

Combating climate change

The EU leads the way



European Commission

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Europe on the move series

2008 – 24 pp. – 16.2 × 22.9 cm

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European Commission
Directorate-General for Communication
Publications
B-1049 Brussels

Manuscript completed in September 2007 and updated in September 2008

Cover illustration: © iStockPhoto

Luxembourg: Office for Official Publications of the European Communities, 2008

ISBN 978-92-79-09749-2

DOI 10.2775/14494

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The threat and the challenge

Climate change is one of the greatest threats facing the planet. If the Earth's temperature rises by more than 2 °C above pre-industrial levels, climate change is likely to become irreversible and the long-term consequences could be immense. Low-lying areas of the Earth, including large parts of many European countries, could eventually disappear under rising sea levels. Moreover, in many parts of the world there would not be enough fresh water to go round. Extreme weather events causing physical and economic damage would become more frequent. Economies could go into decline from the cost of dealing with a different climate.

The Earth's average temperature was largely stable for 10 000 years until the Industrial Revolution. Since 1850, the first date from which there is consistent accurate measurement, it has risen by 0.76 °C. Unless we act, it is likely to rise by a further 1.8–4.0 °C this century and possibly by as much as 6.4 °C, according to an international panel of scientists convened by the United Nations (UN). The race is on to prevent the world reaching what is believed to be the tipping point, a 2 °C increase. It will most likely be lost if global emissions are not stabilised by around 2020 at the latest and then cut to around half of their 1990 levels by 2050.

With more extremes of climate, it is not just Venice that will have to upgrade its flood defences.



Why the climate is changing

The atmosphere contains water vapour, carbon dioxide and other naturally occurring gases that let in sunlight but absorb the heat that is radiated back off the Earth. This natural process, called the 'greenhouse effect', keeps the Earth's temperature at a level that supports life. Without it, the global average temperature would be an unbearable -18°C .

However, human activities such as the burning of fossil fuels and the destruction of forests to make farmland are increasing the levels of carbon dioxide and other heat-trapping gases in the atmosphere. The addition of these 'greenhouse' gases is enhancing the natural greenhouse effect, making the Earth warmer and changing the climate.

The solution lies in reducing global emissions of greenhouse gases, in particular carbon dioxide. This means making better use of natural resources. Fossil fuels – oil, gas and coal for electricity, heating, cooling and transport – are major sources of greenhouse gas emissions. We need to burn less of them and burn them more efficiently. At the same time, it is important to prevent carbon dioxide escaping into the atmosphere, for example by 'capturing' it as it is produced, and then storing it underground in depleted gas fields or salt caverns.

Reversing deforestation, particularly the disappearance of tropical forests, which act as carbon 'sinks' that absorb carbon dioxide, is also essential for tackling climate change. Forests soak up carbon dioxide when they are growing but give it off when they are cut down.

There are other contributors to global warming, such as methane emitted from agriculture and the disposing of waste in landfill sites or the emissions caused by excessive fertiliser use, but fossil fuel use and deforestation are the main culprits.

The way forward: an integrated response

The way forward for the EU is an integrated energy and climate change policy, as the burning of fossil fuels for energy purposes is a major contributor to climate change. EU leaders endorsed such a policy already in March 2007. This demonstrates Europe's global leadership in tackling climate change while paving the way for the EU to increase its security of supply and strengthen its competitiveness.

An integrated energy and climate change policy signals the launch of a new industrial revolution to transform the way we produce and use energy, and the types of energy we use. The goal is to move to a climate-friendly economy based on a combination of low-carbon technologies and energy sources.

To limit global warming to 2 °C, global emissions of greenhouse gases will need to stop increasing within 10 to 15 years and then be cut to around half of 1990 levels by 2050. The EU is striving for a new global agreement to reach these goals. As a first step, it considers that industrialised countries should collectively cut their emissions of greenhouse gases to 30% below 1990 levels by 2020. Developing countries, such as China and India, will also need to start limiting the growth in their emissions.

To underline its determination and set an example for its partners to follow, the EU has agreed to cut its own greenhouse gas emissions by at least 20% by 2020 regardless of what other countries do. The EU plans to achieve this reduction through actions programmed in the new integrated energy and climate policy together with measures already in place.



More information
on the EU's integrated response:
ec.europa.eu/climateaction/



Burning coal to produce
electricity is particularly
harmful to the climate.

EU leaders decided to:

- save 20% of energy consumption compared with projections for 2020 by improving energy efficiency;
- increase to 20% by 2020 the share of renewable energies in overall energy consumption, thus almost tripling the current level;
- increase tenfold by 2020 – to at least 10% – the share of renewable fuels, including biofuels, in overall petrol and diesel consumption; all biofuels – whether EU-produced or imported – must be produced in a sustainable way; incentives will be provided for the development of biofuels from waste, residues and other non-food sources;
- develop and promote low- or even zero-emitting technologies, including carbon capture and storage to prevent CO₂ entering the atmosphere by capturing it and storing it underground in depleted gas fields or old salt mines – so that these can make a major contribution to reducing emissions by 2020;
- better integrate EU energy markets, i.e. moving towards more competitive, Europe-wide electricity and gas markets;
- better integrate EU energy policy with other policies, not just with environment policy, but also with policies such as research, agriculture and trade;
- increase international cooperation: if the EU can take a common approach on energy, and articulate it with a common voice, it can lead global debate.

