



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

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### **HFC-134a HAS A BETTER ENERGY EFFICIENCY THAN CO<sub>2</sub> IN AIR-COOLED STATIONARY AIR CONDITIONING**

[HFC-134a](#) is more energy efficient than CO<sub>2</sub> in air-cooled [stationary air conditioning](#) equipment, according to an in-depth German [study](#) of HFC-134a and CO<sub>2</sub> systems (*"Betrachtungen zum Energieverbrauch von luftgekühlten Klimageräten mit dem Kältemittel CO<sub>2</sub> unter praxisnahen Bedingungen"*).

Compared to HFC-134a, all twelve different CO<sub>2</sub> systems studied were found to have a higher energy demand.

Because CO<sub>2</sub> is [intrinsically less energy efficient](#) than HFCs, it is often proposed to incorporate additional technical elements, sometimes quite costly. According to the author improvements, such as defining an optimal high pressure level or using an additional internal heat exchanger, had only a marginal effect, not worth the extra cost involved.

In conclusion, the author praises the EU [F-Gas Regulation](#) with its focus on system tightness and end-of-life recovery and recycling.

*\* Also published in Die Kälte + Klimatechnik Oct. 2007, pp.36-46*

### **AFEAS FLUOROCARBONS PRODUCTION AND SALES PAGES RESHUFFLED AND MODERNIZED**

[AFEAS EMISSIONS AND SALES OF FLUOROCARBONS FOR 2005](#) were recently released.

The corresponding pages have been reshuffled and modernized:

\* The 2005 Production and Sales Data is posted on <http://www.afeas.org/data.php>

\* The 2005 Production and Sales Overview is posted on <http://www.afeas.org/overview.php>

They look now better and run faster, which be helpful for interested visitors.

### **HFC-134a AIR CONDITIONING FOR THE UFFIZI GALLERY IN FLORENCE**

The [Uffizi Gallery](#) in Florence (Italy) is one of the oldest and most prestigious art museums in the world.

Build between 1560 and 1581 to host public offices, it became eventually an art museum to expose paintings and ancient statues, and is open to the public since 1765.



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Having passed the vicissitudes of centuries, it was necessary to carry out an important restructuring of the building, a project called "Progetto Uffizi", in order to triple the exhibition area and to support the constant increase of the number of visitors. The project has been completed with all necessary services for such a complex.

With this expansion the number of visitors, which this year already exceeded the million, will grow in proportion. HFC-based [air-conditioning](#) has therefore an essential role, to keep thermo-hygrometric conditions and air quality around art work, and control the heat, dust and humidity impact of troupes of visitors, continuously fluctuating in number, wandering through the museum.



Three [HFC-134a](#) chillers have been installed, delivering a frigorific power of 3 570 kW to the cooling system, which is fitted with an [ice storage](#), and distributes fresh and filtered air in a manner appropriate to protect the various artworks, from wood altars of the 1300s to oil paintings and tapestries.

[More info](#) (in Italian : Il Progetto dei Nuovi Uffizi - Impianti meccanici)

Source: Equipment Manufacturer

### **US EPA GREENCHILL INITIATIVE TO PROMOTE SUPERMARKETS' ADOPTION OF ADVANCED REFRIGERATION TECHNOLOGIES**



The [US EPA](#) and the supermarket, refrigeration equipment and chemical refrigerant industries have launched the [GreenChill](#) Advanced Refrigeration Partnership, a [voluntary cooperative alliance](#) to promote strategies and practices aiming at reducing the [environmental impact](#) of refrigerants.

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The partners pledge to go above and beyond regulatory requirements by establishing an inventory of current refrigerant emissions and set emissions reduction targets.



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The EPA estimates that widespread adoption of all planned measures could reduce the refrigerant emissions impact by some 4 million tonnes CO<sub>2</sub>-equivalent per year, and save the industry over \$12 million annually in lower maintenance and refrigerants costs.

See also "[HFCs ECO EFFICIENT IN SUPERMARKETS REFRIGERATION](#)", and "[European Advances in Supermarket Refrigeration Leak Reduction](#)".

Unlike Europe, the majority of approximately 34,000 retail food establishments in the US (supermarkets, grocery stores, supercenters, wholesale clubs, etc) still rely on [HCFCs](#).

The substitution of [ozone-depleting refrigerants](#) will be an opportunity to reduce supermarkets environmental impact in terms of ozone depletion and climate impact.

A number of options will be shared, starting from up-to-date system design, reduction in refrigerant charge, improved technology and servicing practices, leakage reduction measures and end-of-life refrigerant management, leading to significant refrigerant emissions reductions and improved energy efficiency.