

European Commission Action Plan on Energy Efficiency – From the public consultation to the real outcomes for stakeholders

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Abstract

The Action Plan on Energy Efficiency from the European Commission integrates into a single document a comprehensive list of actions to improve energy efficiency in the variety of energy-using sectors in Europe and beyond. Its immediate objective is to present an operational framework of policies and measures capable of realising the savings potential estimated at more than 20% of annual primary energy consumption in Europe.

It was based on a long and extensive Public Consultation and a consistent Impact Assessment. The scope of actions is very much in line with the one proposed in the Green Paper on Energy Efficiency, so what was the real influence of stakeholders' opinion on the public consultation and the impact assessment? Up to what extent did they influence the content of the Action Plan and the actions proposed? This paper comprises an analysis of these issues.

The European Union is not realising its savings potential because it is leaving aside many cost effective energy efficiency measures. How can this Action Plan change this problem? Europe needs to pursue energy efficiency vigorously, but are the Action Plan and the signals of announcing possible changes in current directives enough? These questions are also addressed in this paper.

In fact, it is a political document but energy efficiency by its own nature consists of different practical actions carried out by many different actors. Who will be responsible or what will be the means to bring the actions proposed to the ground and make them a success?

Introduction

High oil prices, the events in the natural gas market that occurred at the end of 2005 and beginning of 2006, the fact that the "Stern Review" [1] refers to energy efficiency as having a big potential for CO2 emissions reduction and thus preventing climate change, the fact that the G8 Group is strongly committed [2] to energy efficiency as a mean to enhance global energy security, and many other events are raising the fact that energy efficiency can make a strong contribution improving both environmental sustainability and competitiveness while alleviating pressures on the energy system and the economy. This is why energy efficiency is at the heart of current energy and environmental policies, both at MS and EU level. Taking up energy efficiency seriously can put the EU firmly on the road to its goal of a sustainable energy future.

The consumption of energy in Europe is already substantial and the demand growth of transport and electricity represent a worrying trend. This is aggravated by new phenomena like the increasing use of air conditioning, increasing use of vehicles with high fuel consumption, standby mode for electrical equipment (representing almost 7% of total electricity consumption). If nothing is done to reverse this tendency, energy consumption could still increase by almost 10% over the next 15 years.

The price of energy (mainly electricity and car fuels) is certainly expensive for a part of the population but it still does not reflect the genuine cost of energy to our society. Even if this situation is changing by including externalities in pricing mechanisms, the market alone will not enable us to make the necessary energy savings.

This problematic is being addressed in the EU for some years now. Back in 2000, the Commission came forward with a prioritised Community Action Plan for Energy Efficiency [3] in view of giving a strong contribution for meeting the Kyoto target. By that time the energy efficiency potential was estimated at more than 18% of energy consumption, equivalent to over 160Mtoe or 1900 TWh [3]. The aim of this action plan was to integrate the energy efficiency dimension in to Community non energy policies and programmes as well as proposing a set of new policies and measures to improve energy efficiency. The main mean of implementation was the SAVE programme and the main measures targeted transport, equipment, industry, buildings and CHP.

Furthermore, the Commission is running since 2001 the ManagEnergy Programme addressing the local and regional levels on energy efficiency and renewable energies. A number of EU-wide directives are also in force regarding energy performance of buildings, cogeneration, energy end-use efficiency and energy services, labelling and efficiency requirements, ecodesign of energy using products (EuPs), and taxation of EuPs and electricity. All these initiatives are still complemented by the intense activity of the Intelligent Energy – Europe Programme (which includes the above-mentioned SAVE programme) that acts on transferring EU energy efficiency and renewable energy policies into concrete actions and projects on the ground.

In June 2005 the European Commission published the “Green Paper on Energy Efficiency, Doing More with Less” [4] opening a wide range debate (public consultation) posing 25 questions to all interested parties. This green paper raised again the issue of energy efficiency pointing out a savings potential of, at least, 20% of its present energy consumption by 2020, equivalent to €60 billion a year. This would contribute to reduce Europe’s dependence on oil and gas imports, boost competitiveness and jobs and help the EU meet its Kyoto commitments.