In January 2008 the European Commission presented specific policy proposals on these points to set the EU – and its citizens – on the right course to fighting climate change, increasing security of energy supply and promoting continued economic growth.

It's faster and cleaner by train: cutting vehicle emissions is critical in combating climate change.



What the scientists say

Over the past 100 years the mean temperature has increased by almost 0.74 °C worldwide. Europe is warming faster than the global average: the temperature has increased by about 1 °C. Twelve of the 13 warmest years worldwide since reliable records began in 1850 occurred between 1995 and 2007. The impact of rising temperatures can now be seen in melting glaciers and Arctic ice, changing rain and snowfall patterns, harsher droughts and heat waves, and the greater intensity of tropical cyclones.

Many experts believe that global warming must be limited to no more than 2 °C above the pre-industrial temperature if we are to prevent climate change from having irreversible impacts. But the scientific consensus is that the world's average temperature is likely to rise by between 1.8 °C and 4 °C above today's levels in the course of this century, and in the worst case by as much as 6.4 °C, if no further action is taken.

There was a 70% increase in emissions of greenhouse gases worldwide between 1970 and 2004. In the energy supply sector, the increase was 145%. The growth from transport was 120% and from industry 65%. There was a 40% increase from the reduced capacity of forests to 'trap' carbon dioxide emissions, and as a result of changes in land use.

The international forum responsible for assessing the scientific evidence of climate change and its impacts is the Intergovernmental Panel on Climate Change (IPCC), set up in 1988. The panel, a joint initiative of the United Nations Environment Programme and the World Meteorological Organisation, assesses the scientific, technical and socioeconomic information relevant for understanding the risk of man-made climate change. The drafting of its assessments involves hundreds of leading experts from around the world. Since 1990, the IPCC has produced four assessment reports, the most recent in 2007. Its confidence that greenhouse gases are to blame for the change in the climate has been steadily growing with each report.

For the sake of future generations

Combating climate change is likely to mean significant adjustments to our lifestyles but that does not mean sacrificing our standard of living. The changes are perfectly compatible with the EU priorities of jobs and growth, and with sustainable development.

The costs of this action will be very limited, and in any case much less than the cost of the damage climate change will cause if we take no action. If developed countries agree

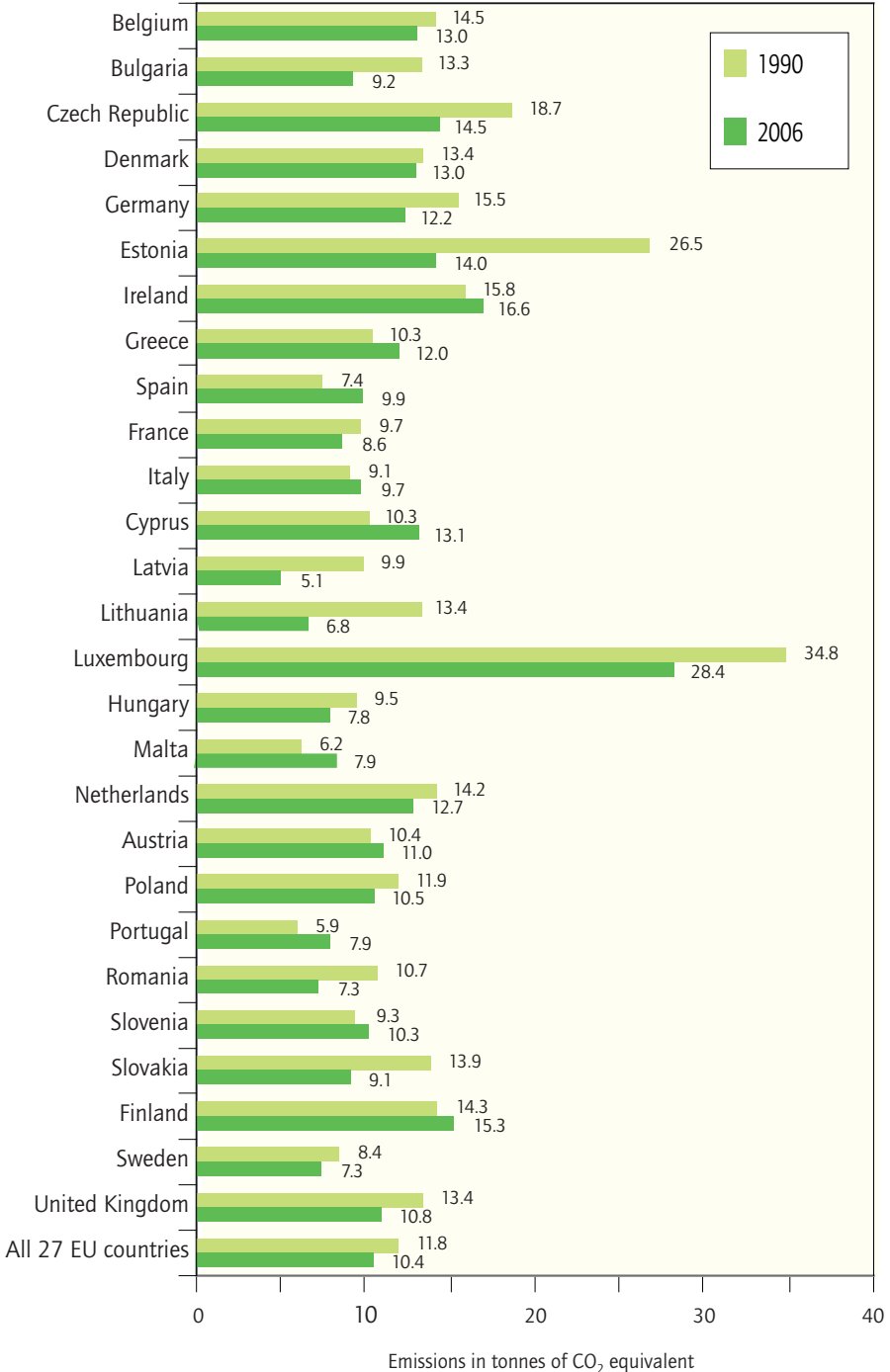
to cut their collective emissions by 30% by 2020, annual economic growth would be trimmed by less than 0.2%.

