



EU environment policy supporting jobs and growth



CONTENTS

| | | |
|---|---|----|
|  | Introduction | 3 |
|  | The EU eco-industry | 5 |
|  | Green jobs | 6 |
|  | Renewable energies | 8 |
|  | Energy efficiency | 10 |
|  | Resource efficiency | 12 |
|  | Europe's transition to a low-carbon economy | 14 |
|  | Incentives for change | 16 |
|  | Environmental costs and international competitiveness | 18 |
|  | Eco-innovation - environment policy action | 19 |
|  | Sources and references | 20 |
|  | Endnotes | 21 |

Country codes used in this publication

| | | |
|--------------------------|-----------------------|-----------------------------|
| BE Belgium | CY Cyprus | SI Slovenia |
| BG Bulgaria | LV Latvia | SK Slovakia |
| CZ Czech Republic | LT Lithuania | FI Finland |
| DK Denmark | LU Luxembourg | SE Sweden |
| DE Germany | HU Hungary | UK United Kingdom |
| EE Estonia | MT Malta | EU-27 European Union |
| IE Ireland | NL Netherlands | CH Switzerland |
| EL Greece | AT Austria | NO Norway |
| ES Spain | PL Poland | TR Turkey |
| FR France | PT Portugal | |
| IT Italy | RO Romania | |

Facts and figures are included for all Member States where available.

Introduction

The state of Europe's economy and the condition of the environment affect the lives of all Europeans. A clean and healthy environment is essential for maintaining prosperity and a high quality of life. But the strength and competitiveness of the economy is also essential if this quality of life is to be maintained.

A large part of the EU economy depends on the environment. As well as an entire sector devoted to environmental technologies, many jobs in the EU are linked in some way to the environment – from forestry and agriculture to sustainable construction and large parts of the tourism industry.

Economic and environmental objectives are often seen as being contradictory. However, the perception that a choice must be made between the two is wrong. Both can be achieved. EU environment policy is contributing to a shift towards employment associated with leaner, more efficient products and processes and the transition to an energy and resource-efficient economy. This is not only good for the environment but also for economic growth and the creation of new jobs.

