recycle 90% of its process water, thereby significantly reducing the need for fresh water during glass manufacturing.

The innovation has been both an environmental and economic success. Sales of glassy sand increased from 6235 tonnes in 2003 to 144 337 tonnes in 2008, and today the factory is capable of producing over 200 000 tonnes a year.

Sasil is also looking to extend its resource-efficient process into new areas, including the colour separation of glass. In addition, one of the company's existing customers is now attempting to recover civil demolition waste glass and car windscreens and to use glassy sand to produce flat glass.

**SUBJECT:** Meiglass project

**COUNTRY:** Italy

**RELEVANT EUROPEAN LEGISLATION:**

- Waste Framework Directive 2008/98/EC<sup>1</sup>
- Closing the loop – An EU action plan for the Circular Economy – COM (2015) 614 final<sup>4</sup>
- Circular Economy Finance Support Platform<sup>15</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

- Sales increased from 6235 tonnes in 2003 to 144 337 tonnes in 2008
- Factory capable of producing over 200 000 tonnes a year
- New business opportunities and job creation



# Air

**Strong policies to tackle air pollution will improve quality of life through healthier populations and greater protection of our ecosystems. They will also help to drive forward innovation, create jobs, contribute to resource-efficiency and accelerate the transition to a low-carbon economy.**

Air quality is an EU policy area that has achieved considerable success in addressing some serious challenges. The problem of acid rain, for example, which dominated the environmental agenda in the '70s and '80s, has been broadly solved, and there have been substantial reductions in air pollution from industry, transport and energy production.

Nonetheless, significant problems remain for human health and the environment, and clean air is a key component of Europe's 2020 strategy.

Air pollution accounts for more than 400 000 premature deaths annually in the EU with external costs associated to ill health and mortality caused by heart diseases and respiratory problems valued at between EUR 330 to 940 billion annually. EU policy is driving this dramatic figure down, and aims to reduce premature deaths by close to 50 % by 2030. While improving the life of people living in the EU, it is also easing the pressure on national health systems and increasing labour productivity thanks to a significant reduction in the number of days lost through sick leave.

Other outstanding problems concern eutrophication of ecosystems and ground-level ozone which are damaging human health and vegetation. This has decreased by 10-15 % since 2000 and will fall further in the coming decade, resulting in better agricultural yields.

Investing in clean air is a top priority for public health and is highly beneficial for society. As outlined in the impact assessment of the Commission's 2013 Clean Air Policy Package, recently adopted EU legislation on air emissions will, by 2030, yield monetised health benefits 12 to 40 times greater than the anticipated pollution control costs. Further efforts continue to be needed to ensure that all EU citizens can benefit of clean air.

Implementing air quality policies also promotes those economic activities contributing to green growth. Investment and operation needs associated with emission-control policies total an estimated 0.6 % of EU GDP per annum, fuelling the green economy, creating jobs in areas such as clean and low emission vehicles, modern heating equipment and sustainable agriculture achieving more resource-efficient production and clean energy generation.



# Making urban heating plants efficient

The citizens of Iași in Romania have benefited enormously from an upgrade to their existing urban heating plant and heat-supply network. The development has so far contributed to an increase of approximately 3% in the energy efficiency of boilers, along with the loss of heat in the transport network dropping from 24% to 21%.

The overall objective was to ensure that the region's infrastructure complies with relevant environmental EU laws on energy efficiency, air pollution and climate change. If the heating system had fallen short of the Union's environmental requirements, the entire system might have been shut down, leaving over half the population in Iași without heating.

The work aimed to reduce sulphur dioxide, nitrogen oxides and dust emissions in order to secure the plant's compliance and enhance energy efficiency. Awareness of the importance of energy efficiency has also been raised among the local population. In addition, some 200 jobs were created during the construction phase, providing much-needed employment in the region. More importantly, in the longer term, the development will help to enhance Iași's reputation as an attractive place to live and work.

**SUBJECT:** District heating system in Iași municipality

**COUNTRY:** Romania

**RELEVANT EUROPEAN LEGISLATION:**

■ Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe<sup>16</sup>

**ECONOMIC AND SOCIAL BENEFITS:**

■ 3% energy-efficiency increase in boilers  
■ 200 jobs created

# Green public procurement

Public-sector spending is such a significant part of Europe's GDP that it inevitably has a major influence on how 'green' the economy can become. By buying environmentally friendly goods and services, EU governments can lead the way towards creating new business opportunities for a green, sustainable economy.

Public procurement – the buying of works, goods or services by public bodies – makes up around 14% of the EU's GDP and accounts for about EUR 2 trillion. Government spending is an effective tool to promote sustainable goods and services, and equips public authorities with the means to meet evolving environmental challenges.

Green public procurement<sup>17</sup> (GPP) has been recognised as a vehicle for green growth in a number of EU policies, including the Circular Economy Package adopted in December 2015.

For example, local, regional and national authorities across Europe can help foster a greener, more sustainable and efficient economy by purchasing low-emission buses for better air quality, or by using low-impact materials for buildings and roads, or by buying toxic-free cleaning products.

Potential green business opportunities include the refurbishment of office furniture and the provision of supplies such as energy-efficient computers, recycled paper, and electricity from renewable sources.

Many governments and public authorities have already achieved cost savings and brought benefits to citizens and businesses. For example, Vienna used GPP to achieve annual cost savings of EUR 1.5 million by adopting modern facility management techniques and replacing older appliances with more energy-efficient ones.

The city buys eco-friendly disinfectants and cleaning products, and has reduced the amount used by up to 40% – protecting employees from exposure to chemicals. These and other measures have reduced CO<sub>2</sub> emissions by 15 000 tonnes a year.