This would be a small price to pay to avoid the potential long-term costs of climate change; moreover, it does not take into account the value of other benefits such as reduced air pollution, security of energy supply at predictable prices and improved competitiveness through innovation. In practice, the economic costs of emission reduction are likely to be more than offset by these benefits.


*Without action now,
skiing holidays could
become a thing of the
past for future generations.*



Greenhouse gas emissions per person in the EU countries, 1990 and 2006



Building on our achievements



The EU is not starting from scratch in tackling climate change. The EU has been progressively strengthening its measures to increase energy efficiency, limit emissions from factories and cars, and encourage energy savings for a number of years. Rules on recycling and restricting the use of landfill sites are also contributing to reducing the amount of carbon emitted by the EU, known as its carbon footprint. The seventh framework programme on research and technology development is the latest in a series of EU research programmes to put increasing emphasis on the environment, clean and low carbon energy, and climate change.

Above all, the EU is already well into a programme designed to reduce emissions by 8% by 2012. The EU has committed to this target under the so-called Kyoto Protocol to the United Nations Framework Convention on Climate Change.

The Kyoto Protocol

The Kyoto Protocol was agreed in 1997. It set an objective for the developed world as a whole of reducing its greenhouse gas emissions by an average of 5.2% between 1990 and 2012. The 15 countries which were members of the EU at the time went further and committed collectively to an 8% reduction in their emissions. The protocol also created flexible market-based mechanisms, including emission trading, to help industrialised countries achieve these reductions at least cost and to encourage investment in clean energy projects in developing countries and economies in transition.

Even though the United States has not ratified the protocol and is therefore not formally contributing to the objective, the EU has gone ahead with concrete measures to achieve its emission targets, which take each member state's level of economic and industrial development into account. Most countries that have joined the EU since 2004 have individual targets negotiated under the Kyoto Protocol when they were still outside the EU.

Meeting the targets

The programme to help the EU and its member states meet their emission targets under the Kyoto Protocol is called the European climate change programme (ECCP). Managed by the European Commission, the ECCP has led so far to the development of some 40 European-level policies and measures to reduce greenhouse gas emissions. These complement the actions being taken by individual EU countries at home. The EU-level measures include energy standards for buildings and laws to restrict the use of certain industrial gases with a very high global warming effect. By far the most important policy developed under the ECCP is the EU trading scheme for greenhouse gas emissions (see box on page 12).

The EU has succeeded in breaking the link between economic growth and greenhouse gas emissions. While the EU economy grew between base year 1990 and 2006, the overall emissions of its 27 members fell by 10.8%. For the 15 'older' member states (EU-15), the drop in emissions was 2.7%. This is encouraging, but much more needs to be done to reach the EU-15's 8% reduction target by 2012. The most recent projections of future emissions show that this target can be met provided that EU countries actually carry out all the actions that are planned.

Wind turbines being installed will become an increasingly common sight in the future.



An innovative mechanism

The cornerstone of the EU's strategy for fighting climate change is the EU emission trading scheme (EU ETS), launched in January 2005. It was the first international trading system for CO₂ emissions and has become the main driver behind the rapid expansion in carbon trading around the world. Emission trading helps to ensure that emission cuts are achieved at least cost.

