European Parliamentarians' call for an

Energy Intelligent Europe

Making Europe the most energy efficient society in the world by 2020

A strategic choice

Decision-makers face today a huge challenge: combining economic growth, employment, environmental protection and energy security. The latter has become more and more important as our oil-dependent economies suffer heavily from soaring oil prices. All studies converge towards the fact that the trend is bound to be upwards and could soon reach unacceptable levels, leading to brutal changes in the economic and social sphere.

Energy efficiency is the only solution available today at a large scale for a short-term implementation, as it offers a better allocation of scarce resources in energy.

Moreover, a lower demand will reduce the environmental threats from energy and transport generation (greenhouse gases emissions, particles emissions, etc.). A more energy efficient economy is also a more competitive economy because of lower energy costs and less dependency from energy price hikes. This leads to replacing payments for energy imports to investments in technology and EU citizens' quality of life. Hence, implementing energy efficiency measures would lead to the expansion of the economic sectors involved leading to the creation of hundreds of thousands of new jobs e.g. in the building industry.

The potential is huge in all sectors - Energy Efficiency is a bridge between jobs, competitiveness, environment and energy security of supply!

As for instance the heating/cooling in buildings; electricity use (e.g. lightning, appliances, and electric engines); transport (urban systems, car consumption); industry processes and power production (co- and trigeneration). (See Annex with a list of concrete examples).

A genuine and integrated policy for energy efficiency would allow Europe to build on its knowledge and become a leading market not only for energy efficiency technology but also for energy efficiency concepts (expertise in the field of urban planning and architecture) and for energy efficiency financial engineering. Promoting sustainable lifestyles should also be part of the path to an energy intelligent society.

Action at all levels needed

Energy efficiency will only happen if all levels of stakeholders act in a coordinated way, from European authorities to national regional and local ones. The civil society has also a role to play (NGOs, trade and business associations, academia, etc.). And citizens can do their share as well. We are all concerned by the threats of energy price hikes and environmental deterioration. Everyone can do something at his level - the showcase example for subsidiarity. What is lacking today are the necessary legal, financial, economic and informational levels. Here is where the special responsibility of legislators comes in.

The EP Intelligent Energy Initiative

Members of the European Parliament, representing a wide range of EU member states and a wide range of political sensibilities, felt there was a need for bringing this debate of utmost importance for our energy future, to the broadest audience**.**

Recent setbacks in EU referenda also show that the time where EU politics were only dealt behind closed doors by EU civil servants and some national counterparts are over.

Therefore, Parliamentarians concerned with the current energy debate decided to launch an initiative, contributing on a free basis to the debate launched by the European Commission with the publication of its Green paper on energy efficiency.

The aim is to bring the energy efficiency issue into the public place so that every citizen, organisation and authority within the EU is made aware and can get involved in the debate.

The European Parliamentarians' initiative breaks up into five structural areas: targets and monitoring, consistent legislation, capacity building, financial dimension and international dimension.

1. Clear and mandatory target for energy efficiency: at least 23% by 2020

There is a clear potential for energy savings within the European Union. The technical potential is estimated by the European Commission at 40%, and the cost-effective savings potential is estimated by a SAVE study[1] at 20% at current energy prices.

With the expected rise of energy prices up to 30% of savings would still be cost effective. And this without any reduction of comfort or standards of living.

In terms of primary consumption, this would correspond to over 380 million tonnes of oil equivalent (M tep) saved in 2020, compared with the forecast consumption in a "business as usual" scenario. But this is not the only added value: such a target would also set up a clear framework for the expansion of the energy efficiency business, characterised by highly labour-intensive investments such as extending the offer of public transport or the renovation of the existing building stock.

The EU should set itself an ambitious but realistic target. Following the logic endorsed by a large majority of MEPs during a recent vote on the energy end-use efficiency and services directive - mandatory, progressively raising 3 years targets would bring the EU to an increase in energy efficiency of 23% for 2020.

Equally important is the monitoring of progress. Measures implemented have to be regularly monitored in order to come to a “result-driven culture” when implementing instruments to deliver energy efficiency.

[1] *Completing the market for least-cost energy services*, Wuppertal Institute for climate, environment & energy, Gemany, 2000

Regular review under the so-called Lisbon guidelines of the European Spring Council could be the appropriate place to bring attention to policy leaders on the performance of Europe as a whole as well as of each member state.

