European Commission
Public Consultation on the Evaluation and Revision of the Action Plan for Energy Efficiency (COM(2006) 545)

Reply supplied by AREA - July 2009
(AREA replies are in blue)

1. General Questions

In the context of this evaluation and the preparation of the envisaged new Energy Efficiency Action Plan, the Commission is open to re-evaluate its present legislation and policy portfolio.

1.1. The Action Plan for Energy Efficiency of 2006 identified 6 key areas and proposed 10 priority actions (out of a total of 85 actions and measures). Which of the actions and measures of the 2006 EEAP should be continued/redefined/discontinued, and why?

AREA agrees with the priority actions. We feel that there are significant energy savings achievable through the raising of energy efficiency awareness at all levels but especially in SME's and "small" refrigeration applications. Energy savings could be achieved without major investment in capital equipment and plant refurbishment but with education and implementation of good energy saving practice.

AREA supports:

- *The appliance and equipment labelling and minimum energy performance standards*
- *The adoption of building performance requirements and very low energy buildings priority actions and will refer to them later in this document as part of our comments on EPBD.*
- *A 20% reduction in EU greenhouse gas emissions, as compared with 1990 levels.*
- *An increase in the use of renewable energy, to 20% of all energy consumed.*
- *A 20% increase in energy efficiency.*
- *Energy performance requirements for products, buildings and services.*
- *Adoption of building performance requirements and very low energy buildings.*
- *Raising energy efficiency awareness.*
- *Coherent use of taxation.*

Energy efficiency and renewable energy: measures to make electrical appliance and buildings more energy efficient; development of national action plans with specific targets for use of renewable energy in power generation and heating can only lead to a reduction in EU emissions.

1.2 Which new challenges have emerged since 2006 and should be addressed in the new Action Plan for Energy Efficiency?

On the 17th December 2008, the European Parliament's Plenary Session adopted with an overwhelming majority of 635 votes the compromise agreement on the new EU Directive for the Promotion of Renewable Energy Sources. For the first time under EU legislation, heat pumps are now recognised as a renewable energy technology, alongside wind turbines and solar panels.

Some Air Source Heat Pumps have recently been approved under the Microgeneration Certification Scheme (MCS). As a certified product under MCS, this will qualify for grant aid and householders can apply for a grant under the Low Carbon Building Programme (Phase 1).

F-gas can be part of the solution to climate change if the regulations are policed correctly.

EC 842/2006 F – Gas Regulation

All operators of Refrigeration and air-conditioning (RAC) systems that use refrigerants containing FG gases must comply with obligations in the EC F-gas Regulation. Many organisations use RAC systems with HFC refrigerants, which are F – Gases. If such refrigerants are used, the company must ensure that it meets the requirements in EC Regulation 842/2006 and the GB Fluorinated Gases Regulations 2008.

4.2 Regular leakage checking
Article 3.2 Applicable from 4th July 2007 to RAC systems containing 3 Kg or more.

Equipment containing 3 Kg or more of F – Gas refrigerant must be checked for leakage by certified personnel on a regular basis. This threshold rises to 6Kg for hermetically sealed systems that are labelled.

"Checked for leakage" means that the equipment or system is examined for leakage using direct or indirect measuring methods, focusing on those parts of the equipment or system most likely to leak. The frequency of testing depends on the refrigerant charge and system type. Individual plants must be re-checked within one month after a leak has been repaired to ensure that the repair has been effective.

4.6 Use of appropriately trained personnel: Personnel and Company Certification
Article 5.1 applicable from 4th July 2007 to all sizes of RAC system.

Personnel carrying our leak checking, gas recovery or other refrigerant handling activities such as plant installation and maintenance must have an appropriate refrigerant handling qualification and hold a suitable certificate.

Companies carrying out installation and maintenance works also need certification.

These regulations need to be enforced as they are not being implemented in member states. Many have used their watered down version of the 842/2006 and misses critical items needed to allow the F-Gas regulations to make an impact.

