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# SAVING 20% BY 2020



## ACTION PLAN FOR ENERGY EFFICIENCY: REALISING THE POTENTIAL

Change our electric bulbs, our boilers and our refrigerators, insulate our houses, buy low pollution cars, use public transport: these are some of the things we should do if we want to protect our environment and guarantee a stable supply of energy for our children.

Yet, in spite of record high energy prices, increasing environmental concerns and concerns over security of supply, Europe continues to waste a whopping 20% of its energy – possibly even more. By the year 2020 this could cost us well over €100 billion, as well as cause further damage to our environment, a cost which cannot be expressed in monetary terms. But lack of energy efficiency also affects each and every one of us on a far more personal level: by using outdated energy-consuming equipment and failing to take simple measures to save energy, we are driving up our energy bills and inadvertently raising our cost of living.

The market alone will not enable us to make the necessary energy savings. The prices of electricity and petrol, which are certainly expensive for part of the population, do not reflect the genuine cost of energy to our society and do not encourage consumers to take advantage of all or part of the savings that are available. According to a recent Eurobarometer study on attitudes towards energy

(2006), 26% of Europeans would continue to use their car just as often if the price of fuel were to reach 2 euros, while 31 % would use it just "a bit less often". Indeed, at a time when energy sources are becoming scarce, the European Union is still facing a growth in energy consumption. Furthermore, the room for manoeuvre on the energy supply side is still limited. Renewable energy has not evolved enough to replace oil and gas in a sufficient quantity. At the same time saving energy is the easiest, most rapid and most effective way to answer the challenge of our energy dependence and reduce damage to the environment. This fact has been globally recognised today and initiatives to improve energy efficiency are taking place worldwide – in China, for example, the government is taking into account the energy efficiency of the olympic buildings with the signature of the Green Olympic Protocol.

## **It's never too late to start saving**

The good news is that, provided the EU acts in an integrated and coordinated manner now, saving a substantial amount of energy is still possible. The Action Plan for Energy Efficiency has set a wholly achievable goal of reducing our energy consumption by 20% by 2020 – an achievement that could save us 100 billion euros a year. It will mean positive effects for industry, consumers and the environment. It will also mean that the knock-on effects of these efforts will further contribute to realising the goals of economic growth and job creation. An integrated Energy Efficiency Action Plan can thus improve the Union's competitiveness, the living standards of its citizens, boost employment and increase exports of new, energy-efficient technology. On an individual level, small changes in our energy consumption patterns will mean saving money, helping the environment and doing our bit for a common European goal. The time to start is now.

## **Inventory: we waste far too much energy**

The consumption of energy in Europe is substantial, while the demand growth of transport and electricity represent the most worrying trend. If nothing is done to reverse this tendency, energy consumption could still increase by almost 10% over the next 15 years.

Transport alone represents almost 20% of total EU primary consumption. However, 98% of the transport market depends on oil. Transport, a vast majority of which is road, is thus responsible for 26% of CO<sub>2</sub> emissions.

Mobility, particularly by road, experienced strong growth over the last 30 years. Thirty years ago people travelled an average of 17 km per day by car, today we travel up to 35 km on average. Road transport also accounts for almost 45% of freight transport, a figure which is expected to increase further by 2010. The supremacy of road transport today is synonymous with congestion and pollution and costs the European economy around half a point of GDP per year.

The demand for electricity also experienced considerable growth in recent years. In fact two thirds of the primary energy needed to generate electricity is lost in production, transmission and distribution.

Buildings alone use 40% of the energy consumed in the European Union. Too much energy continues to be wasted in buildings because of inefficient heating and cooling systems and lighting.

Finally, certain new phenomena also contribute to the rise in our energy consumption, such as increasing use of air conditioning, the craze for gas guzzling off-road vehicles and the introduction of the stand-by mode for electrical equipment, which today represents almost 7% of total electricity consumption on its own.