Setting mandatory targets at EU and at national and local level is one of the most important tasks legislators in the EU should become engaged in. Without clear commitments, there will be a lot of talk, and only little action.

BOX 1: How can we measure energy savings?

The 'bottom-up' method consists in cumulative real, measured energy savings from identified projects and programmes. The 'top-down' method consists in monitoring and analysing energy consumption indicators in relation to general economic developments in individual sectors. The evolution of energy consumption/economic growth can thus be monitored, improvements and problems observed and policies redirected accordingly. The two instruments, 'bottom-up' and 'top-down', are therefore independent and complementary: the first records energy savings achieved, the second monitors and explains consumption behaviour by sector and overall.

2. Consistent legislation key for achieving concrete results

Legislation is essential to set the general framework for a society geared towards energy efficiency. A thorough discussion must take place on the optimal level to set up legislation.

For example, in order to enhance the efficiency of the transport sector, a combination of local legislation (e.g. London city toll or local urban planning codes), national regulatory framework (e.g. tax incentives to buy efficient cars) and EU legislation (e.g. consumption and pollution standards for cars) has to be set up. In the case of boosting sales by the 450 million EU consumers, of best performing appliances and consumer electronics, public authorities must show leadership in green public procurement, retailers have to get national incentives and the EU has to implement a comprehensive EU labelling and eco-design legislation.

It is of utmost importance that legislators from all levels (local, regional, national, European) have a better understanding of the most relevant level for each specific legislation.

3. Capacity building crucial to close the innovation gap at all levels

Innovation in the field of energy efficiency is often not a problem of existing technology but of spreading information about the existence of this technology to those who decide on energy efficiency investments.

The nature of organisations and the number of actors dealing with demand side management are different form the supply side: they are much more numerous, they are decentralised and more autonomous, they take initiatives and they strongly rely on networking**.**

One of the major challenges to make energy efficiency work is the one of human resources devoted to it. This key factor is today dramatically weak.

Furthermore, there is no clear framework for instruments, mechanisms, definition and information regarding energy efficiency and measures. All this leads to the fragmentation of decision-making and the poor awareness on energy efficiency reality and potentials.

Energy agencies have a key role to play, be it at European, national, regional or local level. Moreover, enhancing networks of those are crucial for exchanging experience and best practice. The whole system is to be completed, integrated and coordinated to achieve optimal use of human and financial resources for implementing a genuine energy efficiency policy. Targeted and highly professional awareness raising campaigns should complement the offer to touch also the broader public.

Linking these catalysts for energy efficiency all over Europe is essential to get a consistent and dynamic approach throughout the EU. The *'Intelligent Energy for Europe'* programme and its *'Intelligent Energy Executive Agency'* could play a major role in establishing this consistency.

Legislators have to sit together and identify the best level for which capacity building action is needed in order to close the innovation chain.

4. Access to finance essential to transform 'potential' into 'market'

Without any doubt the major obstacle for energy efficiency is the lack of access to financing. There is a market of 5-10 billion euros, but almost impossible to access. It hangs from many facts: lack of visibility of savings potentials, limited access to capital for SMEs, lack of knowledge of cost-effectiveness, returns and risks of investment, un-adapted periods of return on investment, small size of projects, and lack of commitment from public authorities.

Thus a genuine energy efficiency policy should address all these particular problems faced by energy efficiency projects. Those have, by nature, different risk/return profiles, transaction sizes, investment horizons and exit strategies than classical energy supply projects. Energy Saving Companies (ESCOs) are a possible bridge for the investors' dilemma and are certainly part of the solution.

At national level, various examples show that all obstacles can be solved, provided that public authorities set up the right measures: conversion grants for switching heating mode in Denmark, soft loans for CO2 reduction in buildings in Germany, assistance to promoters of projects for tendering processes in Berlin, participation on the capital of low-carbon companies in UK, loan risk coverage mechanism in France, investment fund in Central and Eastern European countries. Successful experience exists and has to be spread out within Europe.

At European level, a European Energy Efficiency Fund would have the potential to attract capital from utilities, corporations and institutions and public agencies to invest in profitable projects and generate carbon credits.