Historically many stationary refrigerant and air conditioning (SRAC) systems gave rise to significant F-gas and ODS emissions through leakage during normal use and venting during maintenance or at end of life. The F-gas Regulations are intended to improve containment, so preventing emissions, by ensuring that leakage rates are reduced and that all refrigerant is recovered during maintenance and at end of plant life. Better plant design, construction and maintenance will enable emission rates to fall significantly.

It's a legal requirement for all businesses that install, maintain or service stationary refrigerant air conditioning or heat pump (RAC) equipment that contains, or are designed to contain, F-gas refrigerants to hold a Company Certificate issued by an appointed Company Certification Body. It has been an offence to carryout out these activities without a Company Certificate after the July 4th 2009.

The F-gas 842/2006 Regulation (is based on a proven system of F-Gas regulation (STEK) that was introduced in the Netherlands in 1994 and has had very good results) requires a mandatory register of Businesses engaged in the static SRAC sector; this included any and all refrigeration, air conditioning and heat pump equipment and activities including installation, commissioning, service, maintenance, decommissioning and disassembly.
Given the chance the F-gas regulations can work, we already have data available, a previous report from ENVIROS advises "STEK has been highly successful in the Netherlands in both minimising average leakage rates and in virtually eliminating 'rogue traders' reducing equipment leakage rate to 4.5% p.a. compared to a European average of 25% with the greatest leakages now in the industrial sector.

STEKs own research indicates that 92% of the installations had no emissions at all in the reference year 1999.The potential emission reductions achievable in 2012 through the implementation of STEK on a country by country basis is in tonnes CO_2 equivalent. It shows that emissions are expected to be 35.1 M tonnes CO_2 equivalent. Across the EU in 2012 and that a reduction of around 15 M tonnes CO_2 equivalent is achievable.
The cost effectiveness of implementing a STEK like system on a community basis has been estimated as 18.32 Euros per Tonne of CO_2 Equivalent.
The STEK approach was a public-private co-operation between the Dutch government and industry.
We must ensure that member states comply with the F-gas regulations as this will have a positive effect on climate change.

In AREA our primary interest is with refrigeration, air-conditioning and process chilling. Since 2006 we have seen an increased interest in the promotion of non-HFC refrigerants and natural refrigerants. We agree with the development and promotion of new alternative refrigerants but we would caution that in many applications the energy usage with the "new" refrigerant should be compared to existing HFC energy usage.

With the further implementation of F-Gas legislation across the member states there is continued opportunity to communicate energy efficient behaviour and practices. A well maintained and leak free refrigeration system uses less energy.

- *A 20% loss in F-Gas can result in an 60% loss in efficiency.*

The F-Gas 842/2006 regulation needs to be enforced as it is not being implemented in member states.

The Directive on Energy End-Use Efficiency and Energy Services (2006/32EC) *adopted earlier this year provides a good framework for strengthening EU-wide co-operation on energy efficiency in areas where a clear potential for energy saving exists. Full collaboration from Member States authorities in implementing the Directive is required,*

Improving energy transformation
The energy transformation sector uses around one third of all primary energy.

Improving energy transformation
Develop minimum efficiency requirements for new electricity.

- *In the Community there is a need for improved energy end-use efficiency, managed demand for energy and promotion of the production of renewable energy.*

- *Improved energy end-use efficiency will make it possible to exploit potential cost-effective energy savings in an economically efficient way.*

ANNEX III

Indicative list of examples of eligible energy efficiency improvement measures

Examples of eligible energy efficiency improvements measures:

(a) heating and cooling (e.g. heat pumps, new efficient boilers, installation/efficient update of district heating/cooling systems);

(b) hot water (e.g. installation of new devices, direct and efficient use in space heating, washing machines);

(f) domestic generation of renewable energy sources, whereby the amount of purchased energy is reduced (e.g. solar thermal applications, domestic hot water, solar-assisted space heating and cooling);

1.2: It may, at this time, be prudent to refer to this and other documents as follows:

2.2: Directive 2002/91/EC Energy Performance Buildings

(Article 7)
Energy performance certificate

Member States shall ensure that, when buildings are constructed, sold or rented out, an energy performance certificate is made available to the owner or by the owner to the prospective buyer or tenant, as the case might be. The validity of the certificate shall not exceed 10 years.

