



# EFCTC NEWSLETTER

## An update on fluorocarbons and sulfur hexafluoride

**ISSUE 35 - May 2006**

### **F-GAS REGULATION: CONCILIATION TEXT FINAL APPROVAL BY THE EU PARLIAMENT AND THE COUNCIL**

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In its 3<sup>rd</sup> Reading in April 2006, a large majority at the European parliament approved the [Joint Texts of the Conciliation Committee](#) on the Regulation on Fluorinated Gases and the Directive on Mobile Air Conditioning.

Later on, the EU Council of ministers formally approved the Texts, clearing the way for their publication in the Official Journal, after which both legislations will enter into force.

Regarding the Commission [action upon Austria and Denmark](#), because of their stricter regulations, the [Report on the 3<sup>rd</sup> reading](#) mentions that "On the specific case of the existing national measures in Denmark and Austria, against which the Commission has been considering legal action, a safeguard clause was introduced, which will allow the two Member States to keep their legislation until 31 December 2012."

After discussions between representatives of the EU Parliament and the Commission, rapporteur Doyle expressed her confidence that the infringement procedures against Denmark and Austria are likely to be terminated but the final decision of the Commission is still pending.

### **HFC USED FOR NORWAY'S LARGEST HEAT PUMP FOR UPGRADING LOW TEMPERATURE ENERGY**

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Transferring energy from waste water to heat 9,000 flats: one of the world largest HFC-based compressors at the end of a 300-meter long tunnel in a hillside in central Oslo recovers heat from one of Oslo's largest sewage water channels and transfers it into the city's growing district heating system with a temperature of +90°C.

The refrigerant used in this heat pump is R134a, which is the only refrigerant available for such high temperatures in such a big unit. The outlet temperature is determined by the design conditions for the district heating system, where the temperature may go up to 120 °C in cold weather. The design return temperature is 60 °C, and the plant is using peak load boilers connected in series with the heat pump to increase the temperature from 90 °C up to the required temperature if necessary.

With a heating capacity of 18,4 MW, the Skoyen plant run by Viken Fjernvarme AS generates an annual heating capacity of 90 million kWh, enough to heat 9,000 flats or save burning 6,000 tonnes oil a year.

In the cavity, there is still room for an extension with a further heat pump to produce heating energy for up to 2'500 additional detached houses. The district heating network has a length of 193 km, connecting are more than 800 commercial customers and more than 2,300 detached houses.

There are other [heat pumps in Nordic Countries](#) feeding district heating and district cooling circuits in sustainable projects.

Source : Equipment Manufacturer, [Viken Fjernvarme](#) information, [Press](#)

### **ENERGY EFFICIENCY: A MAJOR ISSUE**

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According to [AHAM](#) (the Association of Appliance Manufacturers in the US), a typical new American refrigerator consumed 49% less energy than its ancestor manufactured in 1987. The efficiency gain of the average refrigerator has increased 35% since 2000. Given that the 112 million US refrigerators consume (1997 figures) 151 TWh, it can be seen that the benefits, in terms of energy saving are enormous.

In one of its [editorials](#), the [International Institute of Refrigeration](#) draws the attention towards the importance of Energy Efficiency, which has become a major issue in the refrigeration, air-conditioning and heat-pump domains, and presents a few noticeable achievements.

[Energy-saving is an essential measure](#). Gains thanks to the use of equipment producing the same amount of cold with reduced energy consumption benefit the user and the environment.



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When one considers that 1 m<sup>3</sup> of refrigerated storage space consumes roughly 40 kWh/year and that a 300-litre European refrigerator consumes 560 kWh/year, it is obvious that the refrigerator consumes 45 times more energy per volume unit and that considerable savings can be achieved, even if operating conditions are by no means comparable.

Installation maintenance (defouling and cleaning of exchangers) or use of larger sized exchangers enables gains of 2 to 3°C to be obtained between high and low pressures. Such gains would raise the COP of the installation in the range of 10 %, and therefore substantial savings could be achieved.

In the US, ARI's HVAC&R Research for the 21st Century Program has an ambitious objective: to reduce household/building operating, maintenance and energy costs by 50% within 10 years. Given that in commercial buildings, the energy requirements, in terms of heating, refrigerating and air-conditioning are colossal (estimated to be 2095 TWh in commercial buildings and the residential sector in the US), huge progress is on the horizon.

This brief overview of energy issues would not be complete without mentioning that the 120 million heat pumps currently in use enable 800 TWh/year of heating to be produced and reduce CO<sub>2</sub> emissions by 0.12 Gt per year.

In conclusion, all efforts designed to improve energy efficiency are to be praised, continued and publicised.

### **SF<sub>6</sub> RELIABLE INSULATING AGENT**



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Source : Equipment Manufacturers

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