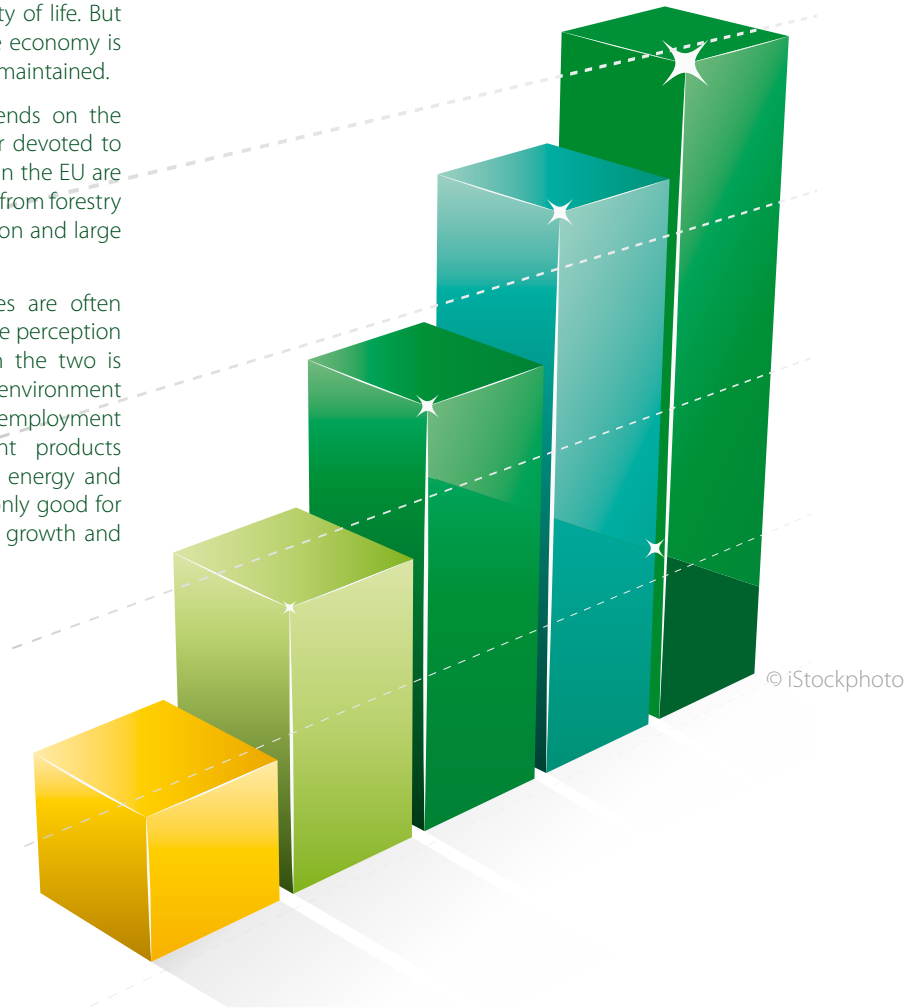


Fig.1 Eco-industry expenditure as % of GDP

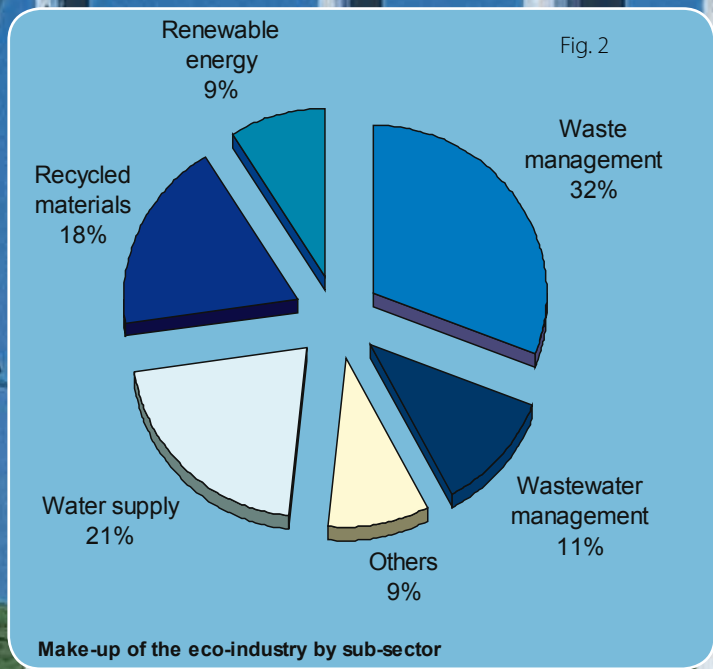
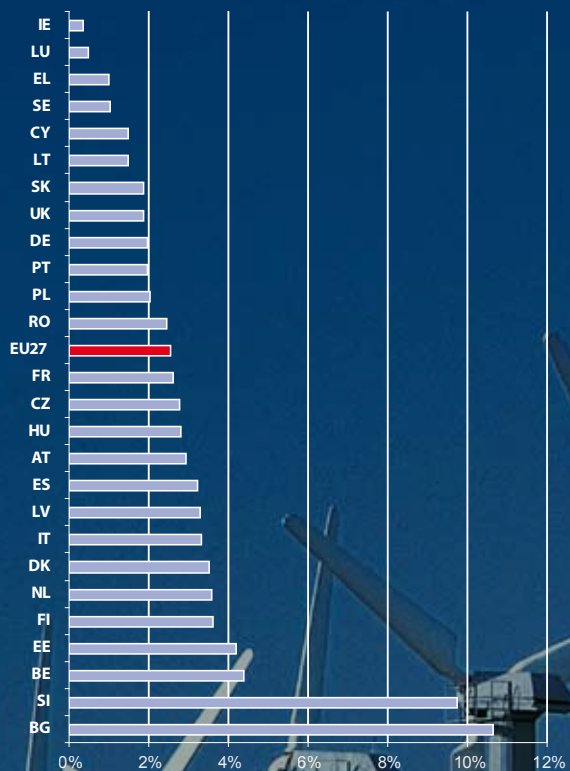


Fig. 2

The EU eco-industry

Environmental technology industries, known collectively as the eco-industry, have seen rapid growth in recent years to become one of the biggest sectors of the EU economy. Environmental technologies help measure, prevent and correct environmental damage to water, air and soil and solve problems such as waste, noise and damage to eco-systems. This can help EU industry produce fewer emissions, generate less waste, reduce costs and improve competitiveness.

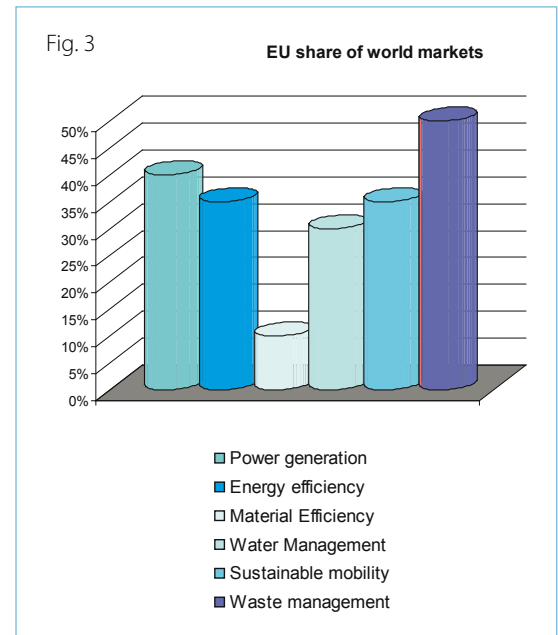
The eco-industry in the EU is mostly made up of small and medium-sized businesses. Its annual turnover in 2008 of €319 billion represents about 2.5% of Europe's Gross Domestic Product (GDP) (see Fig 1).¹ The eco-industry has grown by around 7 % a year since 2000.

The European eco-industry covers two main areas: pollution management and resource management. Pollution management mainly concerns technologies and services in waste management, air pollution control and cleaning up soil. Activities under resource management include materials recycling, renewable energy production and water supply.

Growth has been concentrated in resource management where new technologies such as solar and wind energy have made remarkable progress. In 2008, resource management accounted for more than half of the eco-industry sector for the first time (see Fig 2).

The market for environmental protection is a big opportunity for European firms. The global market for eco-industries is currently around €1000 billion per annum and this is expected to triple by 2030. The EU is a market leader and holds roughly one third of the global market (see Fig 3).

The long-term trend in the EU is towards environmentally-friendly production, where products that have a low impact on the environment and resource-efficient production techniques are becoming more common.



Eco-industries are a more significant part of the economy in some countries than others. Countries like Denmark and the Netherlands, for example, are big exporters of new green technologies such as wind turbines. In 2009, Denmark exported €5.6 billion worth of wind technology and created new jobs – it employs almost 25,000 people compared to around 15,000 in 2000. Some new Member States such as Bulgaria, Slovenia and Estonia are making significant investments in renewable energy programmes.



Green jobs

The EU eco-industry directly employs around 3.4 million people², around 1.5% of all Europeans in employment (see Fig 4) – more than in car manufacturing, chemicals or textiles. Around 600,000 new jobs were created between 2004 and 2008, in sectors such as waste and water and new jobs will be needed as Europe continues to move towards its aim of becoming a low-carbon and resource-efficient economy.