The European Investment Bank (EIB) and its risk-capital subsidiary, the European Investment Fund (EIF) should set up this specific instrument dedicated to energy efficiency and renewable energy development.

Again, only an optimal combination of local, national and EU financial instruments could make a real difference. Legislators should take a close look at it.

5. Europe leading the world in energy efficiency

Energy efficiency must also be seen as a way to secure sustainable energy relations with Europe's main suppliers. It is also a way to disseminate Europe's know how in the field to other parts of the world, hence preparing markets for leading EU industries and service providers.

This wider approach impinges on world - and European - economy at several levels:

- Developing countries' societies are most vulnerable to increases in energy prices. They loose almost all of their foreign currency reserves in case if oil price rises. Energy efficiency must therefore be a cornerstone of EU development policies helping less developed countries through institution building, capacity building (e.g. to create a whole economic sector made of SMEs) and helping them to invest.

- Energy exporting countries such as Russia or Algeria, Mediterranean countries and Balkans states have a direct interest in saving energy, in order to provide more energy to export (for net exporters) or less energy to import from the region (for net importers). If Russian economy is not turning more energy efficient, it will need most of its energy resources for internal use.

- Emerging economies like China, India and Brazil will be on one hand huge consumers of resources (thus driving up prices) but also important producers of all kind of mass manufacturing goods. Establishing a strategic partnership with these countries on energy efficiency is essential for shaping future world energy demand path, and can also trigger large markets for European industries.

The huge potential of energy savings in those countries will provide a non-negligible source for carbon credits for project promoters.

In order to have a better understanding of the international dimension EU legislators should also engage in a more intense contact with their counterparts from other regions of the world and seal partnerships.

The path to achieve consensus: a European-wide debate

The debate launched by the European Commission on the Green Paper on Energy Efficiency is a golden opportunity not to be missed. It should be reiterated - and implemented in reality - that demand-side should be at the core of EU energy policy, as suggested by the European Commission's Green Paper on security of energy supply (2000).

We call for a European-wide debate involving all citizens, because this theme directly influences their daily life.

The debate should be articulated around a three-step approach:

- How far is everyone (citizen or organisation) concerned by energy efficiency?
- What is its interest in enhancing energy efficiency?
- What actions may be taken in this regard?

If such a debate aims at achieving results, there should be no taboos left aside such as the future place of the cars in cities, air traffic growth, etc.

The initiators of the MEP platform for Energy Efficiency plan the following activities:

- in September, Members of the European Parliamentarian will publish a Blueprint as their contribution to the debate that will now be launched by the European Commission with its Green Paper on Energy Efficiency;

- A cross-party coalition of committed MEPs from all EU member states will meet national Parliaments on the issue of energy efficiency in order to expand the debate at national level;

- Those MEPs involved will strongly support stakeholders' meetings within the framework of the European debate on energy efficiency.

As the debate will go on during the UK Presidency of the European Union (July-December 2005) and the debate is perfectly in line with the climate change priority of UK within the G8 framework, we expect the UK Presidency to hold a Special European Council meeting on energy efficiency involving governments but also legislators.

This would clearly establish a strong link between European decision-makers and the citizens on a theme impinging on everyone's daily life. This would also show that European decision-makers care about the down-to-earth implications of energy policy, at a time of oil price hikes.

The following Presidency of the European Union (January-June 2006) will be held by Austria. This should be an opportunity to launch a worldwide initiative on energy efficiency, building a bridge between the European efforts towards energy efficiency and other parts of the world.

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ANNEX: Energy efficiency examples

Home appliances

Almost **one third** of all electricity in OECD countries is consumed by home appliances such as washing machines, refrigerators, dishwashers and ovens. History shows enormous progress in energy efficiency for those devices. For instance, refrigerators in the US became almost 5% a year more efficient from 1973 to 1985. Huge further potential still exists. The potential increase of energy efficiency through improved compressors, insulation, fan motors and heat-exchangers is estimated at 40%.

A recent International Energy Agency Study (*Cool Appliances, 2003*) shows the potential for energy efficiency in appliances is very large and cost-effective. While reducing the average appliances' electricity consumption projected for 2010 by 25% and for 2030 by 33%, the profit per ton of CO2 emissions avoided is expected to be 169 Euros.
At EU-25 level, the potential for electricity savings on electric appliances consumption in buildings (for residential and tertiary sectors) for year 2020 is estimated at 400 TWh by the European Commission, Green paper on energy efficiency.