This public consultation received the interest and the opinions of the stakeholders that where analysed and expressed in a report [5] presented to the Energy Council in June 2006.

At the same time, an Impact Assessment was being carried out in order to evaluate the potential and cost-effectiveness of different measures proposed by stakeholders, the European Parliament and the Commission services.

All this information was examined and compiled in the Action Plan for Energy Efficiency [6] with the objective of realising the 20% energy savings potential by 2020. The document gives us a wide range of measures to improve energy efficiency and is accompanied by working documents that give further evidence on the cost effectiveness and timeframe of the measures proposed.

In the past, MS have welcomed action plans and done very little, or their achievements where not given enough evidence. This action plan emerges embedded in an atmosphere where energy efficiency is on the agenda, and at the top of it. This must be the time for energy efficiency.

Green Paper on Energy Efficiency

The Green Paper on Energy Efficiency [4] placed energy savings at the centre of EU’s ambition to boost competitiveness and jobs (the Lisbon Strategy), environmental protection and security of supply. The aim of the Green Paper was to act as a catalyst encouraging energy efficiency initiatives at all levels of the European society. It placed on view a large number of ideas for discussion to stimulate debate and effective input from the stakeholders. This would prompt new ideas, lead to concrete proposals accompanied of examples and suggestions on the cost, benefits and ways of implementation.

The Green Paper identifies some bottlenecks (lack of incentives, information, available financing mechanisms) that prevent the implementation of cost effective measures. Then it seeks to identify a number of options on how these bottlenecks can be overcome. Some of these options are as follows:

- Annual efficiency action plans at national level, complemented by benchmarking and peer review process in a continuous learning cycle. These action plans would deliver bigger benefits as they are closer to the national circumstances.
- Better information to stakeholders
- Promoting best practices and technology
- Improving taxation mechanisms, ensuring that the polluter pays
- Better targeted state aid
- Use energy efficiency as a criteria in public procurement
- Use new and improved financing instruments giving incentives, not aids
- Improve regulation regarding buildings and domestic appliances
- Use the CARS 21 initiative to speed up the development of new fuel efficient vehicles
- Improved regulation for network and energy supply initiatives, as well as electricity generation
- Increase the use of white certificates
- Initiatives to increase energy efficiency in industry
- Organizing and optimising traffic management
- Charging of infrastructure to induce behavioural changes
- Develop a market for clean vehicles
- Improve tyre performance to reduce fuel consumption
- Economic instruments to improve energy efficiency in the aviation sector
- Integrating energy efficiency in international cooperation

The Green Paper says that giving the necessary incentives and tools to the stakeholders is the key to achieve energy savings with a high cost-benefit ratio. The initiatives launched by the EU are to be made known and implemented at all levels and therefore, a strong mobilization of all actors is needed in order to develop behaviours that integrate energy efficiency in everyday life.

Public Consultation

The public consultation opened by the Green Paper received 244 contributions from stakeholders and was also complemented by information gathered in a number of events and a report from the European Parliament [7] proposing around 100 measures to improve energy efficiency.

DG Energy and Transport (TREN) carried out an exhaustive and objective analysis of the public consultation contributions and issued a staff working document, “Report on the analysis of the public Consultation of the Green Paper on Energy Efficiency” [5], detailing the methodology and summarizing the main findings. The methodology used was designed to deliver a precise quantitative and qualitative evaluation of the opinions of the stakeholders. Sets of keywords were built per question and were object of statistical treatment. This way, as a whole or by groups, all the ideas were identified - with heavy weight or marginal.