The number of jobs linked to the environment extends beyond the eco-industry to sectors that depend on a good quality environment – such as organic agriculture, sustainable forestry and green tourism. These jobs are often less visible than other jobs as they are spread throughout Europe among firms helping to improve environmental performance (see Fig 5). Based on a narrow definition, around 5.6 million people are directly employed in jobs linked to the environment.³

There are many other jobs that are also dependent on the environment, though arguably to a lesser degree. Using wider definitions, such as ‘all those working in agriculture’, one in ten European jobs depends to some extent on the environment. These jobs support others elsewhere in the economy, for example through demand for components and materials. When these indirect effects are included, it is estimated that around one job in every six is somehow dependent on the environment.⁴



© Photos.com/ AbleStock.com/ Getty Images

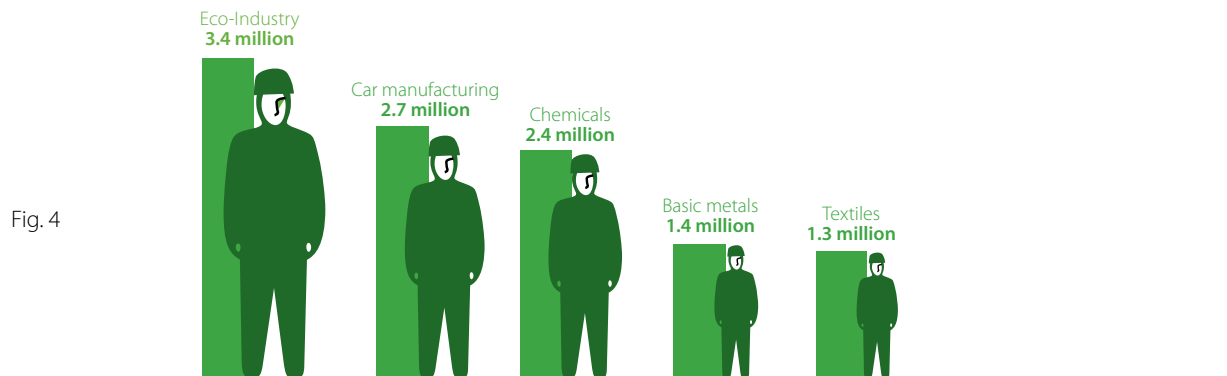
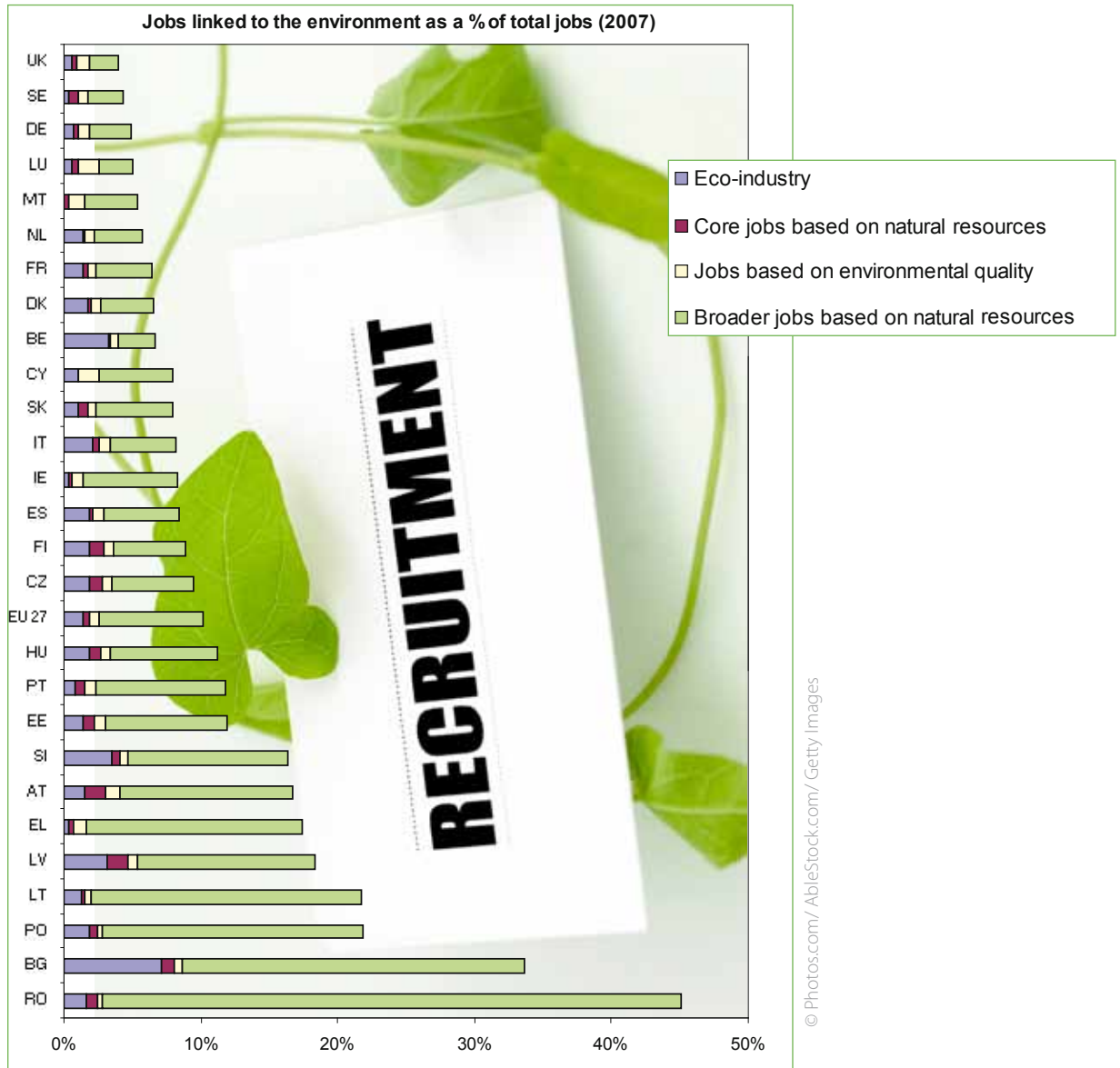


Fig.5



Renewable energies

Renewable sources of energy such as wind power, solar energy, hydropower and biomass are essential alternatives to fossil fuels. They play an important role in tackling the challenges of climate change and reducing Europe's reliance on imported energy. They also create new jobs in renewable energy technologies.

Policies that support renewable energy sources can give a significant boost to the economy and create new jobs. As part of its action to combat climate change, the EU has committed to increase the share of energy from renewable sources to 20% (from around 8.5% today) by 2020. It is estimated that meeting this target will provide an additional 410,000 jobs and boost GDP by 0.24%.⁵

In 2005, around 1.4 million people in the EU worked in renewable energy and generated €58 billion, contributing around 0.6% to Europe's GDP. By 2020, employment in the sector could reach 2.8 million people, though jobs would be lost elsewhere in the economy such as in fossil fuel production.⁶ Biomass is currently the main source of renewable energy in the EU, but much of the growth is likely to be in solar and wind energy.

