Important legal notice

Overviews of the European Union activities
Energy

In brief

We take energy for granted. Fuel shortages and power cuts are rare, but timely, reminders that we rely on energy for transport, for heating our homes in winter, cooling them in summer and running our factories, farms and offices. But many energy resources are finite. In addition, energy use is often a source of pollution. Sustainable development means using less fossil fuel more intelligently.

Some 80% of the energy the EU consumes is from fossil fuels – oil, natural gas and coal. A significant and increasing proportion of this comes from outside the EU. The Commission estimates that by 2020, 70% of the EU's primary energy needs, including 90% of its oil requirements, will be met by imports. So, the EU is vulnerable to supply cuts or higher prices resulting from international crises. It also needs to burn less fossil fuel in order to reverse global warming. The way forward requires us to save energy, use it better, develop alternative sources – particularly within the EU, and seek more international cooperation.

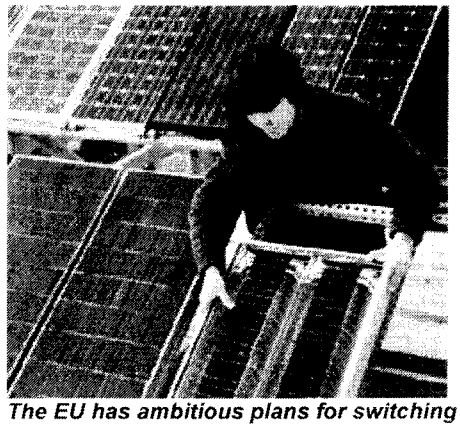
The EU already has a target of generating 22% of electricity from renewable energies by 2010, though it is unlikely to meet it. It is considering a target of saving at least 1% more energy each year than over the last five years. At the same time, it is creating a single energy market where suppliers can compete everywhere freely on the basis of price. This contributes to the efficient use of energy.

Imports remain essential

Imports will be important for the foreseeable future. The EU keeps strategic stocks of fuel to reduce its vulnerability to problems on world markets, but long-term security of supply also means ensuring the EU is not over-dependent on a few countries for supplies, or that dependence is compensated for by close co-operation. A close energy dialogue is developing as a result with Russia, a major source of fossil fuels and potentially of electricity. Cooperation with energy trading partners, and notably developing or emerging economies, includes investment and transfer of know-how in production and transport because working together for a free flow of gas, oil and power can be mutually beneficial.

Changing the fuel mix

Even so, to reduce dependence on imports and cut pollution, it remains vital to cut fossil fuel consumption by using energy more efficiently in industry, transport and the home, making use of renewable energy sources to generate electricity, heat or cool buildings, and fuel transport, particularly cars. This presupposes an ambitious switch to wind, biomass, hydro and solar power and bio-fuels from organic matter. The ultimate goal is for the EU economy to become based on hydrogen, not dwindling reserves of fossil fuels. A European Hydrogen and Fuel Cell Technology Platform is drafting a blueprint for the eventual transition.



The EU has ambitious plans for switching

Caring for the environment

Caps on the amount of emissions of carbon dioxide (CO2) EU industry can spew into the atmosphere apply from 2005. Companies who exceed their emissions allowance will have to trade with others who have not used up all their allowance. This will encourage more efficient energy use and above all cut pollution and keep the promises the EU has made in the Kyoto Protocol on climate change and reversing global warming.

to renewable energies.

Saving energy by using it more efficiently

Another way in which the EU backs more efficient fuel use is by promoting the use of 'co-generation'. Gas-fired co-generation plants produce both electricity and heat, mainly in the form of steam. This maximises the use of the gas and is also environmentally friendly because gas produces less CO2 than other fossil fuels.

Energy is also saved through energy performance standards for new buildings and those being renovated, requiring boilers and air-conditioning to be inspected regularly and buildings to have energy certificates. Standards like these have the potential to cut 25% of the demand generated by the anticipated doubling of air-conditioning use by 2020.