The EU ETS currently covers around 11 600 installations in the energy and industrial sectors which are collectively responsible for close to half the EU's emissions of CO₂. By putting a cost on the carbon emissions of these installations, the scheme creates a permanent incentive for participating companies to minimise emissions as far as possible.

Under this scheme, the national authorities in each EU country allocate a certain number of emission allowances to each installation. The 'cap', or limit, on the total number of allowances creates the scarcity needed for the market to function. Companies that keep their emissions below the level of their allowances can sell the allowances they do not need. Those facing difficulty in keeping to their allowances must either take measures to reduce their own emissions (for example, by investing in more efficient technology or using less carbon-intensive energy sources), or buy the extra allowances needed on the market – effectively paying another company for reducing emissions on their behalf.

Companies covered by the EU ETS are also allowed to use emission credits generated by emission-saving projects in non-EU countries. This is organised under the Kyoto Protocol's clean development mechanism (CDM) and joint implementation (JI) instrument. Demand for these credits is a strong driver for investment in ideas that reduce emissions in other countries.

Installations in the energy and industrial sectors are not the sole culprits adding to the level of CO₂ in the atmosphere. Consequently, the European Commission has proposed extending the EU ETS from 2011 to include the rapidly growing emissions from aviation. In addition, a review of the scheme currently under way may lead to more sectors and gases being covered.

The contribution of energy policy

Greenhouse gas emissions come largely from energy use and production. Energy policy is therefore crucial to meeting climate change targets. Acting jointly on energy is not new. The EU has had a single policy framework for energy for many years. A joint EU response to an energy crisis is not new either. The EU has, for example, a coordinated policy on strategic reserves of oil and petroleum products as the result of a supply crisis in the early 1970s.

As the warnings from scientists about the impact of climate change have grown more and more serious, the EU has recognised the urgent need to pull together a number of strands in a single integrated climate and energy policy for Europe. This policy will provide energy supplies that are competitive, sustainable and secure, and integrated with good environmental practice which will reduce emissions of CO₂ and other greenhouse gases.

The key elements of the EU's energy policy in delivering these targets are as follows:

- more efficient power and gas markets;
- diversification;
- an ambitious renewable energy policy;
- saving energy;
- international cooperation.

More efficient power and gas markets

The choices we make as consumers have a real impact on greenhouse gas emissions from energy use and production. Virtually all EU consumers are now free to buy their gas or power from any supplier, including some which specialise in renewable energy. Efficient markets are making energy more affordable and helping remove barriers to achieving lower greenhouse gas emissions. At the same time they help EU industry retain its competitive edge. However, there is still room for improvement to ensure that everyone gets a fair deal, that new companies in the field are not placed at a disadvantage, and that power and gas flow freely across EU borders. Cross-border trade is vital in making markets as competitive as possible.

Emission credits are available for investing in this climate-friendly alternative technology for brick production in India.



© World Bank photo/CDCI India carbon finance project US/BK

Diversification

Greater security of supply is about not relying on one form of energy or on a handful of supplier countries outside the EU. It is about producing more energy within the EU, and where necessary ensuring supply from other stable regions of the world. It is also about agreeing to share supplies in times of crisis since the level of import dependence of different EU countries varies considerably.

Some 80% of the energy the EU consumes is from fossil fuels – oil, natural gas and coal – all of them major sources of CO₂ emissions. Technology is helping reduce those emissions, and ‘clean’ coal technology should be operational within the next decade or so. Nevertheless, fossil fuel is a finite resource, which will have been significantly depleted by the middle of this century. Reducing the use of fossil fuels thus contributes to improving the EU’s energy security as well as helping to limit climate change.

Moreover, the EU’s own fossil fuel resources are being depleted faster than those of the world as a whole. It

