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Press Relations Officer: Martin Ittershagen
PR-staff: Anke Döpke, Dieter Leutert,
Fotini Mavromati, Theresa Pfeifer
Address: Postfach 1406, 06813 Dessau
Telephone: +49 340/21 03-2122, -2827, -2250, -2318, -3927
E-Mail: pressestelle@uba.de
Internet: www.umweltbundesamt.de



Climate protection at the supermarket

International conference Co₂ol Food – climate friendly refrigeration in supermarkets in Berlin

Climate-friendly refrigeration in supermarkets was the focus area of the international conference sponsored by the Federal Ministry for Environment and the Federal Environment Agency (UBA) and held at the end of May 2007 in Berlin by reason of the German EU Council Presidency. Some 250 participants from political, economic, and scientific circles discussed how the future of refrigeration in climate-friendly supermarkets might take shape. One of the essential outcomes: ecological refrigeration is also possible in supermarkets when the natural refrigerant carbon dioxide (CO₂) is used. What seems contradictory at first glance is, according to many experts, future technology in modern supermarkets. CO₂ is the most suitable refrigerant for it makes for energy-efficient cooling systems and does considerably less damage to the climate than the fluorinated greenhouse gases in use up to now. The refrigerant mixture R 404A has 3,300 times greater impact on the climate than CO₂.

At present fluorinated greenhouse gases are the standard refrigerant used in supermarkets. One of the problems with these refrigeration systems is that they leak, leading to unintended refrigerant emissions of which there are 3.3 million tonnes of CO₂ equivalents produced annually in Germany alone. This volume corresponds to the greenhouse gas emissions generated by the mere annual electricity consumption of these cooling systems. The use of a less harmful refrigerant such as CO₂ could cut the systems' greenhouse gas emissions caused by energy consumption and refrigerant emissions by half.

For the sake of climate protection, UBA believes that the days of fluorinated greenhouse gas use as a refrigerant are limited. Experts at the Berlin conference introduced innovative solutions which can replace fluorinated greenhouse gases. CO₂ is the solution of the future as concerns refrigeration in supermarkets, and the future has already begun. There are already 100 refrigeration and deep freezer systems in use in Europe, the result of years of development efforts by various manufacturers. This represents a great success for both manufacturers and climate protection.

Supermarket refrigeration is an area where gains in climate protection can be made through low-cost measures. CO₂ as a natural refrigerant is, compared to fluorinated greenhouse gases which require costly manufacture, a cheap alternative that is readily available all over the world. CO₂-equipped deep freeze systems are already competitive, although normal refrigeration has not yet progressed as far. Nevertheless, the higher unit prices are balanced out over the unit's life-time by lower energy costs and expenditures for refrigerants.

Regardless of choice of refrigerant the food retail industry can cut energy costs considerably by means of a few simple technical measures, e.g. owners would waste a lot less energy if glass doors on the cold shelves became standard. Such investments usually pay off in a short amount of time.

All *Climate friendly refrigeration in supermarkets* conference documents are available at: <http://www.umweltbundesamt.de/produkte/> or at www.ecofys.de/de/co2ol_food.htm.

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