More efficient transport is equally crucial: more people and freight should travel by rail, and better use should be made of public and private transport. This means getting more kilometres to the litre, better traffic management and better urban planning. Traffic jams and commuting waste fuel and vehicle exhausts pollute. The EU hopes that bio-fuels (from organic matter) will provide 5.75% of total energy consumption by 2010. The Commission believes it should be possible to replace 20% of the oil we use with bio-fuels by 2020.

Using energy more intelligently

Technology will play a key role in using energy more rationally. There is money for energy research in the EU's Sixth Framework Programme for Research and Technological Development. In addition, the EU is spending €200 million from its *Intelligent Energy for Europe* programme between 2003 and 2006 to support research into energy saving, energy efficiency, renewable energies and the energy-related aspects of transport. The focus is on research programmes that help strengthen security of supply, fight climate change and make industry more competitive.

The single energy market

A competitive energy market helps efficient energy use. In the past, national gas and electricity markets were separate 'islands' within the EU, where supply and distribution were in the hands of monopolies. Now, markets have been opened up to competition and national borders in energy markets are disappearing, though the European Commission would like to see even faster progress.

The EU facilitates competition with funding to connect isolated networks and improve cross-border interconnections, both within the EU and with supplier countries For their part, all suppliers have guarantees under single energy market rules that they can have access to the distribution grid and pipeline networks of other EU countries and that they will pay a fair price for access.

All businesses and many consumers are already free to choose their own supplier of gas and electricity. All other consumers will be by mid-2007. The additional competition comes with additional protection. There are safeguards to protect consumers against their lights going out or their heating going cold. These ensure that cost-cutting by competing suppliers does not result in under-investment, that consumers in remote areas or on low incomes are not regarded as too small or too far away to bother about, and that there will always be someone to step in seamlessly if a supplier goes out of business.

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Energy-efficiency tops Commission's priorities list

In Short:

In the context of expected "continued higher prices" for oil and gas, energy-saving measures are due to become the Barroso Commission's key priority on energy, says Commissioner Piebalgs.

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Background:

Six months after he took office in November last year, Energy Commissioner Andris Piebalgs revealed his priorities for the next five years at a conference on 13 April.

Issues:

Piebalgs's six priorities are:

- **Energy efficiency**: The target is to save the equivalent of 70 million tonnes of oil per annum by 2010. According to Piebalgs, this would represent savings of 15 billion euros per annum, a very significant reduction of CO2 emissions and a reduction of 4% in terms of energy dependency from external supply sources.
- **Internal market in gas and electricity**: The objective is to continue to open up markets so as to create a real Community-wide and truly competitive market. A progress report with possible future action points will be published at the end of the year.
- **Renewable energy**: Objective is to keep growth trend in renewables at 20% per annum.
- **Nuclear safety and security**: Piebalgs's vision is based on four aspects: security of nuclear materials, radiological protection, nuclear safety and the reliable disposal of nuclear waste.
- **EU external energy policy relations**: Continuation of EU-Russia energy dialogue and strengthening of relations with producer regions, consumer and transit countries. The Commission will launch consultations (Green Paper) on the security of energy supply by the end of this year.
- **Better linkage of energy, environment and research policy**: R&D to focus among other things on CO2 capture and storage for zero emission power generation; clean coal; hydrogen and fuel cells; renewables.

Positions:

Setting the context of his action for the next five years, Piebalgs highlighted a number of points:

- Likelihood of "continued higher **oil and gas prices**"
- EU continued commitment to **Kyoto targets** and related "difficult choices" in terms of energy mix, security of supply and energy sector's competitiveness
- Climate change challenges posed by the expected continued "explosive growth" of **China** and **India**
- Expected rise in the EU's **dependence** on external energy supply (90% for oil and 80% for gas by 2030 as projected in the Green paper on security of supply)

Latest & next steps:

- Piebalgs will present a consultation document (Green Paper) on energy-efficiency in late spring
- Conclusions on the Green paper will be drawn at the end of the year, which will include commitments for action