



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

### ISSUE 38 - September 2006

#### HCFC CONSUMPTION IN DEVELOPING COUNTRIES TO REACH 40,000 ODP-TONNES BY 2016

After a note by the [Ozone Secretariat](#), developing countries [HCFC](#) consumption will increase by around 20,000 ODP-tonnes<sup>(1)</sup> from 2004 until 2016 (the year fixed by the [Montreal Protocol](#) to freeze their level of HCFC consumption), to reach a level of around 40,000 ODP-tonnes by that time.

Such an increase is explained, firstly by the desire of developing countries to implement an early CFC phase-out, and secondly by the continuing economic growth of the largest countries (China, India, etc.). The HCFC consumption is thus likely to grow steadily until 2016, when their yearly consumption will be frozen, while their phase-out should be [achieved by 2040](#).

These quantities must however be compared to the developing countries CFC consumption of 164,000 ODP-tonnes in 1989, expected to be brought to 4,400 ODP-tonnes within the coming years.

The Secretariat has compiled and reviewed the consumption of all ODS for the year 2004, both for developed and developing countries.

For CFCs, developed countries had achieved a CFC reduction of 98 %, from 943,000 ODP-tonnes in 1986 down to 1,700 ODP-tonnes in 2004, allowed under the Protocol as "essential uses", primarily for [medical aerosols](#) (metered-dose inhalers), in the cases when CFC formulations were not yet been replaced with HFCs.

Developing countries have achieved a 62 % reduction of CFC use by 2004, while the implementation of the Multilateral Fund approved projects will allow a future reduction down to 97 %.

(1) ODP-tonnes are metric tonnes of Ozone Depleting Substances pondered by their [ODP](#) (Ozone Depletion Potential)

Source : [http://ozone.unep.org/Meeting\\_Documents/oewg/26oewg/OEWG-26-2E.pdf](http://ozone.unep.org/Meeting_Documents/oewg/26oewg/OEWG-26-2E.pdf)

#### ACHIEVEMENTS FOR ENHANCED HFC-134a SYSTEMS IN MAC: DECREASED EMISSIONS, REDUCED FUEL CONSUMPTION

The [US EPA](#) has praised [I-MAC](#) achievements to improve system efficiency and reduce HFC-134a emissions in [Mobile Air Conditioning](#).



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I-MAC aims at [cost-effective reductions](#) in greenhouse gas emissions, by reducing direct system refrigerant leakage by 50%; improving system efficiency by 30%; reducing system loads by 30%; and reducing service refrigerant losses by 50%.

Enhanced HFC-134a systems are confirmed to remain competitive with any alternative and [responsible use programs](#) can preserve their viability in the marketplace, as shown by present achievements:

- Standard (SAE J-2727) to certify low-leakage mobile air conditioning systems has been developed. The [EU Commission agreed](#) later on to use standard J-2727 in the frame of its [MAC Directive 2006/40](#).
- Technologies to improve MAC efficiency by up to 50 percent, i.e. 20 percent more than the initial goal have been identified.
- New technician certification program has been developed to improve technicians' skills and refrigerant recovery rates.
- Standard (SAE J-2788) on [Refrigerant recovery and recycling](#) equipment has been updated to improve the refrigerant recovery during maintenance or dismantling.
- Cooperative research projects have been started in Australia, India, and Mexico.

These achievements were confirmed at the Phoenix (Arizona, USA) SAE Workshop in June 2006, where I-MAC Chairman confirmed I-MAC is on track to meet its research goals by the end of 2006:

- Solid test data have been gathered and test procedures established, in an area where data and evaluation procedures were both very spotty.
- New vehicle leak performance is better than expected and significantly below the limit of 40 to 60 fixed by the future [EU Directive \(article 5 § 3\)](#).
- Servicing MAC and refrigerant recycling are critical for refrigerant containment, and are being addressed to achieve real world emission reductions.

Source : <http://www.epa.gov/cppd/mac/>

### **THE LOUVRE, PART OF PARIS DISTRICT COOLING WITH HFC-134a : ONE OF THE LARGEST CIRCUITS IN THE WORLD**

A new cooling delivery station to the Louvre Museum in Paris has attracted the attention to the Paris cooling water network, the first in Europe and one of the largest in the World, with a total length of 52 km and a cold water storage of 12 000 m<sup>3</sup>.