**Figure2: Estimates for full energy saving potential in the end-use sectors (Source: European Commission EU-25 baseline Scenario and Wuppertal Institute 2005)**

Sector	Energy consumption (Mtoe) 2005	Energy Consumption (Mtoe) 2020 (Business as usual)	Energy Saving Potential 2020 (Mtoe)	Full Energy Saving Potential 2020 (%)
Households (residential)	280	338	91	27%
Commercial buildings (Tertiary)	157	211	63	30%
Transport	332	405	105	26%
Manufacturing Industry	297	382	95	25%

## What does the European Commission propose?

The Action Plan for Energy Efficiency has an overall objective to outline a coherent framework of policies and measures with a view to saving a substantial part of the 20% of EU annual primary energy consumption by 2020. It proposes a selection of cost-effective energy efficiency improvement initiatives to be put in place and implemented in the coming six years. The ambition is to mobilise market actors and to transform the internal energy market, with the objective of providing EU citizens with the **globally most energy-efficient buildings, appliances, processes, cars and energy systems.**

The European Commission is aware that the full and proper implementation and enforcement of existing legislation is an important element in achieving energy efficiency. Dynamic minimum energy performance requirements and labelling for appliances, equipment, buildings, vehicles and energy services, for example, are also necessary. Targeted actions to improve efficiency in generation and transmission in the energy transformation sector and comprehensive and consistent measures for the transport sector are called for. Correct pricing and coherent energy taxation, improved financing tools and economic incentives are required for all sectors.

Increased awareness and behavioural change also represent an important pre-requisite. Finally, energy efficiency issues should also be addressed on a global level, in partnership with other nations, other international organisations and with industry. Monitoring, reviewing and updating of the Action Plan will be carried out, using among other instruments, national Energy Efficiency Action Plans (which are already required by Member States further to Directive 2006/32/EC) and Strategic EU Energy Reviews.

### **The Action Plan places specific emphasis on 10 priority actions:**

- **Appliance and equipment labelling and minimum performance requirements** – updated and dynamic labelling and eco-design requirements for appliances and other energy using equipment will be developed from 2007, with particular focus on standby loss reduction. The Commission will start adopting performance requirements for 14 priority product groups with a view to having all of them approved by the end of 2008. Existing labelling classifications will be upgraded and the Framework Directive on labelling revised to reinforce its effectiveness.
- **Building performance requirements and "passive houses"** – the Commission will propose expanding the scope of the Energy Performance of Buildings Directive in 2009 and will propose EU minimum performance requirements for new and renovated buildings, following impact assessments. A strategy for so-called very low energy or "passive" houses (houses without traditional heating systems and active cooling that feature very good insulation levels, mechanical ventilation systems and highly efficient heat recovery) will be developed by the end of 2008, to ensure a more wide-spread deployment of those houses by 2015. The Commission will set a good example by leading the way, as far as its own buildings are concerned.
- **Making power generation and distribution more efficient** – the Commission will develop by 2008 minimum binding efficiency requirements for new electricity, heating and cooling capacity lower than 20 MW and consider such requirements for larger production units. Together with the energy supply industry it will develop guidelines on best operating practices to raise average generation efficiency for all plants and agree upon guidelines on best regulatory practices to reduce transmission and distribution losses. A proposal for a new regulatory framework to promote the connection of decentralised generation will be put forward in 2007.
- **Achieving fuel efficiency of cars** – in order to address energy efficiency and CO<sub>2</sub> emissions from cars, the Commission will, if considered necessary, propose legislation to ensure that the 120g CO<sub>2</sub>/km target is achieved by 2012 through a comprehensive and consistent approach, in accordance with the agreed EU objective. A proposal to strengthen EU requirements for labelling of cars will also be proposed.
- **Facilitating appropriate financing of energy efficiency investments for enterprises** – Through a number of specific initiatives in 2007 and 2008 the Commission will call upon the banking sector to offer finance packages specifically aimed at SME's and Energy Service Companies to adopt energy efficiency savings, including those identified in energy audits. Access to Community financing, such as Green Investment Funds, co-financed by the Competitiveness and Innovation Framework Programme (2007-2013), will be made available for promoting eco-innovations.