In 2009, global new investment in sustainable energy was €118 billion. Wind power increased its dominance among new financial investments in sustainable energy to 56% (€49 billion), followed by solar power (€17.5 billion) with both overtaking investment in biofuels (€5 billion).⁷ Renewables made up 60% of



newly installed power capacity in Europe in 2009, and Europe accounted for more than a third of all new global investment in renewable energy (see Fig. 6).

Economies of scale

Renewable energies used to be more expensive than traditional sources of energy. However, there has been a continued and significant reduction in the cost of producing energy from renewable sources over the last 20 years. The cost of wind energy per kWh has fallen by 50% over the last 15 years. Solar photovoltaic systems, which convert sunlight into electricity, are more than 60% cheaper today than they were in 1990. Given the right weather conditions, renewable energies are now often close to being able to compete financially with traditional sources of energy (Fig. 7). As more investment, and stronger research and development is made, the scale of production will increase and costs will come down, making the technologies even more competitive. Because of this potential, around 18% of venture capital investment in the EU is now made in clean technologies.

Fig. 6

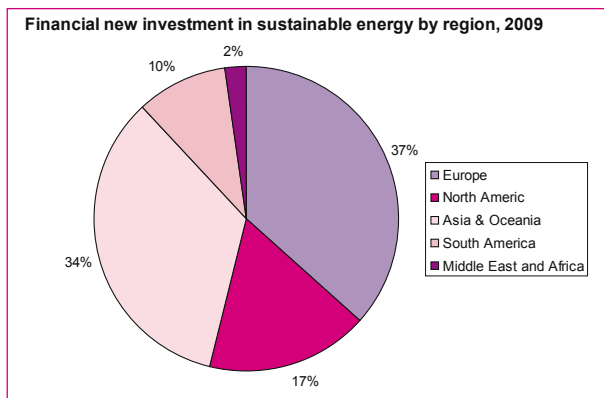
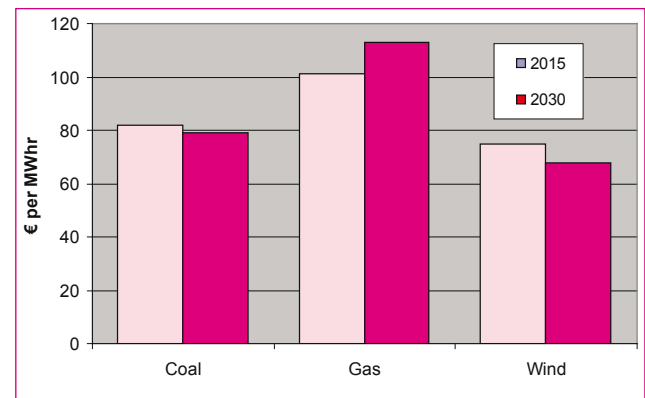


Fig. 7



Energy efficiency

The EU's dependency on imports of energy means that around €350 billion of the EU's wealth – around €700 per EU citizen, or 2.8% of GDP – is exported every year mainly to oil and natural gas rich countries. On average, EU Member States import more than a half of their energy.⁸

Energy prices, especially oil, are expected to continue to rise in the coming years. Competitive economies will anticipate this and improve both the efficiency with which they use energy, and at the same time look for new sources to cut costs and ensure security of supply.

The European Union has set a target of reducing its energy consumption by 20% by 2020 (Commission's Energy Efficiency Plan 2011). The biggest energy savings are expected to be found in residential and commercial buildings, the manufacturing industry, and transport.

In most cases, this would be either at no cost to the economy or achieved through investments that have very quick pay-back times.⁹ The new measures could cut consumers' bills by up to €1000 per household a year and improve Global revenues from climate-related business activities – mainly energy efficiency – are around €360 billion. These activities are also a source of new jobs and a way of cutting costs for businesses.¹⁰

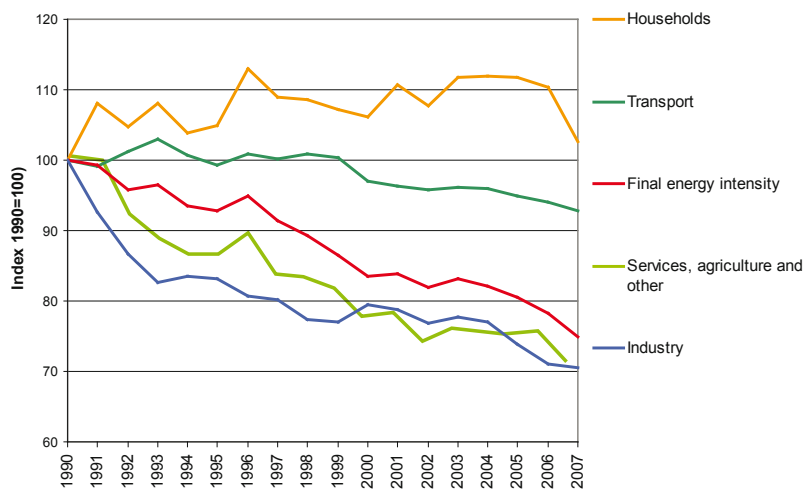


Fig. 8

The variation in energy efficiency between Member States and sectors shows that there is potential for improvement (Figs 8 and 9).