The debate did not deliver any breakthrough ideas but on the other hand stated a big support for energy efficiency and the clear potential of some of the measures proposed in the green paper. The main findings were:

- there is a huge lack of information regarding both technology and policies that should be tackled using innovative approaches
- there is a lack of expertise – more education and training are needed
- stakeholders call for more action and less policy. Current legislation is not effectively implemented and is not delivering its full potential
- local and regional energy agencies should be further developed
- need to make better use of public and EU financing such as structural funds
- need to validate and disseminate best practices more effectively using adequate benchmarks
- need to further analyze costs and benefits of white certificates
- Public Authorities need to play a bigger role setting the example
- Energy efficiency needs to be introduced as a criteria for procurement
- Energy Services Companies (ESCOs) need to be further encouraged

- Stronger emphasis should be given SMEs as they have a huge savings potential
- Current labeling systems need to be expanded to other products
- The Directive for Energy Performance of Buildings should be reviewed and applied to smaller buildings but in due time, giving the chance to fully implement the current directive
- Need for minimum efficiency requirements for vehicles and vehicle taxation associated with their efficiency
- Need for better land use planning, infrastructure pricing and intelligent traffic management systems
- Support for the improvement of the energy production sector
- Combined heat and power should be further encouraged if effectively connected to district heating grids
- Support for reduced VAT for energy efficient products and using tax incentives for energy efficiency investments
- The EU could and should do more to spread energy efficient practices at global level

The opinions of the stakeholders go pretty much in line with the ideas launched in the Green Paper. Basically, the need for implementing current legislation received a very high support together with the need for more education and training – building capacity. Energy efficiency in the building sector was recognised as a top priority. The transport sector was attributed a special importance because of its high oil dependence and its growing significance on pollutant emissions. Industry and the energy transformation and distribution sectors were pointed out as having a big potential for CO₂ emission reductions. Labelling and CHP have a lot more significance than in the Green Paper and some issues like aviation have few significance.

Impact Assessment

The impact assessment [8] provides information regarding the quantification of the effects of the actions proposed. A simple analysis identified 54 actions that were screened, pin pointing 18 options with higher potential. These 18 measures were subject to a deeper study using a multi criteria analysis. The main indicators chosen were the savings in Mtoe, the cost effectiveness, the competitiveness impact, administrative costs and the behavioural change. The possible overlapping of different measures was also weighted and some implementation barriers were identified. These refer mainly to lack of enforcement capabilities and more vigorous action, lack of internalization of external costs, volatility of energy prices, the higher income and rebound effects, the lack of knowledge on saving options or financing possibilities, lack of incentives or divergence of interests (e.g. owner-tenant), import dependence , among others.

The different policy options were also discussed. The following scenarios were considered: no additional action, use of voluntary agreements, public sector leadership, market based instruments, regulatory measures at EU/national/regional and local level, financing options through to information, training and education activities.

The message from the impact assessment is clear: one single policy option cannot be chosen as the best to achieve the objectives proposed for all the measures. A combination of several policy options is needed as they complement each other and boost the effectiveness of nearly every measure. A balanced mix of policy options was then the guiding principle and the solution articulated in the action plan.

Based on this extensive evaluation, the impact assessment identifies energy savings potentials for all the 18 measures analysed. Extending the Energy Performance in Buildings Directive to include smaller buildings and the extension of the white certificate schemes have the highest potential for energy savings (80 and 60 Mtoe), followed by the setting up of maximum CO₂ emission standards for cars (28 Mtoe), making fuel more expensive to reduce fuel use (22 Mtoe), setting up incentives for increase energy conversion efficiency (20 Mtoe), include running costs in labelling (18 Mtoe) and promote penetration of distributed generation (16 Mtoe), among others. The weighting of the measures was also done by scoring them according to their significance on the indicators used. The results do not always match the energy saving potentials. Considering the main indicators chosen, training and education for energy efficiency, promotion of CHP and promotion of small energy efficiency loans also have high significance/potential.

The total monetary savings estimated for the EU economy are around €50 billion annually by 2012, increasing to €100 billion by 2020. If oil prices are of 70\$ per barrel, this amount could go to €150 billion per year by 2020.

The 18 measures considered would mean a saving of 353 Mtoe, but taking into account the overlapping this potential is reduced to around 262 Mtoe, representing approximately a 14% potential energy saving by the year 2020. If we consider all the 54 actions that were primarily screened, the savings generated could reach 700 Mtoe.