The EU-funded project GPP 2020 is also working with buyers in eight EU countries to mainstream low-carbon public procurement. The project provides support, including the calculation of CO<sub>2</sub> savings for each public tender. Over 100 GPP tenders for energy-related products and services have been carried out – saving an estimated 250 000 tonnes of CO<sub>2</sub> emissions a year.

The Commission's Circular Economy Package aims to build on such examples by setting out several key actions on GPP, including requirements concerning product durability and reparability in the voluntary EU GPP criteria, and training on the circular economy.

The Commission also plans to lead by example in its own procurement, and continues to urge EU cities and regions to mainstream green considerations in their purchasing decisions. It has developed GPP criteria for priority product groups like construction, food and catering, IT equipment and transport. In addition, there is a 'Buying green!' guide, GPP helpdesk, and over 100 best practices.

As GPP is a voluntary policy, making it a reality depends on the commitment of EU countries and individual public authorities. So far, most EU Member States have drawn up national action plans for green public procurement.

# Beyond borders

**In terms of jobs and growth, the positive impact of EU environment policy extends well beyond the Union's own borders.**

Various programmes and funding initiatives support the implementation of EU environment legislation beyond our borders. These include the Instrument for Pre-Accession (IPA) and the Technical Assistance and Information Exchange Instrument (TAIEX). These schemes generate employment and business opportunities in the Member States because this is where most of the assistance – in the form of expertise, capacity-building, project support and equipment – comes from, as well as in our neighbouring countries.

The EU has consistently played a key role in international environmental action. It was influential in pushing through the 1992 Rio Conventions, a major milestone in global environmental protection. In 2002, a specific Strategy on Environmental Integration in External Policies was adopted to better align the EU's international environmental policies with day-to-day external relations. Furthermore, the EU has signed a number of Multilateral Environmental Agreements, and has strived to help developing countries to implement these agreements.

European legislation also recognises that environmental policy cannot stop at the border. The Marine Strategy Framework Directive (MSFD), for example, explicitly states that “third countries with waters in the same marine region or sub-region as a Member State should be invited to participate in the process laid down in this Directive, thereby facilitating achievement of good environmental status in the marine region or sub-region concerned”.

Aligning with EU rules can also help third countries to implement regional conventions such as the OSPAR convention to protect the North-East Atlantic.

The Union has financed efforts to quantify the social and economic benefits of applying EU-inspired legislation in neighbouring countries to the south and east. A partial take-up of the EU environment *acquis* concerning waste, for example, would lead to an additional 64 million people having access to proper municipal waste collection. Around 25 000 jobs would also be created in this sector.

In addition, environmental expertise on the global stage can benefit the European food and agriculture sector, which has around 19% of the global market share. The EU's competitive leadership, however, is increasingly being challenged by historical trade partners (USA, Australia, New Zealand) and by emerging economies (Brazil, China), because they are catching up or even overtaking the Union in terms of resource-efficient production.

More resource-efficient practices can help improve the international competitiveness of Europe's agri-food sector. Furthermore, bilateral and regional trade agreements incorporating environmental provisions present important opportunities to use shared natural resources more efficiently and to enable EU trading partners to focus on their areas of strength.

For a number of EU trading partners, the negotiation and implementation of trade agreements is a driver of policy reforms. Free Trade Agreements (FTAs) also facilitate the transfer of EU expertise, including in the provision of environmental services. For instance, the FTA with South Korea gives EU companies access to the waste and water-treatment sectors. As part of the Union's market-access strategy, a number of market groups have been set up in Seoul to bring together EU Member States and businesses, thereby opening up new opportunities.

Bilateral cooperation, notably with China, India and Russia, has led to a demand for European expertise and business. The Centre for EU Small and Medium-sized Enterprises (SME) in China, the China-Europe Water Platform, and the European Business Technology Centre (EBTC) in India (all supported by the European Commission) have opened up a number of business opportunities for European industry, particularly in the waste and water sectors.

In May 2012, the EU-Russia conference on modernisation of waste management encouraged the Russians to follow EU regulatory approaches in the reform of their waste-recycling legislation. The conference brought together EU and Russian businesses working in sectors such as tyre recycling, and paved the way for a EUR 60 million European Bank for Reconstruction and Development project to modernise the Russian tyre industry, once again creating new opportunities.

## EU legislation and other references

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**3) Council Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE):**

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**6) Directive 91/271/EEC Concerning Urban Waste-water Treatment:**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31991L0271:EN:NOT>

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<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32007L0060&qid=1395822150462&from=EN>

**10) Council Recommendation on Integrated Coastal Zone Management of 2002:**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:148:0024:0027:EN:PDF>

**11) LIFE + Regulation No 614/2007:**

<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1395996750245&uri=CELEX:32007R0614>

**12) EEA report - European bathing water quality:**

<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>

**13) Bathing Water Directive:**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>

**14) Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora:**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:NOT>

**14) Protecting Finland's natural treasures - Finnish Natural Heritage Services:**

<http://julkaisut.metsa.fi/assets/pdf/lp/Muut/vk2012eng.pdf>

**15) Circular Economy Finance Support Platform**

[http://europa.eu/rapid/press-release\\_IP-17-104\\_en.htm](http://europa.eu/rapid/press-release_IP-17-104_en.htm)

**16) Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe:**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:EN:PDF>

**17) DG Environment website:**

[http://ec.europa.eu/environment/gpp/index\\_en.htm](http://ec.europa.eu/environment/gpp/index_en.htm)



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