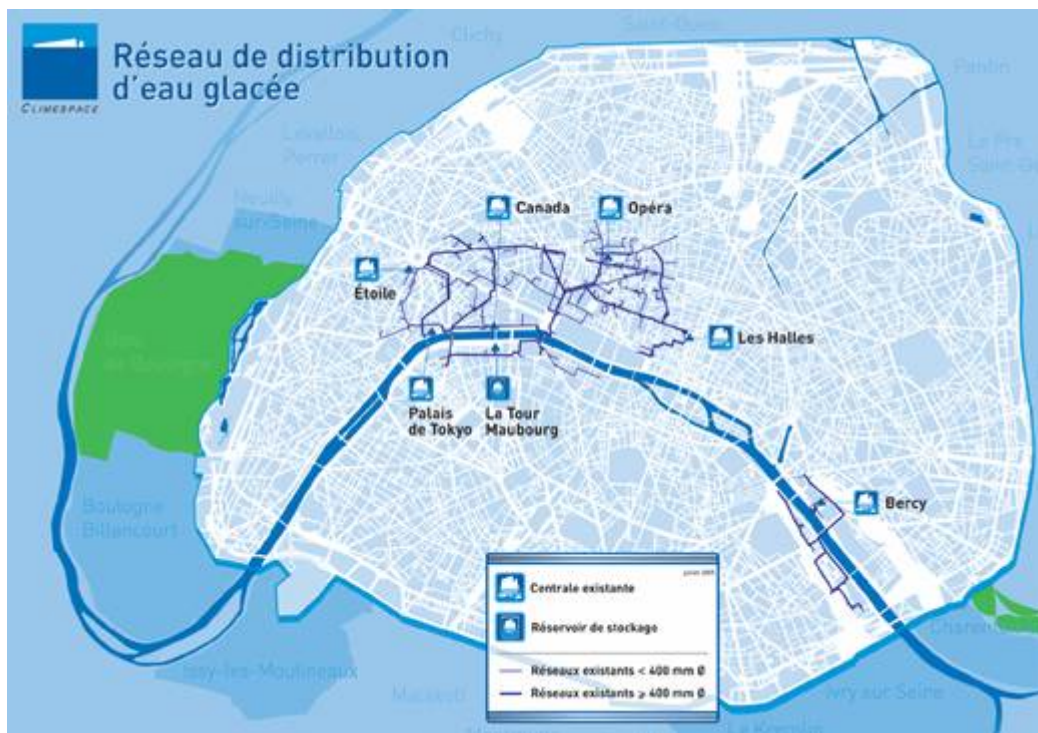


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The [production of cold](#), based on HFC-134a, has a total capacity of 164 MW cooling. Cold water is sent to five decentralized delivery stations at the temperature of 4C and returned at around 14C.

District cooling provides the cooling needs for the air conditioning of hundreds of buildings (offices, hotels, stores) and for the cooling of computers rooms, cold rooms, etc.



Source : [http://www.climespace.fr/nos\\_metiers/la\\_production\\_de\\_froid.html](http://www.climespace.fr/nos_metiers/la_production_de_froid.html)

Other [News on District Cooling](#)

### **VIRTUALLY BLACKOUT FREE ELECTRICAL SWITCHING STATION POSSIBLE ONLY THANKS TO SF<sub>6</sub>**

The use of SF<sub>6</sub> as [insulating gas](#) for switchgears made possible to install the first underground electrical substation in the USA, completely concealed beneath a park. The project provides the city with a much-improved, reliable source of power along with aesthetic improvement of the electric facilities in and around the substations. The realization of such an underground and concealed substation would have been impossible without the use of the SF<sub>6</sub> based technology, which reduces the space



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required for conventional substations by 75 to 90 percent. Such a technology is virtually blackout free, increasing the reliability of electric services. Besides this premiere in the US, Canada, Spain, Germany, Japan and Australia have similar facilities.



Source: Equipment Manufacturer and  
[http://www.ocregister.com/ocregister/news/homepage/article\\_1242075.php](http://www.ocregister.com/ocregister/news/homepage/article_1242075.php)

### NEW ON OUR SITE

**[AIR CONDITIONING - STATIONARY](#)** : **[Cómo funciona el aire acondicionado?](#)**

**[Safety aspects of the main refrigeration fluids](#)** : new Short Term Limit of 3 % for CO<sub>2</sub>

### NEW LINKS ADDED

<http://www.ecofreezer.com/methodology.php>

**EuP Eco-Design of Energy-Using Products** - Commercial Refrigerators and Freezers

<http://www.ecoaircon.eu/index.php?id=144>

**EuP Eco-Design of Energy-Using Products** - Room air conditioning appliances

**EPBD Buildings Platform** is an information service for helping the implementation of the [Energy Performance of Buildings Directive](#)

[http://www.buildingsplatform.org/cms/index.php?id=7&no\\_cache=1](http://www.buildingsplatform.org/cms/index.php?id=7&no_cache=1)

**ASHRAE** (American Society of Heating, Refrigerating and Air-Conditioning Engineers) - society for engineers and others who work in this field. Source of research, standards, publications, education, and other products.

<http://www.ashrae.org>