© iStockphoto

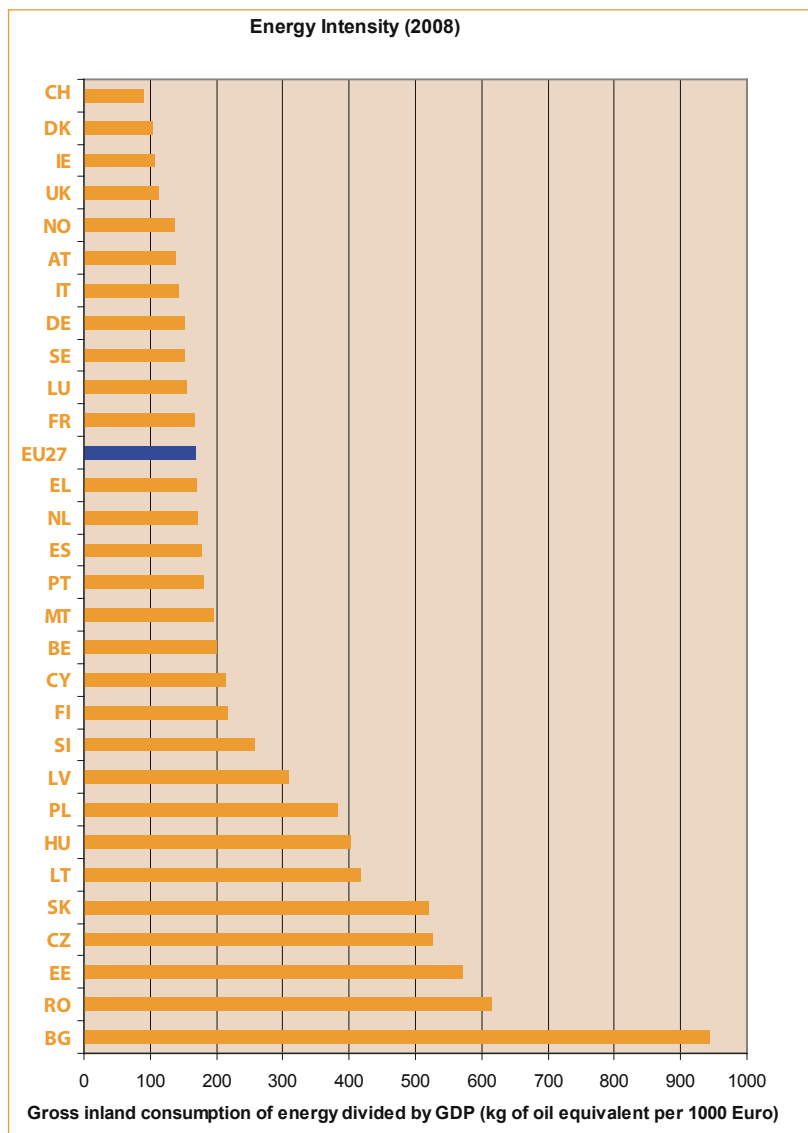


Fig. 9



Resource efficiency

Resource efficiency means the sustainable management and use of resources throughout their life cycle (from extraction, transport, transformation and consumption to their disposal once they become waste).

It is no coincidence that Europe's most competitive economies are also the most resource-efficient. The more efficient an economy is the more economic output it can achieve from the raw materials available.

It is estimated that around 20% of material use in the EU is inefficient and that investment to remedy this would pay back in one to six years.

For example, a study shows that UK businesses could save £23 billion a year by using resources more efficiently. The up-front cost of these savings is not high and some involve no cost at all. The investments involved have a pay-back period of one year or less.¹¹

It is estimated that a 20% reduction in resource and energy use in Germany could lead to an increase in resource productivity of 2.9% per year. The economic benefits would include the creation of more than one million jobs, improved growth rate and an increase of GDP by 12%, with a payback period of one year in the case of materials and six years for energy.¹² The variation in levels of resource efficiency between Member States suggests there is scope to improve resource productivity considerably (Fig. 10).

Increasing resource productivity will provide new jobs as demand grows for techniques that boost productivity or which ease the transition to a low-carbon economy. It is hard to measure this impact, as these jobs will be spread throughout the economy but some lead markets, such as sustainable construction, can be clearly seen as a source of growth (Fig. 11).

Resource productivity in the EU (EUR per kg)

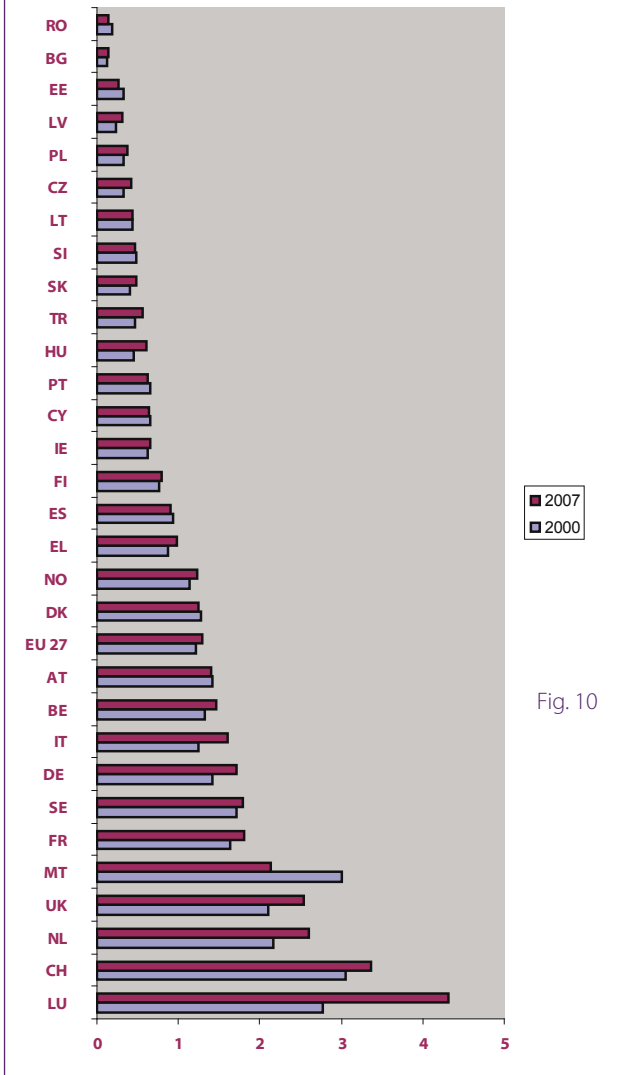


Fig. 10

Resource efficiency is an issue for everyone, in the home as well as in the workplace. Food and drink contribute to 20-30% of environmental impacts – at the same time a similar amount of food purchased by households is wasted.