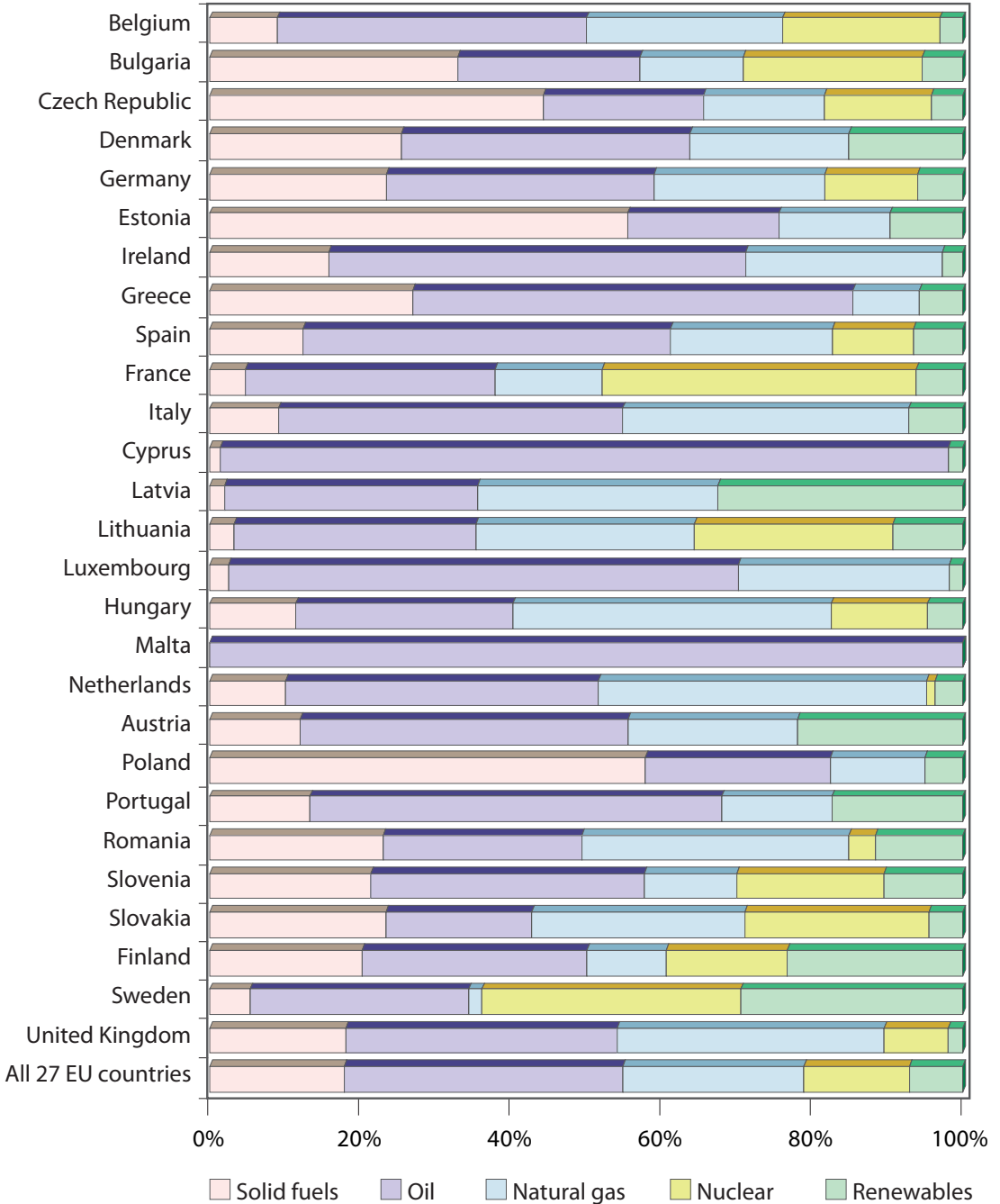
is becoming increasingly dependent on imports, and therefore increasingly vulnerable to supply and price shocks. Dependence on imported oil could rise to 95% and on imported gas to 84% by 2030, if energy consumption is not checked and the fuel mix changed. At present, the EU gets about 50% of the gas it consumes from just three sources – Russia, Norway and Algeria – and imports about two-thirds of its oil needs from the Organisation of Petroleum Exporting Countries (OPEC) and Russia. The overall level of the EU’s reliance on imported energy was 53.8% in 2006.

Diversification into more home-grown energy will need a greater use of low or zero carbon technologies based on renewable energy sources, such as wind, solar, hydro power and biomass, since the EU is short of fossil fuel resources of its own. Ultimately we are likely to have hydrogen in the mix as well. Some EU countries will also use nuclear power as part of their energy mix. For the foreseeable future this will come from nuclear fission since nuclear fusion technology is not likely to become available before the second half of this century.



Berlin is just one of several EU cities running hydrogen-powered buses with the help of EU funds.

Energy consumption by fuel type, 2006



Source: Eurostat.



If we do not use energy more wisely, the glaciers will continue to melt.

