



EFCTC NEWSLETTER

An update on fluorocarbons and sulfur hexafluoride

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HFC IN MOBILE AIR-CONDITIONING REMAINS AN ENVIRONMENTALLY ATTRACTIVE OPTION



The [Mac Summit 2006](#) meeting [February 2006 - Saalfelden, Austria] indicated that Enhanced HFC-134a [Mobile Air Conditioning](#) Systems (I-MAC) is still an [environmentally attractive option](#).

From several [presentations](#) it appears indeed that

- In warmer climates, the I-MAC R134a system is the most appropriate refrigerant. This is especially relevant for Southern Europe, and in the rapidly growing developing countries markets. The advantage of CO₂ systems compared to enhanced HFC-134a systems is not as obvious as often claimed.
- for small/medium cars, the cost of CO₂ system is highly uncertain, in the range of 150 to 400 €/ t CO₂, without perspective of a decrease. Such a high cost/benefit ratio cannot be sustained – and leads to consider CO₂ systems not to be a mature technology. There remain indeed a lot of unsolved issues that significantly impact on vehicle performance, especially in the case of compact cars.
- On the issue of [CO₂ safety](#)
- measures convincing solutions have not yet materialised, after several years of intense development.
- having two different air conditioning systems (development, production, export, and servicing) appears very worrying to many companies



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- the [timetable of the HFC-134a phase-out in Europe](#) is considered very challenging.

[Official comments](#) are somehow more positive towards CO₂-systems. However, Martin Winterkorn, CEO Audi AG, in an interview by the German magazine "Auto, Motor und Sport" (edition 4/2006) declared:

"With the new CO₂ air conditioning systems we operate at 4 times higher pressures. We need new compressors and incur additional cost of 100 – 150€ per car. In addition the COP in high ambient temperatures is rather worse than with the old R134a systems. Furthermore, CO₂ is prohibited in the US and commanded in Europe. We therefore need to manufacture two air conditioning systems. For economic and technical reasons this is senseless."

US UTILITIES UPGRADE BY REPLACING AGEING CIRCUIT BREAKERS WITH SF₆ BREAKERS

In the aftermath of the series of blackouts experienced by US Utilities, as they are increasingly upgrading to mitigate outage risk by **replacing oil or air blast circuit breakers with sulphur hexafluoride (SF₆) breakers**.

This replacement will represent a significant improvement over the currently installed breakers installed in the utility sector.

Source : <http://www.newswiretoday.com/news/2145/>

APPLIANCE INDUSTRY PREPARING THE END-OF-LIFE RECOVERY OF HYDROCARBONS

After the [EU Environment Commissioner confirmed](#) that Hydrocarbons must be removed from waste fridges and freezers (just like [HCFCs or HFCs](#)), CECED (the household appliance industry in Europe), together with recyclers and electro scrap operators will develop recycling specifications for [end-of-life refrigerators and freezers containing hydrocarbons \(HCs\)](#). This initiative should ensure safety and high quality handling and recycling of equipment containing hydrocarbons, such as isobutane and cyclopentane (in refrigeration circuits or in insulating foam).

Indeed, the recycling of equipment containing [hydrocarbons is not without risk](#). The objective of CECED future specification is to take into account applicable health and safety requirements and to prevent the release of HFCs into the environment during the treatment process (in accordance with applicable environmental law).

Once developed, the new specification will be available for use by all involved in collecting, transporting, storing and treating household HC-containing equipment.



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CHILLERS FOR BUILDING RETROFIT - LOW CHARGE, LEAKPROOF HFC-134A

A "[responsible use](#)" HFC-134a [chiller](#) suitable for new build or retrofit projects has been proposed by a refrigeration equipment manufacturer.

Retrofitting CFC-based chillers, typically ranging from 100kW to 1000kW, can indeed be achieved via different options : alternative refrigerants (but using these fluids in retrofitting situations can be very difficult), "not-in-kind " solutions (in most cases not viable alternatives for the typical sizes of chiller found in building services applications); or finally continue to use R-134a, but to seek to do so in the [most responsible way](#).

Two key principles for such a "responsible use" chiller have been followed:

- eliminate the possibility of leakage, or at least minimising the leakage probability (by reducing the maintenance frequency, the amount of refrigerant which can be lost, etc).
- optimize the chiller efficiency across its expected range of operation.

The project target is to design a maintenance-free compressor with a minimum of joints, no requirement for it to be opened in the field, etc. The limited amount of leak testing required demonstrating its tightness will help complying with the F-gas regulations when implemented.

The high efficiency across a wide range of operating conditions will also help to meet the demands for low [energy consumption in buildings](#).

[Full paper](#) received by courtesy of the [British IOR](#)

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[Joint text approved by the Conciliation Committee](#)

Note: F-Gases Regulation was also published on 17 April.

COMING EVENTS