The Impact Assessment gives evidence that the 20% savings potential is realistic and achievable if a full implementation of a reasonable range of measures is pursued.

Action Plan

The Action Plan on Energy Efficiency [6] calls for cuts in energy consumption of 20% by 2020, creating annual cost savings of €100 billion and a reduction in annual CO₂ emissions of 780 million tonnes.

It puts forward a selection of cost effective energy efficiency improvement initiatives to be put in place and implement 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.

Realizing this potential requires a large scale shift in our behaviour towards energy use. Informed decision by stakeholders is a fundamental issue to promote energy efficiency, it is not only about legislation.

The Commission sets a framework of policies and measures for implementation in the coming six years to ensure that the full potential of energy efficiency is tapped. This framework will have to be reviewed and complemented to achieve the 20% savings by 2020. This framework consists on 10 priority actions to implement immediately and around 75 other measures for the coming 6 years, focusing in six main topics:

- dynamic energy performance requirements for products, buildings and services
- improving energy transformation
- improving transport efficiency
- Financing energy efficiency, economic incentives and energy pricing
- Behavioural changes towards energy
- International partnerships

The 10 priority actions are:

- New energy performance standards for different product groups such as boilers, copiers, TVs, lighting
- new energy standards for buildings and promoting low-energy buildings ("passive houses")
- making power generation and distribution more efficient
- possible legislation to limit CO₂ emissions from cars to 120g/km by 2012
- facilitate bank financing for investments in energy efficiency by SMEs and energy service companies
- boosting efficiency in new member states;
- coherent use of taxation with the preparation of a Green Paper on indirect taxation in 2007;
- awareness and education campaigns;
- improving energy efficiency in urban areas through a "Covenant of Mayors" (to be created in 2007) which will exchange best practices, and;
- International agreements to foster energy efficiency worldwide.

Most of the actions proposed, have direct relations and imply some possible changes to existing directives for Labelling, Eco-design, Energy Performance in Buildings, Energy End-Use Efficiency and Energy Services, Energy Taxation and others.

Furthermore, the commission services provide a number of working papers and documents (memos, analysis of the AP [9], etc) that give further understanding on the timeframe and implementation details of the Action Plan. These papers give specific advice addressing several levels of action and particularly citizens: "What can you do to save energy" [10]. This is a signal that the Commission has a clear

perception that all the links must work together so that measures are implemented effectively and deliver profitable results.

The main vehicles to implement the actions proposed in this action plan are the national action plans required by the Energy Services Directive and that are due by the 30th June 2007.

Furthermore, the Commission calls for a strong political will and engagement at all levels (national, regional, and local) so that an effective implementation of the Action Plan is carried out. Not only policy makers but all actors are called for action that shall address all the society.

Analysis

Energy experts call it “the most realistic plan yet”. The action plan on energy efficiency is consistent and realistic. The authors have a clear perception that all the links must work to achieve the foreseen results and that the memento currently involving energy efficiency is a great chance for the success of this action plan.

The Action Plan is, however, particularly weak on identifying the means to implement its actions. The number of actions and measures is comprehensive and objective (one could always identify specific sectors that were not considered but there is a need to keep the focus not to dilute the effort), but few is said about the channels that will take these actions to the ground. And this is the fundamental issue. In the public consultation, a number of opinions asked for local “energy advisors”. This may be just one example, but it works if well implemented. Some local and regional energy agencies have achieved excellent results, reaching industry, SMEs and citizens. Their efforts and learning must be replicated at European level. Energy agencies and other bodies that act close to the citizens/consumers must be given more significance in an accurate definition of roles.

The Green Paper identified the main problems and barriers that needed to be overcome and still deliver a good ground for discussion. The impact assessment gave further evidence and some different highlights – the green paper was too focused on transport policy and the impact assessment emphasises the buildings sector. This is transferred, and well, in the Action Plan and strengthened with the inclusion of the passive house concept even if only on the medium/long-term.