- **Spurring energy efficiency in the new Member States** – the Commission will work on facilitating the leveraging of private financing at national and local levels for energy efficiency via Structural and Cohesion funds. It will further encourage the use of the Structural and Cohesion funds dedicated to improving energy efficiency, including in the multi-family and social housing sectors in the new Member States.
- **A coherent use of taxation** – the Commission will prepare as from 2007 a Green Paper on indirect taxation and review the Energy Tax Directive to facilitate a more targeted and coherent use of energy taxation. In addition, the Commission will consider in 2007 the costs and benefits of using tax credits and other tax breaks as incentives for enterprise to promote the increased production of certified energy-efficient appliances and equipment on the one hand, and for consumers on the other. The Commission calls upon the Council to adopt as soon as possible its proposal to relate vehicle taxation to CO<sub>2</sub> performance, and invites Member States to already introduce these modifications into the tax reforms they may be considering.
- **Raising energy efficiency awareness** – priority areas, aside from improved labelling, will include education and training plans and programmes for energy managers in industry and utilities. Included will also be teaching aids for primary, secondary and vocational educational curricula. These will be developed as of 2007 through Community programmes, by recommendations to Member States and through co-operation with Member States and Community educational agencies.
- **Energy efficiency in built-up areas** – the Commission will in 2007 bring together the Mayors of Europe's largest and most pioneering cities to set up a permanent network aimed at exchanging and applying best practices and improving energy efficiency in the urban environment, in particular in the transport sector.
- **Foster energy efficiency worldwide** – in order to promote energy efficiency worldwide, the Commission will take the initiative in 2007 to reach a framework agreement with key external trading partner countries and international organisations. The agreement will focus on improving energy efficiency in end-use sectors and in energy transformation and will use a large number of policies and measures.

Nonetheless, before any of these objectives can be achieved, political will and engagement at national, regional and local level are necessary. The European Council, European Parliament, as well as national and regional policy makers will need to renew their full commitment and establish a clear and unambiguous mandate to facilitate the implementation of the Action Plan by endorsing it and agreeing on the proposals set forth.

## What has the EU done so far?

In June 2005 the European Commission presented its Green Paper on Energy Efficiency, wherein it analysed the current energy situation and drew up a series of actions to be discussed, commented on and supplemented by all stakeholders. This was followed by the Green Paper on a European Strategy for Sustainable, Competitive and Secure Energy adopted in March this year, which underlined the need for a strengthened energy policy for Europe to meet EU objectives. Finally, in reaction to this, the 2006 Spring Council called for an ambitious and realistic Action Plan on Energy Efficiency, listing specific actions, considering it a matter of urgency. The resulting policies and measures were based on input from stakeholders who participated in the consultation process on the Energy Efficiency Green Paper. In addition to this, the European Parliament provided over 100 recommendations on the subject, almost all of which supported the measures finally selected for the Action Plan.

However, the European Commission has been promoting various aspects of energy efficiency through a number of programmes and directives for a much longer period already.

### European legislation on energy savings

- Directive on energy performance of buildings
- Directive on the promotion of cogeneration
- Directive for the taxation of energy products & electricity
- Directives on energy efficiency requirements for boilers, refrigerators and ballasts for fluorescent lighting
- Directives for labelling of electric ovens, air-conditioners and refrigerators and other appliances
- Regulation on Energy Star labelling for office equipment
- Directive on Eco-design requirements for energy using products
- Directive on energy end-use efficiency and energy services

- Since 2001, the European Commission's DG TREN has been running the ManageEnergy programme, which aims at supporting the work of actors working on energy efficiency and renewable energies at the local and regional level. Its main tools include training workshops and online events, as well as providing additional information on case studies, best practice, European legislation and programmes and educational material aimed at different sectors of the 7-16 year old public.