Residential lighting

Fluocompact bulbs divide consumption by a factor five for equivalent lightning. 80% of the potential of savings would be reached by only changing 30% of bulbs (the most consuming ones) in each housing. If extended to the whole EU, this would reduce power consumption by 50 TWh, equivalent to the production of 20 power stations of 500 MW each.

Residential cold appliances

High-performing cooling has well progressed in the recent years. In France, it was shown that replacing old fridges and freezers by Class A ones divided power consumption by a factor of 3.2 in average. In some houses, this factor even reached 6.5.
Replacing in the whole EU all refrigerators and freezers by Class A appliances would save 75 TWh, equivalent to 30 power stations of 500 MW each.

New buildings

Space-heating and hot water production are responsible for approximately two-thirds of the energy demand in dwellings. A good example of development within this sector is the residential sector in the Netherlands. Using a progressive standard for newly built dwellings from 1996, energy efficiency improvement accelerated to more than 5% a year. Moreover, these developments have led to efficient housing initiatives in the market, reaching far beyond legal requirements. If the present Dutch proposal to further strengthen the standard in 2006 is accepted, this will imply a yearly improvement for new houses of 5.4% over a ten-year period.

Bioclimatic architecture

In a mild climate (Western Europe), let's compare three houses of same surface (100 m2) and same volume (250 m3) at the same location. The first one is a classical one, at actual

standards, without any concept in orientation and windows. The second one looks the same, but has a better orientation and dispatching of windows, a heating reduced to 15°C at night instead of 19°C, and shutters adequately used in winter as well as in summertime. The third house integrates different components of bioclimatic architecture: greenhouse integrated to the house, massive wall in the greenhouse, strong ventilation at night in summertime, external isolating shutters, enhanced isolation of walls. House #2, without any added cost at investment, will save one third of needs for cooling and heating. House # will save thermal needs by two thirds winter and summer, without any equipment for cooling, even in very sunny regions.

Industrial compressed air

Industrial compressed air represents in the EU more than 80 TWh by year of power consumption. According to a SAVE study, the third of it could be saved , with a return on investment less than 36 months by 15 year. The study was jointly prepared by French ADEME, Fraunhofer ISI (Germany), DoE (University of L'Aquila, Italy) et ECE (the Netherlands) in the framework of SAVE programme.

Cogeneration and trigeneration

Trigeneration implies the simultaneous production of mechanical power (electricity), heat and cooling from a single fuel. Conventional thermoelectric stations convert only 1/3 of the fuel energy in electricity. The rest is losses in the form of heat. One method for more rational use in the production of electricity is the Cogeneration of Heat (or Refrigeration) and Power, where more than 4/5 of the fuels energy are converted in usable energy, resulting in both financial and environmental benefits. In the tertiary sector of Southern countries, the need for heating is limited to few winter months. There is, however, significant need for cooling (air conditioning) during the summer months. Heat by a cogeneration plant in this case is used to produce cooling, via absorption cycles. This "expanded" cogeneration process is known as trigeneration or combined heat, cooling and power production (CHCP).

Transport

A first axis of action is to focus on urban systems. The example of Friburg (Germany) finds its roots thirty years ago. When rebuilt after the war, the town was designed according to the medieval map. Then this was threatened by the expansion of cars. Walking areas were decided in town centre, which spreads over 600m today. All policies have been integrated, concerning: circulation of bikes, local public transport, walking moves, car traffic and "30 areas" (<30 km/h). This has led to a great complementarity between transport modes. Mortality has diminished because of low speed in central areas. Pollution and noise have dropped. Further measures will enhance the principle of intermodality.

A second axis is the improvement of vehicles, using hybrid vehicles. Those have a classical engine and also an electric engine, complementary to each other. See Insight from Honda and Prius from Toyota. Electrical engine is used for urban and low speed trips, or to boost the other engine when more power is needed. When braking or stopping, the momentum of the car charges the batteries. Hence they do not need to be plugged-in as purely electric car.A third axis is the development of rail for passengers and freight.