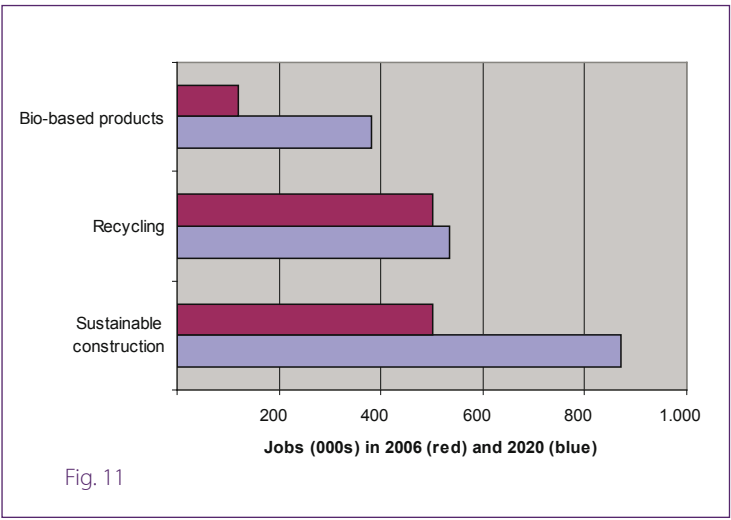


Fig. 11



Europe's transition to a low-carbon economy

Climate change will disrupt economies and societies worldwide. The cost of inaction will be much higher than the cost of reducing the emissions of greenhouse gases which are warming the planet.

To limit the negative effects of climate change and prevent it from reaching dangerous proportions, global warming needs to be kept to less than 2°C above the temperature that prevailed in pre-industrial times. Through the 2009 Copenhagen Accord and the 2010 Cancún Agreements, the international community has recognised that this should be the objective.

To keep warming below the 2°C ceiling scientific projections show that global emissions will need to peak by 2020 at the latest and then be cut to 50% or more below their 1990 level by 2050. Developed countries will have to undertake the lion's share of the effort by making reductions of 80-95% by mid-century. The European Council and the European Parliament have endorsed this as an EU objective, in the context of developed countries as a group making cuts of this magnitude.

The EU has put in place a range of instruments and measures to reduce its emissions. By 2009 the EU's emissions were some 17% lower than in 1990. By far the most important instrument is the EU Emissions Trading System. Launched in 2005, the system has put a price – and a ceiling – on carbon emissions from some 11,000 industrial installations across Europe.



For the medium term the EU has made an unconditional commitment, underpinned by binding legislation, to cut its emissions to 20% below their 1990 levels by 2020. Europe is also offering to raise this target to 30% if other major world economies commit to doing their fair share of a global reduction effort.

How Europe uses and produces energy is crucial to bringing down greenhouse gas emissions. That's why the EU also intends, by 2020, to increase the share of renewable energy to 20% – around double today's level – and to improve energy efficiency by 20%.

Combating climate change requires innovation, and that in turn creates new business opportunities in the shape of new industries, new products and new skilled jobs. Building a low-carbon EU economy will require major and sustained investment in clean technologies over the next 40 years, but much if not all of this cost should be offset by savings on energy imports and on dealing with air pollution (Fig.12). By 2020 action to combat climate change and improve energy efficiency could increase total employment in the EU by up to 1.5 million jobs, particularly if governments use revenues from carbon taxes or sales of EU ETS emission allowances to reduce the cost of labour.

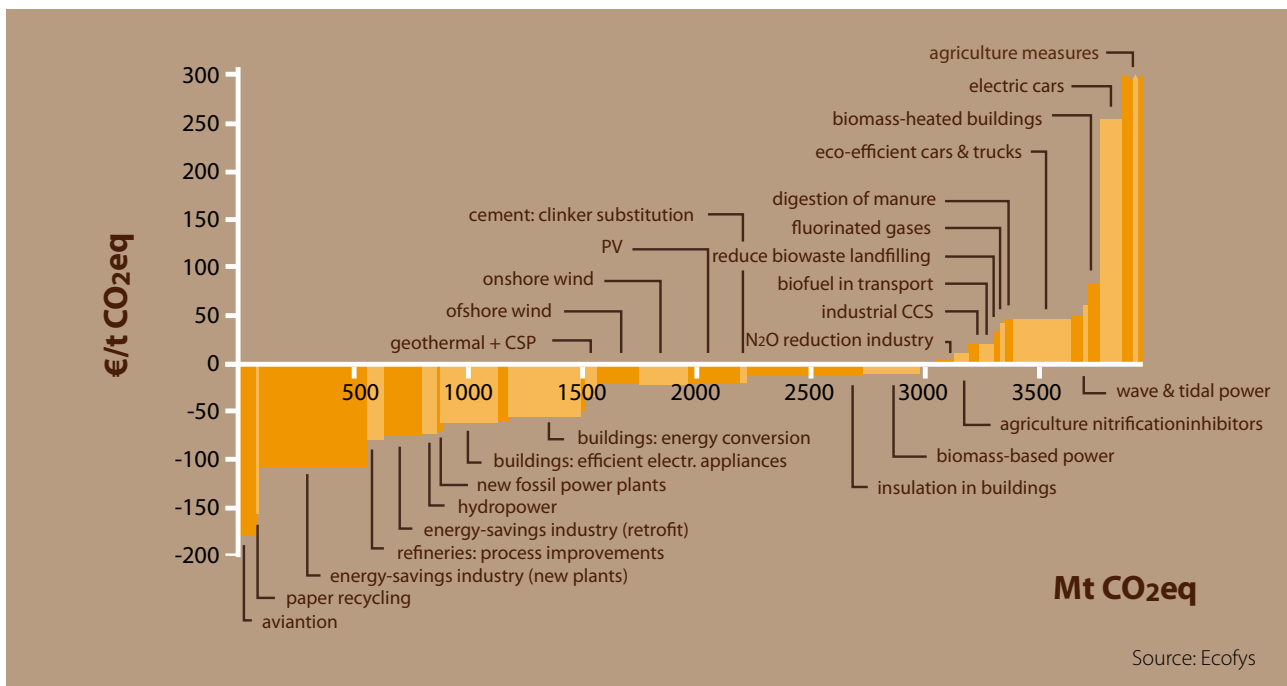


Fig.12



Incentives for change

Environmental taxes

Environmental taxes are designed to change behaviour and reduce negative impacts on the environment. They deliver a double benefit – an improved environment and greater public revenues.