<http://www.managenergy.net/>

"The Intelligent Energy – Europe" (IEE) Programme converts EU policy for smart energy use and more renewables into action on the ground, addressing today's energy challenges and promoting business opportunities and new technologies. IEE currently supports more than 200 European projects, the setting up of 35 local/regional energy agencies and 40 one-off European events. The programme's

focus is on energy efficiency, notably in buildings and industry; new and renewable energy sources; energy aspects of transport; cooperation with developing countries. Beginning in 2007, the Intelligent Energy Europe (IEE) Programme will be integrated into the Competitiveness and Innovation Programme.

[http://ec.europa.eu/energy/intelligent/index\\_en.html](http://ec.europa.eu/energy/intelligent/index_en.html)

- The Sustainable Energy Europe Campaign 2008 is another European Commission initiative in the framework of the "Intelligent Energy – Europe" (2003-2006) programme, which will contribute to achieve the European Union's energy policy targets within the fields of energy efficiency, renewable energy sources, clean transport and alternative fuels.

<http://www.sustenergy.quentes.be>

The Energy Performance of Buildings Directive (EPBD) Buildings Platform is an information service for helping the implementation of the Buildings' Directive. The aim of the latter is to reduce the energy use of buildings without compromising the indoor environment and services. The implementation of the Energy Performance of Buildings Directive provides Europe with tools for this. The Platform was launched by the European Commission in the frame of the "Intelligent Energy – Europe", 2003-2006 programme and places particular focus on 5 main themes: calculation procedures, minimum energy performance requirements, certification of buildings, inspection of boilers and air-conditioning systems and requirements for experts and inspectors.

<http://www.buildingsplatform.org/cms/>

This service is useful for practitioners and consultants, experts in energy agencies, interest groups and national policy makers in the 27 Member States. Its objective is to support the full and continued implementation of the EPBD by:

- Setting up mechanisms for the transfer of information between all stakeholders;
- Helping to implement the Directive by specific actions and coordinating the activities of the various stakeholders
- Providing input and tools to support the Commission and the Member States in the follow-up and evaluation of the impact of the Directive.

To accelerate the implementation of the Energy Performance of Buildings Directive, the European Commission is supporting the transformation process inter alia by financing the EPBD Concerted Action. The non-public EPBD Concerted Action is established for the exchange of experience concerning the implementation of the EPBD in the Member States on working staff level. It is of key importance in practice and registers an increasing number of participants (at present: about 100) from all Member States since last it was started in 2005.

<http://www.epbd-ca.org/>



### Saving 20% by 2020 means:

**Consumer:** yearly savings of between €200 and €1000 for an average household. For example, few basic insulation measures can easily save €200 on the annual energy bill, while a further €40 can be saved by replacing an old fridge with a more recent and more economical (high-efficiency) model.

**Environment:** saving 780 Mtn CO<sub>2</sub> by 2020, which is twice the EU2012 Kyoto target.

**Industry:** strengthening the competitiveness of our economy and facilitating the creation of as many as one million jobs in Europe.

## What can YOU do to save energy?

Energy efficiency begins at home. The suggestions below might represent small steps towards reaching the ultimate goal of 20% energy savings, but every gesture can make a difference – not least to our energy bills.

- 1. By turning the thermostat down by one degree, you can save as much as 5-10% of your energy bill.**
2. Do not leave your television, video, DVD player and music system on stand-by mode. They will continue to consume electricity.
- 3. Thermostatic Radiator Valves allow you to control the temperature of each room and thereby reduce your energy bills.**
4. Regularly defrosting your fridge/freezer will help keep it running efficiently.
- 5. Remember not to leave your fridge/freezer doors open for too long. For every minute they are open, it takes a further three minutes to reach again the set temperature.**
6. Cover saucepans and turn the heat down when cooking. Using a lid saves half the energy.
- 7. Wait until you have a full load before using your dishwasher.**
8. Turn off the lights when you are not in the room.
- 9. Use low energy light bulbs wherever you can as they use less than a quarter of the electricity of standard light bulbs and last up to 15 times longer.**
10. Insulating your loft, wall cavities as well as your hot water tank will mean saving both energy and money.