



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

**ISSUE 26 - August 2005**

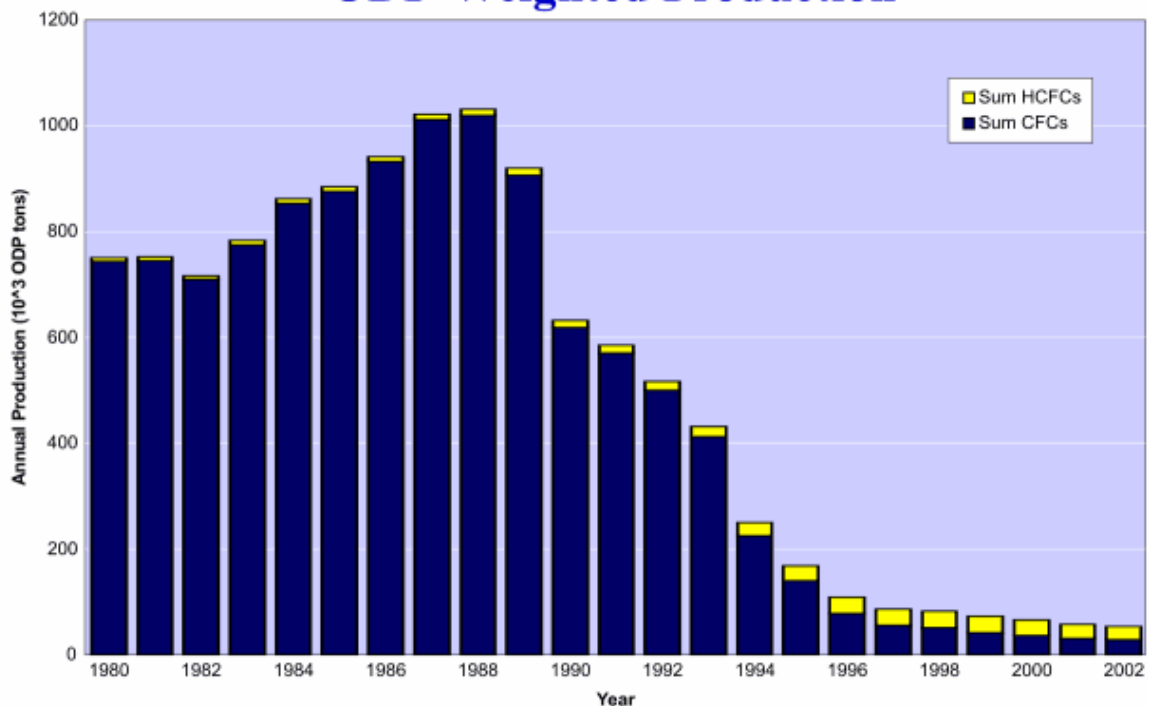
### **GLOBAL EMISSIONS AND SALES OF FLUOROCARBONS FOR 2002**

Pending the 2003 data, AFEAS has published the [2002 Global emissions and sales](#) of Fluorocarbons. Until recently, HFC-134a was the only HFC to be reported— because publishing data for a specific compound requires firstly its yearly production to be over 5,000 tonnes, and secondly that there should be at least 3 companies to manufacture it. The year 2002 is the first year for which historical data on HFC-125 and HFC-143a are reported.

*All of the production and sales data through 2002 is available for download at the AFEAS [Data Download Page](#).)*

The reported production of [ODS](#) (ozone depleting substances) by AFEAS reporting companies, expressed in ODP-tonnes, has been reduced by 95% from the peak year 1988.

### **ODP-Weighted Production**



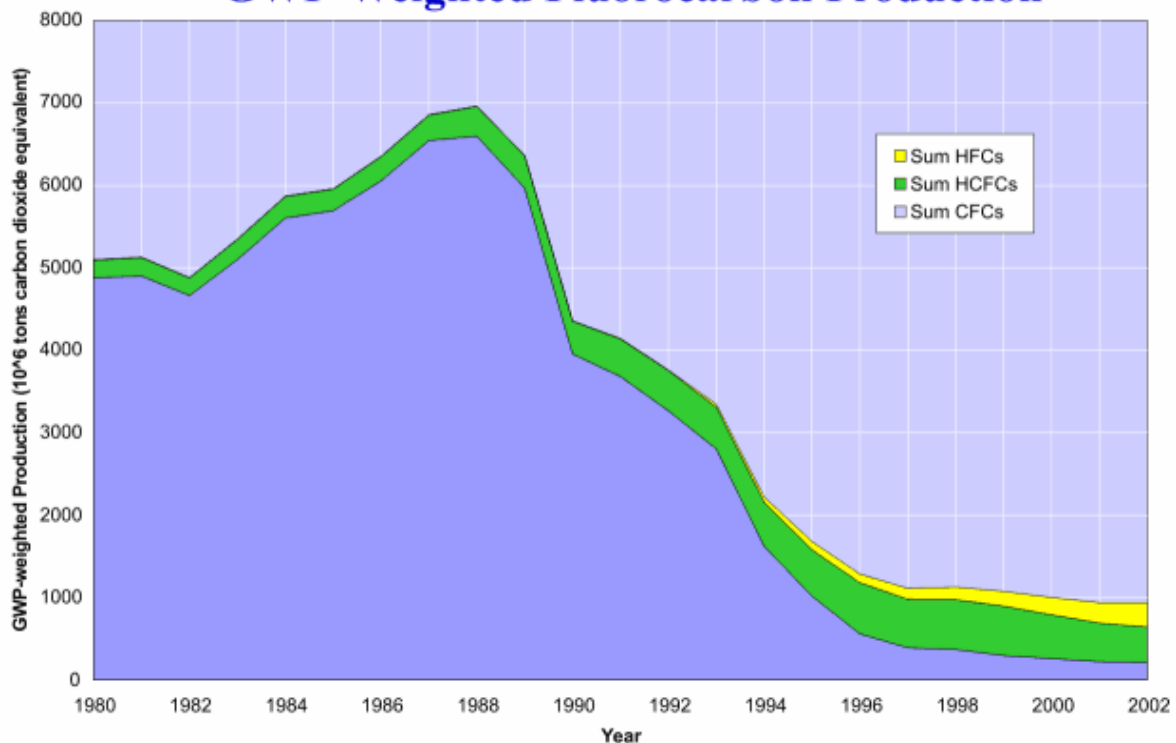
Similarly, the production expressed in [GWP weighted tonnes](#) has declined by about 87% from the peak year 1988.