Article 9 of the Energy Performance of Buildings Directive (EPBD) requires regular inspection of all air conditioning systems./ The EPB Regulations define an 'Air-conditioning system' as:
A combination of all the components required to provide a form of air treatment in which the temperature is controlled or can be lowered, and includes systems which combine such air treatment with the control of ventilation, humidity and air cleanliness.

A first inspection of any new system over 12kWr installed since January 2008 is required within the next five years, with all other systems over 12kWr must be inspected by January 2011.
Subsequent inspections must then be commissioned every five years.

The primary aim of the inspection is to give building owners and operators information about the performance of their buildings and plant, and to identify opportunities to save energy and cut operating costs.

From January 2009, it was made illegal to sell or let any commercial property without a current valid air-conditioning inspection report covering all installed, in-scope equipment, including centralised systems, individual splits, multi-splits and heat pumps. By January 2009, all systems over 250kWr must have been inspected.

This Directive is not being implemented, encouraged or enforced which would enable the reduction in energy use. The end user could save money in the running costs but they need to be encouraged by enforcement of this Directive, maybe by turning it into a regulation, as this would ensure compliance and in turn reduce energy costs and usage.

Action Plan for Energy Efficiency: Realising the Potential com (2006)545

Europe continues to waste at least 20% of its energy due to inefficiency. The EU can and must lead the way in reducing energy inefficiency, using available policy tools at all different levels of government and society.

Realising this potential will require a significant shift in our approach to energy consumption. Europe will need to more than double the rate of improvement in energy efficiency compared to recent years.

Energy efficiency in the building sector was identified as a top priority.

In industry, a significant potential to reduce energy demand and CO_2 emissions was highlighted.

The largest cost effective savings potential lies in the residential (households) and commercial buildings sector (tertiary sector), where the full potential is now estimated to be around 27% and 30% of energy use.

2. Specific questions

2.1: The existing Energy Performance of Buildings Directive (2002/91/EC) and its recast, as well as other relevant legal acts, go a long way for introducing ambitious but realizable energy performance requirements for buildings and increase consumers' awareness. However, much more can be done. What other measures at EU level need to be undertaken ?

Although this Directive is in force, there are no bodies actively enforcing its implementation, many AREA members have their engineers trained to carry out the inspections but there is little call for these skills from the customer as the EPBD is not being encouraged or enforced at any level apart from the public sector. Our members have to pay a fee to enable their engineers to carry out the Energy Performance Certificates or Air-conditioning inspections, in some countries this is an annual fee and it is disappointing to them that they have invested money and time in to something that does not seem to be being implemented/enforced.

2.2: Sustainable transport and energy consumption of cars is currently addressed in the Greening transport package (COM(2008)433), the Regulation on Emission performance standards for new passenger cars (COM(2007)0856), the proposed Directive on labelling of tyres (COM(2008)0779), the proposal on greening car taxation (COM(2005)261) and the 'Green Cars' initiative. The Commission is also working on a proposal on light commercial vehicles and a revision of CO2/cars labelling. Do you consider that additional measures at EU level need to be undertaken ?

No opinion

2.3: The Eco-Design (2005/32/EC) and Energy Labelling (92/75/EEC) framework Directives are significant steps as regard to product policy. A number of implementing measures have been already or are soon to be adopted and the ongoing amendments of the two Directives provide for their more ambitious and wider application. Do you consider that additional measures can be taken forward in order to increase the impact of these instruments ?

No

2.4: Lack of access to appropriate financing is an important bottleneck for making a real step forward in our ambitions on energy saving. Innovative financing instruments are now being developed by institutions such as EIB, EBRD, national promotional banks and private banks in particular in association with the Covenant of Majors initiative. Demonstration projects of the application of energy efficient technologies in a competitive manner, e.g. 'smart cities', could also be considered. Do you think other financing measures at EU level are needed ?