An ambitious renewable energy policy

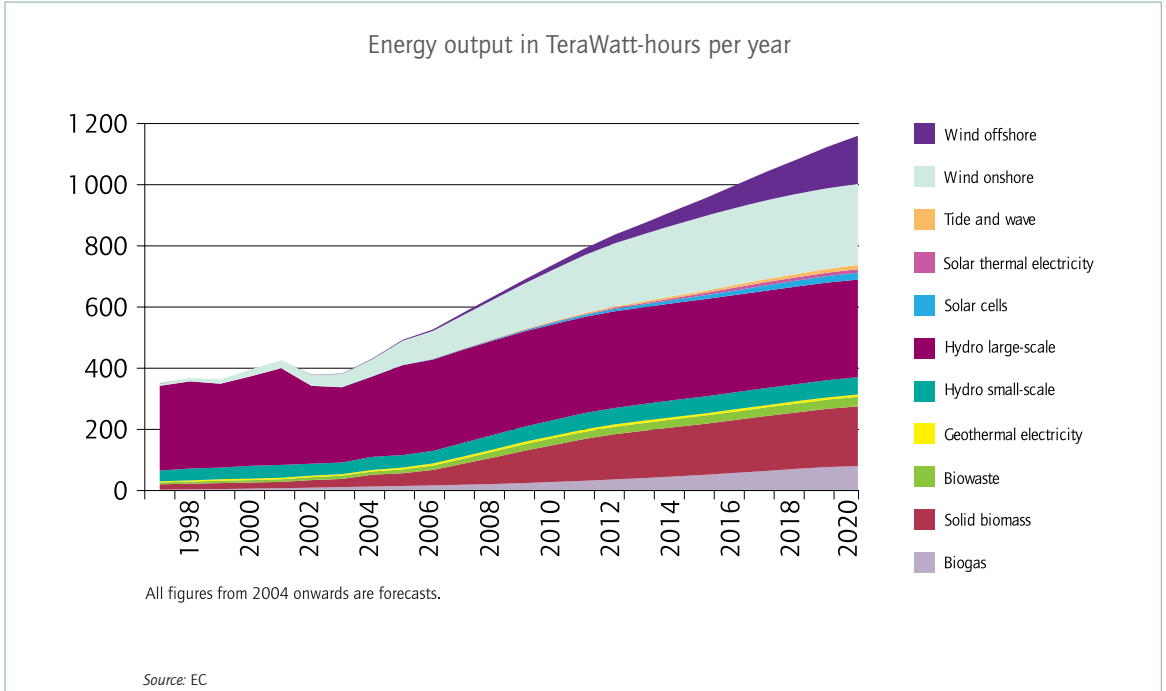
Since the 1990s, the EU has been developing and promoting the use and production of renewable energy. Promoting renewable energy displaces fossil fuel consumption. It diversifies the use of energy sources and contributes to securing the energy supply. It also develops new industries and technologies.

EU countries first agreed on an indicative target for supplying 12% of energy from renewable sources by 2010. To achieve this, new laws were adopted establishing national tar-

gets for renewable electricity and biofuels in transport to boost the level of renewable energy in the EU countries. In addition, the private sector was encouraged to make the necessary investments.

In 2007, EU leaders took an even tougher stance by establishing the target of achieving 20% of our energy from renewable sources by 2020. Different national targets have since been proposed for each country in order to reach 20% for the EU as a whole. This 20% target for renewables includes a new binding target of taking 10% of our transport fuel from renewable fuels,

How the production of green electricity is expected to grow in the EU



including biofuels, by 2020. The use of renewable energy will rise dramatically as a result of these objectives.

The use of biomass (wood), biogas and biowaste in, for example, power plants will grow. So will co-generation, where steam generated in electricity production is not wasted but used, for instance, in district heating systems. Greater use will also be made of biomass boilers in buildings, particu-

larly when replacing oil or electric water heating systems. Drawing heat from the ground (geothermal sources) is also expected to increase, as well as the use of solar energy. The biggest growth in electricity production will most likely come from wind generation through more and increasingly efficient wind turbines. With the expected growth in renewable fuels for transport, this fast-growing sector will have a means of reducing its CO₂ emissions.

A new role for agriculture and forestry

Bioenergy from agriculture and forestry plays a key role in combating climate change and increasing the security of energy supply. It is a renewable energy source amongst others that include wind, solar, hydraulic and geothermal power.

Bioenergy is produced from solid biomass, biogas or liquid biofuels that are available throughout Europe. Biomass is provided by forestry, agriculture and organic waste and residues, while liquid biofuels currently mainly come from crops. Biomass, biogas and biofuels in general can be stored easily, which means that bioenergy can be produced from them when needed. They generate electricity, deliver direct heat and are used as fuel for transport. Bioenergy accounts for about half of the renewable energy consumed in the EU.

Biofuels are currently the only available large-scale substitute for petrol and diesel fuel in transport. Encouraging the use of biofuels helps to cut emissions and means a wider choice of fuel supplies.

The EU has significant agricultural potential for the production of biofuels. In the near future, biofuels will be produced from a much wider range of agricultural and forest products and organic wastes, rather than purely from crops that are also used for producing food and feed. Whether produced in the EU or not, we must ensure that the production of biofuels is sustainable, i.e. it does not lead to deforestation or loss of biodiversity, or undermine food production.

Saving energy

The easiest way to increase the security of supply and help the climate is to reduce demand for energy. This means using energy more efficiently so that less is wasted. This can be done through energy-saving technology or by changing our behaviour, or a combination of both. Above all, saving energy also makes economic

sense: the EU's target of using 20% less energy by 2020 than we would otherwise be doing will reduce spending on energy by €100 billion a year.

This target may sound hard to achieve, but in practice there is great scope for using energy much more efficiently, sometimes with little effort. For example, energy labelling, minimum efficiency standards and

voluntary agreements by manufacturers of household appliances have already reduced the energy consumption of an average new fridge or freezer by almost 50% since 1990. For several other appliances, such as washing machines and dishwashers, savings of over a quarter have been achieved. The international Energy Star programme provides guidance on the most energy-friendly office and computer equipment.