The biggest source of environmental tax revenue comes from petrol and diesel, with potential taxes on pollution little tapped so far (Fig. 13).

Revenues from environmental taxes can be used to cut labour taxes. If taxes on labour provide a disincentive for firms to employ people, then environmental taxes can generate a 'double dividend': better environmental protection and higher employment.

Roughly one out of every fourteen euros of government revenue comes from environmental taxes. Since 1999, environmental tax revenues have been on the decline in the EU27. This means there has been no rebalancing of tax from labour to sources of pollution. Differences between Member States are stark, with Denmark topping the energy tax rates list at €268 per tonne of oil equivalent against Romania's €26¹³.

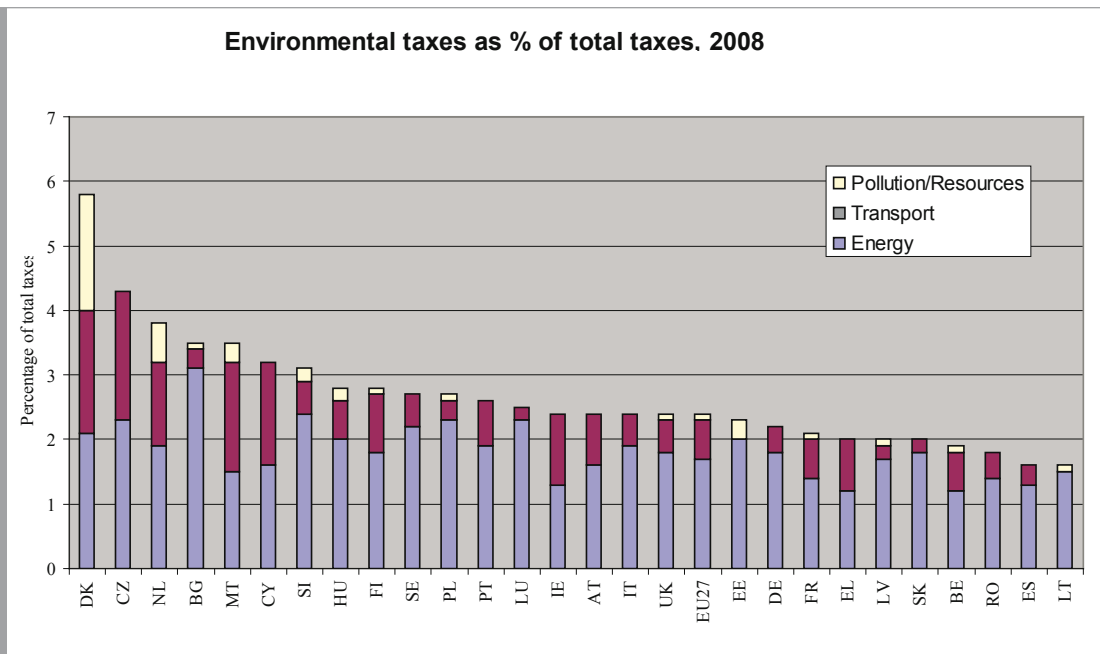


Fig. 13

Subsidies

Another source of revenue could be raised by cutting subsidies to activities that are harmful to the environment. Environmentally harmful subsidies worldwide are estimated at some €350-500 billion per year¹⁴, distributed between the following areas:

Agriculture: €150 billion

Energy: €50-150 billion

Transport: €80-100 billion

Water: €35 billion

Forestry: €25 billion

Fisheries: €15 billion

Although data is very rough it is estimated that government subsidies worldwide for renewable energy are only a tenth of the subsidies for the production and cheap consumption of traditional fossil fuels¹⁵.

The production of coal, for example, still receives more subsidy than renewable energy sources. Around two thirds of EU hard coal production receives some form of state aid. The aid can be substantial: Spain, €73,000 a year per coal job saved, and Germany €54,000 (Impact Assessment for proposal relating to State aid to facilitate the closure of uncompetitive coal mines).

The G20 group of industrialised nations has proposed phasing out subsidies for fossil fuels – a move that would reduce fossil fuel emissions by 12%.



Environmental costs and international competitiveness

While environmental regulation can boost productivity, it can also have financial costs for industry. Businesses may have to install cleaner technologies or could be restricted in the way that they can produce. However, there is no evidence that environmental policy has a significant impact on international competitiveness.

In most sectors, the cost of environmental regulation is less than 1.5% of the cost of production and has either stayed constant or gone down over time.¹⁶ The EU, the United States and Japan, all spend about 2% of their Gross Domestic Product on environmental protection. Environmental policy does not appear to hinder the competitiveness of Europe's manufacturing sectors or lead to relocation. On the contrary, good environmental performance can be good for competitiveness by improving efficiency.

The administrative cost of environmental policy involves the cost of information obligations, primarily paperwork. Environmental policy leads to administrative costs for businesses of around €1 billion per year, and represents less than 1% of the total administrative costs of European legislation.¹⁷ The same thing can also often be done in one country at a lower cost than in another – around one third of the administrative burden is estimated to be the result of inefficient public and private administrative practices, suggesting scope for sharing good practice. (Fig. 14)

Europe is a world leader in environmental technologies and environmental protection is therefore a big market opportunity for EU businesses. Many European producers benefit from 'first mover advantage' as their technologies are adopted abroad. Particularly strong export markets for the EU include China and other emerging markets that are trying to ensure economic growth is environmentally sound. Overall, the world market is growing by around 5% per year.

