# EPEE Policy Statements

## About EPEE

The European Partnership for Energy and the Environment (EPEE) is a broad-based grouping of responsible companies, national associations and European associations active in the European air-conditioning, heat pump and refrigeration industry. It was formed in September 2000 to contribute to the development of effective European policies to limit greenhouse gas emissions from the use of refrigerants.

This site gives an overview of EPEE as an organisation, the principles that it stands for and the actions and advocacy in which it is involved.

## EPEE Mission

The central mission of EPEE is to contribute to the development of effective European policies to limit greenhouse gas emissions from the use of refrigerants. We believe that hydrofluorocarbons (HFCs), hydrocarbons, ammonia water and CO2 are all viable refrigerants depending on application and operational requirements. In all cases emission of greenhouse gases from refrigerant use must be minimised and full Life Cycle Climate Performance (LCCP) must be wisely considered when selection is made of what refrigerant best meets the unique application needs. In addition, each refrigerant property must be taken into account in the selection process.

In our view, any policy aimed at the reduction of the emission of greenhouse gases from the use of refrigerants should be based on the desire to minimise their Global Warming Impact. This approach takes into account the direct emissions of the refrigerant as well as the indirect emissions of CO2 from the electricity used. Energy related emissions from the use of refrigerants in refrigeration systems represent on average 85 % of the total. Measures to promote energy efficiency should therefore be a prime focus of climate change policies.

Enviros has calculated that direct emissions from HFCs will represent 1,6 % of all greenhouse gas emissions in 2010 under a business as usual scenario in the EU. While this clearly pales in comparison to CO2 emissions from other sources (mainly power generation and transport), EPEE is committed to reducing direct emissions from HFCs by promoting policies that support the continued use of HFCs in a responsible fashion.

## Responsible use of Refrigerants

EPEE member companies have already taken initiatives to further limit direct emissions from HFCs, but recognise that new policy measures, developed on a European Union level and implemented evenly in all its Member States, can achieve even more meaningful results.

EPEE participates in the fluorinated gases working group, set up by the European Commission in June 2000 as part of the European Climate Change Programme, in order to develop new policies to limit emissions through their use.



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EPEE has presented detailed proposals to this forum for a EU level Voluntary Agreement or Directive which would establish a framework for the responsible use of all refrigerants. EPEE also provided detailed proposals to reduce indirect emissions from all refrigerants through improved energy efficiency measures.

Under EPEE's proposals, the EU policy in this area would be applied to all refrigerants. In addition to setting direct HFC emission reduction targets safety (toxicity and flammability) concerns associated with the use of certain refrigerants such as ammonia and hydrocarbons have also been developed.

Actual implementation of the instrument chosen would be carried out on a national level, where inspection and certification systems would set up in coordination with the appropriate regulatory authorities. The proposed system would likely include:

- Technical guidelines for tight equipment (to achieve low emission equipment);
- Criteria and mechanisms for a recovery and recycling system;
- Inspection and maintenance requirements;
- Criteria and mechanisms for emission & operational control;
- Guidelines for refrigerants' administration;
- Criteria and mechanisms for Life-time committed monitoring system: operating instructions, and system information; pressure; evacuation and fill certificate; history
- Qualification (i.e. Training and certification) of installers and handling personnel;
- Administration guidelines for refrigeration installation (type of refrigeration and type of refrigerant used);

A system that is based on this concept in the Netherlands achieved significant and rapid results. Emissions from equipment dropped in five years from 30 to 10 % and are still diminishing (3 % for new equipment).

Promoting Energy Efficiency in Air conditioning and Refrigeration

Energy related emissions from the use of refrigerants in refrigeration and air conditioning equipment (including heat pump and reversible air-conditioning systems) represent on average of 85 % of the total. Since a significant proportion of CO2 remains in the atmosphere for more than 500 years, measures to promote energy efficiency should be the prime focus of efforts to reduce greenhouse gas emissions from the use of refrigerants.

The advantage of the use of HFCs in this respect is that their use does not require indirect circuitry or secondary loops with heat exchangers systems (which expends additional energy) to address safety concerns related to the use of ammonia and hydrocarbons such as butane and propane.

The key to improving energy efficiency is effective product design, system certification and performance programmes and testing, as well as servicing and maintenance. More than 100 European manufacturers already participate in thirteen programmes which test product performance through independent third parties, based on well-defined procedures. Most equipment used in air conditioning, heat pump and refrigeration systems is tested under this voluntary system. EPEE envisages that this programme could be expanded and reinforced as part of the responsible use policies it has presented to the European Climate Change Programme.



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The Properties of HFCs and Other Refrigerants

Hydrofluorocarbons (HFCs) were developed as alternatives to the ozone-depleting refrigerants chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which are being phased out internationally under the Montreal Protocol. HFCs are now used as refrigerants for a wide range of applications, including air conditioning, heat pumps (often referred to as reversible air-conditioning), refrigeration, metered dose inhalers, insulation, technical aerosols, solvents and fire extinguishants. A 1998 independent Arthur D. Little report found that HFCs are emerging as the preferred replacement for CFCs and HCFCs because they are safe, energy efficient, cost effective and can be applied to existing product technologies.

In addition, the Technology and Economic Assessment Panel (TEAP) of the Montreal Protocol on Substances that Deplete the Ozone Layer reported in 1999 that HFCs are important to the safe and cost-effective phase-out of CFCs in developing countries, and are essential substitutes for highly important uses of ozone-depleting substances. HFCs are also technically and economically necessary for the phase-out of HCFCs in developed and developing countries.

Alternatives to HFCs are available and are appropriate for some specific applications. However, there is no evidence to show that they will have a lower lifetime impact on the environment and some carry additional hazardous properties. Hydrocarbons (HCs) such as butane and propane are good refrigerants but are highly flammable and explosive. Nevertheless, the costs and energy required for making the use of HCs safe enough do raise the question of viability.

Ammonia is also a good refrigerant, but is highly toxic even in low concentrations and requires highly trained service personnel. Again, safety measures to reduce the risks to acceptable levels increase the system costs and are not applicable to smaller units. Other possible refrigerants such as CO2 and water are being applied in a limited number of applications and could become commercially available in other applications in the medium to long term, subject to technology advances.



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