Furthermore, the impact assessment has a tendency to move from the idea of agreements and voluntary measures to stronger commitments and policies for full cost-reflective energy pricing to stimulate conservation. Here, we observe the first signs of wavering political will, giving up on some more ground breaking ideas. The European Council, European Parliament as well as national and regional policy makers must have the political will and courage to call for, agree and endorse strong measures to facilitate the implementation of the Action plan.

In the public debate on the green paper on energy efficiency, stakeholders deliver a clear message that there is a need to have more action and less talking. The Action Plan recognizes that fact and points the implementation and enforcement of current legislation as a priority to improve energy efficiency in Europe. There is also a call for less new legislation and for the improvement and better understanding of current one.

Stakeholders also call for less bureaucracy, both at national and EU level. From the Action Plan and its accompanying documents, it is evident that several directives will need amendments and new reporting procedures are going to be put in place (e.g. for the national energy efficiency action plans). These measures, even if they may deliver good results by fine tuning the policies and evaluating the developments, they endanger having policy makers spending most of their time making reports and amendments to directives that may never be implemented (in 2005-2006 the Commission withdrew 78 policy initiatives [11])

Furthermore, the Commission intends to carry individual impact assessments for all measures proposed in the Action Plan. This may reveal a good mechanism to prioritise (or drop) some measures, but may also represent an exaggerated human resource and economic expense not efficient by itself.

Taxation policies are a sensitive issue and are also given good consideration in the public consultation. These are also addressed smoothly in the priority actions in the Action Plan and the initiatives proposed are ambitious but there is concern about these becoming a reality. Here, once again, strong political will and courage are necessary.

There is a common belief that energy efficiency has the quickest, largest and cheapest potential to contribute to Europe's energy policy objectives, but it is also the most complex one. This is due to the fact that energy efficiency is not a product but an embedded characteristic of energy systems and there is no golden key or no recipe to tap this potential. It is mostly about improving performance and not about implementing more policies.

Patrick Lambert, Director of the Intelligent Energy Executive Agency of the European Commission, said himself to the EU Observer: "Twenty per cent is realistic if there is political will in the European Parliament and Member States. It's a target we've had in our minds for a while because it is achievable. It does not require too much investment."

Is this Action Plan enough?

The Action Plan is there and is ambitious, but there is a common feeling that local, regional, national powers and even the EU, do not have the qualified staff to implement its full potential, according to concerns expressed by the European Parliament and a number of stakeholders in the public consultation on the Green Paper on Energy Efficiency. A preliminary, yet conservative estimate [8] for the Commission services alone would be a requirement of additional staff of 20 officials if a success is to be made of the Action Plan. MS have the same difficulty and even if energy agencies are there to attenuate this fact, still a lot of education and training is to be done.

Energy performance monitoring is an essential tool to assess where to act and evaluate if the actions were successful. The Action Plan is missing the fact that consistent data regarding the end-use energy habits and the potentials for energy efficiency improvements is still missing for a number of sectors. This is particularly sensitive regarding small and medium enterprises (SMEs) that do not have in place energy management systems. Even in other sectors, the long term improvements are not being guided by energy performance monitoring. Consumers need to understand where the savings are, prioritise them and how to act in order to tap them.

One could argue that yearly savings of €100 billion represent a huge sum and should motivate users to pursue energy efficiency actions. However, this number brings a mere €200 to €1000 savings [10] per year per household. Being realistic, this amount does not represent a strong incentive for the effort necessary to achieve it, especially when behavioural change is needed. This is one of the main difficulties to overcome. Consumers, the real responsible, need to understand that energy efficiency gains will be achieved with the sum of thousands of small achievements. Their contribution makes a difference.

Half of the energy consumed is controlled directly by individuals, but few individuals have the means or the knowledge to monitor their energy use and even less on how to improve it. New measures could focus on demanding better engineering solutions allowing consumers a better management of their energy use. "Automating" energy efficiency, embedding it as an inherent characteristic of our energy system, is one of the ways to follow, allowing consumers to make savings with minor effort.