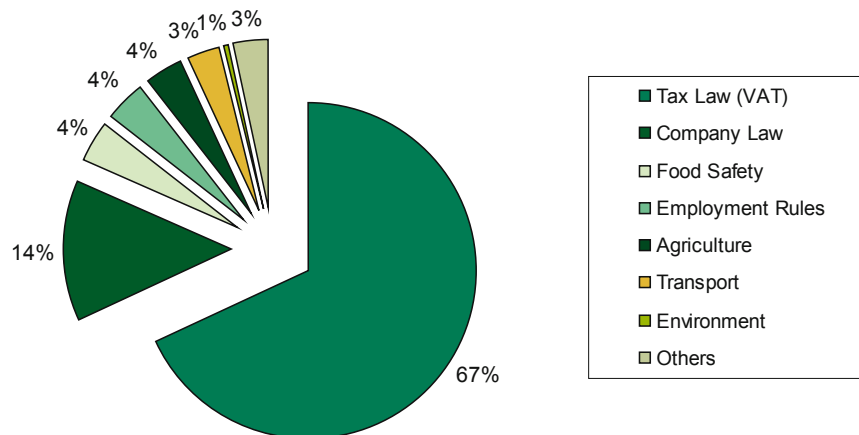


Fig. 14

Eco-innovation - environment policy action

Eco-innovation is innovation in products and services which includes a benefit for the environment. The promotion of environmental technologies is resulting in leaner production processes, resource-efficient products and technologies, and turning the vision of a green economy into reality. This means we can achieve environmental objectives more cost-effectively.

Environmental policy acts as a driver for innovation. The high standards set by the EU encourage European companies to innovate in a bid to maximise the resources they use. This leads to greater profitability as well as an improved brand and corporate image.

Green products sell well. Retail sales of green products in Europe are set to double to €114bn by 2015¹⁸. But this would still only mean an increase to 5% of total EU retail sales, up from 2.5% today.

By using Lighting Energy Controllers, IKEA in Budapest has cut electricity costs for external car parks by a quarter.

UK supermarket chain Tesco has installed more intelligent extraction systems which roughly halve the amount of energy consumed by extractor fans at in-store bakeries and restaurants – saving 15,777 MWh of electricity and £710,000 in 2010.

Since the launch of its eco plan, Plan A, in 2007, the UK's Marks and Spencer has saved over £50 million by becoming more resource-efficient.

Changes can be simple. A French site for mobile homes introduced low energy light bulbs and cut energy consumption by 40%.

The «Money Back through the Window» project in Hungary examined 262 environmentally beneficial measures from 56 different companies. Overall, these provided savings of €58.8 million euro: 95 needed no investment at all, 106 paid back within 3 years, and 61 paid back over a longer period.

Oran Pre-Cast manufactures concrete slabs in Ireland. Using new technology (bed plotter) to cut the slabs more accurately has reduced waste and improved plant productivity by 20%.

In Germany, transport firm Spedition Wormser improved its logistics to cut back on empty rides and trained drivers to drive economically and ecologically. Fuel consumption was cut by 740,000 litres a year saving the company €659,000 a year.

The PERBIOF project in Italy, funded under the EU LIFE programme, developed an innovative technology for treating municipal and/or industrial wastewater. By using this technology, €72 million can be saved in costs per year.



Sources and references

- Figures 1 and 2** Ecorys (2009), "Study on the competitiveness of the EU eco-industry"
- Figure 3** Roland Berger Strategy Consultants (2006)
- Figure 4, 11 and 13** European Commission sources
- Figure 5** GHK (2007), "Links between the environment, economy and jobs"
- Figure 6** UNEP (2010), "Global trends in sustainable energy investment"
- Figure 7** IEA (2010), "World Energy Outlook 2010"
- Figures 8, 9 and 10** Eurostat data
- Figure 12** Ecofys (2009), "Sectoral Emission Reduction Potentials and Economic Costs for Climate Change (SERPEC-CC)"
- Figure 14** CapGemini, Deloitte & Ramboll Mngt (2010), "EU Project on Baseline Measurement and Reduction of Administrative Costs"

Endnotes

- 1 Ecorys (2009), "Study on the competitiveness of the EU eco-industry"
- 2 Ecorys (2009), "Study on the competitiveness of the EU eco-industry"
- 3 Ecorys (2009), "Study on the competitiveness of the EU eco-industry"; GHK (2007), "Links between the environment, economy and jobs"
- 4 GHK (2007), "Links between the environment, economy and jobs"
- 5 Employ-RES (2009), "The impact of renewable energy policy on economic growth and employment in the European union"
- 6 Employ-RES (2009), "The impact of renewable energy policy on economic growth and employment in the European union"
- 7 UNEP (2010), "Global trends in sustainable energy investment 2010"
- 8 CEC (2008), "Second Strategic Energy Review - an EU energy security and solidarity action plan", COM(2008) 781 Brussels, European Commission.
- 9 GHK (2009), "The economic benefits of environmental policy"
- 10 HSBC Research
- 11 Oakdene Hollins "Further Benefits of Business Resource Efficiency" 2011
- 12 GHK (2009), "The economic benefits of environmental policy"
- 13 European Commission (2010), "Taxation trends in the European Union", European Commission"
- 14 Source: Green Budget Germany
- 15 Bloomberg New Energy Finance
- 16 VITO (2007), "Sectoral costs of environmental policy"
- 17 CapGemini, Deloitte & Ramboll Mngt (2010), "EU Project on Baseline Measurement and Reduction of Administrative Costs"
- 18 Centre for Retail Research



European Commission

EU environment policy supporting jobs and growth

Luxembourg: Publications Office of the European Union

2011 — 24 pp. — 21 x 21 cm

Europe Direct is a service to help you find answers
to your questions about the European Union

Freephone number (*):

00 800 6 7 8 9 10 11

(*)Certain mobile telephone operators do not allow access to 00
800 numbers or these calls may be billed.

Copies of this publication are available
free of charge while stocks last from :
<http://bookshop.europa.eu>
Fax : 32-2-299 61 98

ISBN-13-978-92-79-19989-9
doi.10.2779/7532

© European Union, 2011

Reproduction is authorised provided the source is acknowledged.

Printed in Luxembourg

PRINTED ON RECYCLED PAPER THAT HAS BEEN AWARDED THE EU ECO-LABEL FOR GRAPHIC PAPER
([HTTP://EC.EUROPA.EU/ECOLABEL](http://ec.europa.eu/ecolabel))