No

2.5: Well targeted fiscal incentives could be a driver for energy efficiency investments and innovation. The EU has already taken measures to make it easy for Member States to allow for more advantageous VAT rates for some labour-intensive services, such as renovation and repairing of private dwellings. Do you consider that additional measures at EU level need to be undertaken to shape consumer choices ? In your view, what these measures should be ?

Energy efficient systems are not always the cheapest, quite often the pay back of efficient systems can be 10 years or more, the customer/consumer needs to be steered towards efficiency or targets set will not be achieved. Unfortunately but inevitably, cost normally drives the choice and not the environment.

2.6: Education and training on energy efficiency are vital ingredients of a successful energy efficiency policy. These were already mentioned above regarding buildings but the challenge is much broader. Do you consider that measures/actions at EU level to catalyze training at school and university level should be undertaken ? In your view, what should these measures be as regards different target groups ?

Training is a vital ingredient to allowing the consumer a choice. The schools and universities of today are the future of industry tomorrow and must not be neglected. The F Gas regulation 842/2006, is aimed to contain gases with a high Global Warming Potential (GWP). There needs to be joined up thinking in these two areas.

We also need to liberalize the training through Europe and give more space to private schools. Schools should not be only public driven but private schools are more dynamic in these technologies and these subjects. The world of energy moves faster than public school can follow, whilst private schools are faster on changes. On the other side make public schools more dynamic, by reacting to changes in alternatives more quickly.

2.7: Awareness of final consumers on energy savings possibilities and their benefits is still low. This in particular concerns domestic consumers and SMEs. Some actions to target different groups are already undertaken at national and EU level. For example, the Sustainable Energy Europe Campaign is focusing on grouping social stakeholders and market actors to undertake joint actions. Do you think that further communication action at EU level is needed ? Which would be the content of such a communication strategy as regards each of the target groups concerned ?

In 2002, between 30 - 40% of energy was used in the residential and tertiary sector these areas cannot be over looked. Within our industry we have systems that can heat buildings and their water up to 400% more efficient that gas or oil, these markets are new and need to be looked with a long term view of achieving the best efficiency available to the market. Consumer choice is now in the construction industries domain and this must be influenced at a European level.

2.8: Furthermore, small and medium size companies (SMEs) are the backbone of EU's economy as they make up more that 99% of all firms and employ 67% of the EU's workforce but may need more supprt for implementing energy saving measures. Do you consider that specific measures to target SMEs are necessary ? In your view, what should these measures be ?

Yes, this market is too large not to support implementing energy savings. The measures should include training and ensuring that energy efficient systems can be cost effective alongside systems that are not as efficient.

2.9: Public sector should lead by providing best practice examples. Positive progresses have been made under the voluntary Green public procurement policy and the proposals for mandatory procurement of energy efficient products in the framework of the recast of the Energy Labelling Directive. The leading role of public authorities has also been emphasized under the recast of Energy Performance of Buildings Directive proposal. Do you consider that further actions at EU level should be undertaken ?

No

2.10 The role of energy utilities can be substantial but at present they have insufficiently developed a market for energy efficiency servies. Ways to create adequate framework conditions for this market to take-up in liberalized electricity and natural gas markets should be sought, possibly in cooperation with the Regulators. Do you consider that actions at EU level should be undertaken ? In your view what should these measures be ?

Yes, too much energy is lost and these energy utilities and too much CO_2 is released into the atmosphere from power stations. 30% of energy is lost in transmission.

2.11: Energy efficiency offers significant market opportunities. Do you consider that specific measures at EU level should be adopted to provide incentives for companies to enter these markets, in particular as regards SMEs ? In your view, what should these measures be ?