# EFCTC NEWSLETTER

An update on fluorocarbons and sulfur hexafluoride

## GWP-Weighted Fluorocarbon Production



The emission patterns and release delays applied to HCFCs and HFCs have considerably changed since the introduction of the Montreal Protocol. Taking into account use patterns modifications, updated revised emission functions have been used in calculating the emissions.

### DEUTSCHER BUNDESTAG "UNTER DEN LINDEN" 50 (Berlin, Germany)

The building "Unter den Linden 50", on the famous avenue, is one of several buildings accommodating the offices of the Members of Parliament ("Bundestag"). It was a former "German Democratic Republic" government building, and was renovated when the Bundestag moved to Berlin. A R134a air conditioning system was installed, with a cooling capacity of 5 800 kW, delivered by 2 water chillers of each 700 KW and 2 of each 2 050 KW.

Source: Equipment supplier



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

### VOLUNTARY SF<sub>6</sub> CURBS IN POWER SECTOR "A SUCCESS"

Voluntary actions have cut emissions of sulphur hexafluoride (SF<sub>6</sub>) from Europe's [electricity industry](#) (25 EU member states plus Norway, Iceland and Switzerland) by 40% since 1995, after an [independent report](#), commissioned by [CAPIEL](#) (Coordinating Committee for the Associations of Manufacturers of Industrial Electrical Switchgear and Control gear in the European Union).

After the report *"SF<sub>6</sub> has unique, and currently irreplaceable, properties that allow the optimized operation of electrical switchgear and electricity networks"*.

It recalls the [LCA](#) (Life Cycle Assessments) which showed that, despite a high GWP, SF<sub>6</sub> was environmentally preferable to alternative technologies. Indeed, looking at the whole system, it is demonstrated that the use of SF<sub>6</sub> in such applications can reduce the overall CO<sub>2</sub>-emissions due to reduced network losses.

Not only did [Responsible Use](#) succeed in cutting SF<sub>6</sub> emissions, but containment measures are also the most cost-efficient, with the majority of such measures costing less than €6 per tonne of CO<sub>2</sub>-equivalent, while substituting SF<sub>6</sub> with alternatives is estimated to cost more than €1000 per tonne of CO<sub>2</sub>-equivalent.

The report confirms that a voluntary approach organised at national level was a success, calls for a harmonised European voluntary reduction commitment, and indicates that such approach could eventually *"become a global benchmark for voluntary industry action to combat climate change"*.

SF<sub>6</sub> emissions from the European electricity sector currently account for 2.9m tonnes of CO<sub>2</sub>-equivalent (out of a total EU-25 number of 4,952m tonnes).

This low figure could be halved by 2020, through further [Responsible Use](#) measures like:

- better training of staff handling equipment
- wider use of new low-leakage equipment
- and improved decommissioning guidelines.

Capiel is currently developing such guidelines.



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

### **ENFORCEMENT OF FLUOROCARBONS REGULATIONS ON MARITIME VESSELS IN THE NETHERLANDS**

---

Despite the success of the [STEK system](#) in the Netherlands, it was known that it was not the same for maritime vessels. Indeed, refrigeration installations on board of merchant vessels and trawlers have an average annual leakage of HFC refrigerants around 50%. Among smaller fishing vessels this figure could even rise to 80%.

The fleet uses only 5% of the total quantity of refrigerants in use in the Netherlands, but is responsible for 35% of the total HFC emissions, accounting for a disproportionately large share of refrigerant emissions.

As the [Dutch VROM](#) (Netherlands Ministry of Housing, Spatial Planning and the Environment) policy is that refrigerant leakage should not exceed 0.1-1% per annum, it has called upon the shipping industry to take corrective measures. In the past year, the VROM Inspectorate has conducted further inspections of maritime vessels and will continue to do so in 2005 as a matter of increased priority.

The objective of these inspections is to ensure that operators comply with all legislation covering the use of Fluorocarbons, and that refrigerant leakage is drastically reduced.

Appropriate measures which must be taken include:

- operation and maintenance of the equipment in use
- introduction of formal maintenance systems
- increased awareness of crew members
- improvement of leakage detection systems.

The high leakage rate on maritime vessels can be explained by a number of causes, among others the refrigeration equipment's inability to withstand the specific conditions at sea such as a corrosive salt-laden atmosphere or the sheer complexity of the equipment for untrained personnel. The causes may also include poor maintenance, the failure to detect leaks, the age of the equipment in use, or the technology employed.

Source : « Enforcement of chlorofluorocarbons regulations on maritime vessels-  
A. Klingenberg – [INECE](#).

### **NEW ON OUR SITE**

---

Appliance Research Consortium/Alliance for the Polyurethanes Industry Press Release - July 2005: "[New Research is quantifying environmental benefits of appliance insulation.](#)"