Transport is one area where there is huge unexploited potential for energy efficiency, so the EU is working with the automobile and fuel industries to make this happen and reduce CO₂ emissions from vehicles. It is also working on the infrastructure and policies to cut traffic congestion. Traffic jams waste fuel.

Buildings account for 40% of the EU's energy requirements. Tightening standards for buildings and their

heating and hot water systems will reduce the amount of energy they use and reduce emissions through wasteful heating and cooling. Research will also help to come up with new and better materials for insulation. Measures like this have the potential to cut energy consumption in buildings by 28% by 2020. That is equivalent to saving more than 10% of the EU's total energy consumption.

A lot of energy is wasted by inefficient appliances. The EU is therefore pushing for still more energy-efficient appliances by enforcing energy labelling and fixing minimum performance requirements.

Greater use of energy-efficient lighting on our streets, in our offices and homes is relatively easy to achieve, and new EU standards on this are likely to come into force before the end of the decade. Switching from 'ordinary' light bulbs to energy saving bulbs, for

Make sure he explains the energy consumption; the red, yellow and green EU energy label is there to help.



An energy-saving light bulb would be cheaper in the long run.



© Corafoto

example, reduces energy consumption by over 75%. It costs more to buy the bulb, but lower electricity bills more than make up for the initial cost.

Many of us use energy unnecessarily without realising how wasteful our behaviour is. Better information on our consumption from more sophisticated meters in our cars and in our homes will in future enable us to use energy more intelligently. But it calls for a change in our behaviour. The EU's 'Sustainable energy Europe' campaign provides pioneering examples.

New and innovative ideas on how to fight global warming are most likely to be produced in our cities. But success in this field can only be achieved through active citizen participation. This is the underlying principle of the 'Covenant of Mayors' in which participating cities pledge their unconditional commitment to go beyond EU objectives in reducing CO₂ emissions.

International cooperation

Import dependence will decrease, but remain a reality. Good relations with energy-producing countries, and the countries through which energy passes, are therefore priorities. This means cooperating with countries to the east and south – Russia, the countries of eastern Europe which share borders with the EU, countries in central Asia, the Caspian and the Black Sea, and around the Mediterranean.

Cooperation with other consuming nations is equally important, be they industrialised or developing, in order jointly to agree measures to reduce greenhouse gases, use energy more efficiently, develop renewables and low-emission energy technologies, particularly carbon capture and storage. Research will play a key role here in supporting the spread of energy technologies that are both affordable and clean.

The role of technology

While curbing the use of fossil fuels may mean we live differently in future, it does not mean jeopardising our standard of living, now or in future. Technology can make a major contribution to more efficient use of energy in our everyday lives, in industry, in transport and in sustainable development.

Being the first in the world in the field of eco-innovation and sustainable energy gives EU industry first-mover advantage, and generates jobs and growth. European industry is already well placed, with about one third of the world market in eco-industries and sustainable energy systems. European companies are leaders in sustainability in nearly three quarters of all major industrial sectors, and eco-industries, sustainable energy systems and services provide hundreds of thousands of jobs.

Promoting clean innovation

The EU's environmental technology action programme covers a spectrum of actions to promote eco-innovation and the take-up of environmental technologies. It promotes research and development, mobilises funds, and improves market conditions. Under the EU's seventh framework programme of funding for research

and technology development for 2007–13, a significant share of funds is allocated to research in low or zero carbon energy technology. There are also funds for energy research and promotion of energy savings within the EU's competitiveness and innovation programme. This includes a sub-programme called 'Intelligent energy – Europe'.

Much of this funding will go to projects which will directly or indirectly address climate change. They include: development of hydrogen and fuel cells on which we will increasingly have to rely for energy as we decrease our use of fossil fuels; capture and storage of CO₂; energy efficiency; clean and efficient transport and environmentally friendly materials.

Moreover, the EU assists in disseminating best practice and providing a platform for leading scientists to share knowledge. These activities include a strategic energy technology plan designed to help the EU lead the way in a complete shift in our approach to supply, production and distribution of energy. They also cover technology platforms, such as the European hydrogen and fuel cell technology platform.

Reducing your carbon footprint

Reducing the EU's carbon footprint is not just about remote decisions by policymakers and large investments by industry. It is about individual contributions, and about staying informed. Small changes can make a big difference.

In your home

Seventy per cent of the energy used by households in the EU is spent on heating homes and another 14% on heating water. By taking the following measures, you can cut emissions and often save money at the same time.