AREA believe that this could be a very big opportunity for Europe as leading in the world in regulations on Energy Efficiencies and to also and make their countries leaders in the world. I think the regulations were made mostly for making a new market to grow (after of course primarily for environment issues). AREA think at the moment we haven't seen in Europe this market and the relative companies to grow as much (probably except in Germany). For those reasons I think incentives for SMEs should follow to keep this advantage Europe has in respect of the rest of the world.
The incentives should be linked to the energy saving (or energy production) of the technology.
No direct subsidies on the capital cost to the companies but on the technology the company will produce or service.
In Italy, Germany, Spain for examples has been of great success the photovoltaic incentives on energy produced.
More energy you produce with your PV plant more you earn (around 45 cent with every kWh produced).
In the same way are working the incentives on the energy efficiency of fridge, air-conditioner…. more the technology make you save energy more it should be the incentive… ***those incentives should be more and they should be agreed at European Level.***

2.12: In relation to the above question do you consider that there is a need for the introduction of a EU-wide White Certificate scheme ?

No opinion

2.13: The Directive on energy end-use efficiency and energy services (2006/32/EC) already provides for national indicative energy savings targets which differ from the ones for renewables and for greenhouse gas emissions. Giving the increasing priority for ensuring that investment in energy consumption reduction are made in all Member States, do you consider that a move towards binding targets is needed ? How should these binding targets be set up and at what level ?

Directives are not followed in most member states, regulations are followed more, although in our experience, the regulations are not always followed in the full sprit of the regulation but this is more so than a directive. Purchase cost is quite often a decision maker in the choice of equipment and not the energy that is used. This decision making needs to be guided to ensure energy is a decision maker if it is reasonably practical and cost effective (to a degree) to choose the low energy option.

2.14: Measurement and verification of energy savings is essential aspect for monitoring the results of any measures introduced at national and EU level. Although some targeted measures are being implemented, do you consider that more systematic and harmonized approach at EU level is needed ? In your view what should these measures be ?

Measures according to the F Gas regulation 842/2006, should be widened to energy efficiency in harmony with the EPBD.

2.15: Energy efficiency should become a vector of international cooperation and a subject of international financing programmes, in particular regarding EU neighbouring countries. Do you agree with statement ?

Yes

3.1. Other remarks

AREA (www.area-eur.be) is the European organisation of air-conditioning, refrigeration and heat pump contractors. Established in 1988, AREA voices the interests of 24 national members from 19 European countries, representing more than 9,000 companies across Europe (mainly small to medium sized enterprises), employing some 125,000 people and with an annual turnover approaching €20 billion.

There are numerous applications where alternatives to fluorinated refrigerants are both desirable from a political perspective and preferable from an environmental perspective. There are also, however, certain applications where it is beneficial to retain the use of fluorinated gases.

- *For heat pump air-conditioners with cooling duties of 4kW, HFC's prove between 33% and 67% more energy efficient than alternatives.*
- *For heat pump air-conditioners with cooling duties of 14kW, HFC's prove between 34% and 58% more energy efficient than alternatives. The renewable energy technology of heat pumps falls into the same range of heat exchanger compressor duty.*

Manufacturers of split air-conditioners have been producing reverse cycle heat pumps for many years based on a normal packaged air-conditioning system and incorporating a reverse cycle valve that simply reverses the flow of refrigerant to turn a cooling system into a heating one. The efficiencies and COPs have been well documented.

The EU must seek to monitor member states for proper and meaningful implementation of the directives. Paper laws and polices are useless. Appropriate sanctions must be made against member states who fail to implement and enforce the regulations.
An EU wide system of recognition needs to be established based on a Carbon and total life cycle – "cradle to grave" of each technology. An energy hierarchy based on these factors should be established as part of this process. We seem to have a situation of many projects getting inappropriately specified technologies, not always based on application of lowest carbon and energy demand.
The technologies application must reflect an energy and carbon footprint that is realistic, taking account of the embodied energy.
Energy hierarchy should be –firstly: reduce and conserve the use of energy; second: Controls and integration of the systems to minimise energy demand and use; finally after the first two have been implemented, fit renewable / lower carbon using technologies, based appropriate uses based on true energy floes and not the arbitrary basis of a "tick box" planning compliance, as is so often the case at present.