Innovative approaches are needed rather than further technological invention. More effort should be devoted to designing an effective framework that encourages entrepreneurial solutions, rather than focusing too closely on specific measures and technologies. Technology had ground breaking developments (and will continue to have) but most of the potential of these was not delivered. This needs to be understood and explored. Having highly developed technologic instruments is not enough. Few industrials, energy agencies were able to take advantage of these instruments, so their approach needs to be valued, replicated and encouraged.

Furthermore, the promotion and adoption of energy efficiency may involve communication more than technology. Messages tailored for individual companies, stakeholders or decision makers are sometimes preferable.

Energy efficiency programs deliver better results when they are embedded into sectoral policies. Energy efficiency should therefore be included in all policies at national level, from environment to urban planning, passing by social issues or regional development. This would raise the awareness towards energy efficiency, delivering bigger and better results.

The EU should also place energy efficiency at the centre of its external relations. The achievements and developments made in Europe can be capitalized abroad as well. On the other hand, the security of energy supply not only depends on the conditions inside the EU but also the stability of other areas of the world.

The Action Plan as a very clear objective of reducing the energy expenditure in order to improve competitiveness and environmental performance in Europe. However, there are two dangers associated. One is the rebound effect. The money saved may well be used for investing in new equipments or appliances thus increasing energy consumption instead of reducing it. The other is the fact that the European economy is only going to benefit from energy efficiency if the gains are reinvested in Europe and in a sustainable way. This is a very complex situation that should be addressed by the commission services in order not to have the energy efficiency gains annulated.

MS governments should make energy efficiency a higher priority and allocate adequate resources to institutions and programmes if they wish to reach their ambitious objectives. This effort will pay for itself because of the large benefits of energy efficiency. It would also set the example and act as a multiplier effect in the regional and local powers.

Taking full advantage of mechanisms currently in place must be a priority. Several institutions (IEEA, ManagEnergy, Energy Agencies and other programs) are close to the problems and are able to, most times, deliver customised solutions for specific problems. Furthermore, projects implemented throughout the EU should be considered looking at their “post-mortum” as well. Currently, a large number of interesting projects are not continued after their financing period just because that scenario was not foreseen or because of lack of funds.

After a “difficult birth”, the much awaited Action Plan came out with a good setting to improve energy efficiency in Europe, but by itself does not promise to achieve the 20% reductions target by 2020. The effort must be continued and reinforced with more actions after this Action Plan’s period. In addition, current trends point to an increase in energy consumption and to an aggravation of the economic conditions if nothing is done in the immediate future. This would mean that in the future, the necessary actions would have to start from an even lower ground than now.

Conclusions

Economic and political aspects are likely to ensure that energy efficiency remains on top of the agenda for the coming years. Considerable progresses are being done but most of the potential is still untapped.

Energy prices (particularly of fossil fuels) will continue growing due to increasing demand. The IEA estimates that oil price will be around 55\$ per barrel [13], but the European Commission has estimated that the oil price will reach 110\$ per barrel [12] by 2050 together with a world energy consumption of 22 Gtoe per year (currently is around 10 Gtoe). The energy supplying countries will remain areas of instability. Energy efficiency is now, more than ever, an opportunity.

This Action Plan is not the solution but is definitely part of it. Further developments are necessary together with full commitment from policy makers and all other actors. The process leading to this Action Plan has shown that energy efficiency is on the move and in crescendo, and that the Commission counts on the stakeholders to have a better feel of the situation on the ground, better shaping policies and ensuring their effective implementation. Moreover, there is a reasonable agreement and consistency between the ideas of the Commission and the stakeholders. As said before, there will be always untapped areas, but prioritising is fundamental to achieve results. These will promote higher understanding and boost more action.

The consensus gathered around the Action Plan was even emphasised and valued with its integration in the European Commission’s General Energy Package as one of its central pillars, seizing a big potential towards a sustainable energy future for the EU.

The move that is needed is to further involve stakeholders (at all levels). There is a need to understand that energy efficiency and real savings do not only come out of big and powerful policies but also from the engagement of all actors.

“If not us, who? If not now, when?”, Robert F. Kennedy

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