- **Reduce the temperature** of the central heating by just 1 °C; set the thermostat even lower when you are out and at night to cut energy bills by as much as one quarter.
- **Insulate** central heating pipes and wall cavities. Heat loss through walls, the roof and the floor commonly accounts for over 70% of overall heat loss. Use the opportunity of a renovation to improve the energy performance of your home.
- **Move the fridge** away from the cooker or hot water heater, so that the heat does not force the fridge to work harder. Do not let it frost up; let food cool before putting it in the fridge.
- **Think before you use appliances.** Use the washing machine or dishwasher only when they are full, think about the temperature cycle to use, and use a tumble dryer only when absolutely necessary. When you make a cup of tea or coffee, boil only the amount of water you need. If we each avoided boiling one litre of water unnecessarily each day, the energy saved could power one third of Europe's street lights.
- **Switch off.** Switching off five lights in hallways and rooms in your home when you do not need them on can save around €60 a year. Turn off the computer in your office as well. And unplug your mobile phone charger when you are not using it.
- **Do not leave appliances on standby.** Switch off your home electronics, computer, modem, etc. completely and do not leave them in standby mode. This can save you as much as €100 per year.
- **Turn off the tap** while brushing your teeth, and take a shower instead of a bath. A standard shower uses up to four times less water than a bath.
- **Sort for recycling.** Recycling one aluminium can saves 90% of the energy needed to produce a new one. Recycle organic waste as compost. Reduce waste by using fewer one-time disposable products and packages, and buy intelligently: a 1.5 litre bottle requires less energy to make and produces less waste than three half-litre bottles.
- **Switch to 'green' electricity.** Take advantage of the market to select utilities offering clean energy and greater quality.

In your car

Environmentally aware driving can lower fuel consumption by 5%. Examples of eco-driving are listed below:

- **Start driving soon after starting the engine.** Warming the engine uses more fuel, so set off without using the throttle and shift to higher gears as soon as possible. The higher gears are more fuel-efficient. Turn off the engine when stationary for more than one minute.
- **Check the tyre pressure.** If it is down by 0.5 bars, your car uses 2.5% more fuel.

- **Use low-viscosity motor oil.** The best oils can reduce fuel consumption and CO₂ emissions by more than 2.5%.
- **Close the windows, especially at higher speeds, and take the roof rack off.** Even empty roof racks can increase fuel consumption and CO₂ emissions by up to 10%.
- **Slow down and drive smoothly.** Driving faster than 120 km per hour consumes 30% more fuel per kilometre than driving at 80 km per hour. And keep a steady speed, thus consuming less fuel.

Elsewhere

- **Travel by train.** One person in a train emits two thirds less carbon dioxide than one person alone in a car.
- **Explore alternatives to flying.** Flying is the world's fastest growing source of CO₂ emissions. If you fly, then consider 'offsetting' your carbon emissions through an organisation which will invest the small amount it costs you in renewable energy or tree-planting.
- **Cycle, walk, use a car-pool, take public transport and telework.**
- **Buy intelligently.** Go for appliances which are labelled as energy-efficient, light-packed and recyclable products, local and seasonal food, and fuel-efficient cars with the lowest levels of CO₂ emissions per kilometre.



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Wasting water wastes energy.

Further reading

Climate action: Energy for a changing world:
ec.europa.eu/climateaction

Climate change:
ec.europa.eu/environment/climat/home_en.htm

'EU action against climate change: Leading global action to 2020 and beyond' (brochure):
ec.europa.eu/environment/climat/pdf/bali_post_2012.pdf

The 'Sustainable energy Europe' campaign:
www.sustenergy.org



The 'ManagEnergy' initiative:
www.managenergy.net

More details about climate change from the European Environment Agency (data and reports):
eea.europa.eu/themes/climate



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Representation in Northern Ireland

Windsor House
9/15 Bedford Street, Belfast BT2 7EG
Tel. (44-28) 90 24 07 08
Fax (44-28) 90 24 82 41
Internet: www.ec.europa.eu/uk

EUROPEAN PARLIAMENT OFFICES

Office in Ireland

European Union House
43 Molesworth Street, Dublin 2
Tel. (353-1) 605 79 00
Fax (353-1) 605 79 99
Internet: www.europarl.ie
E-mail: epdublin@europarl.europa.eu

United Kingdom Office

2 Queen Anne's Gate, London SW1H 9AA
Tel. (44-20) 72 27 43 00
Fax (44-20) 72 27 43 02
Internet: www.europarl.org.uk
E-mail: epLondon@europarl.europa.eu

Office in Scotland

The Tun, 4 Jackson's Entry,
Holyrood Road, Edinburgh EH8 8PJ
Tel. (44-131) 557 78 66
Fax (44-131) 557 49 77
Internet: www.europarl.org.uk
E-mail: epedinburgh@europarl.europa.eu

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The international consensus is growing that the planet is facing irreversible climate change unless action is taken quickly. The EU has already formulated a clear response in

the shape of an integrated energy and climate change policy, a commitment to cut emissions of 'greenhouse' gases by at least 20% by 2020, and a promise to take the lead in international negotiations to adopt even more ambitious targets. This will help to prevent the world's temperatures rising by more than 2°C, the level which is increasingly thought by scientists to be the point of no return. To achieve this goal, we need to use energy resources more sustainably and take switching to more renewable forms of energy, capturing and storing carbon dioxide and reversing deforestation more seriously. This may involve a change in our lifestyles, but need not jeopardise our standard of living, or those of future generations.



Publications Office

Publications.europa.eu

ISBN 978-92-79-09749-2



9 789279 097492