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PRESS REVIEW 2007

All press articles are available on the public website of Refrigerants, Naturally!

1) Articles in newspapers

- Bild am Sonntag – March 18: Neuer Klimaskandal
- Financial Times – July 5 : Corporate citizenship: More than the sum of the parts
- New York Times – November 7: Mum’s the word

2) Other publications

- UNEP 2006 REPORT OF THE REFRIGERATION, AIR CONDITIONING AND HEAT PUMPS TECHNICAL OPTIONS COMMITTEE 2006 Assessment, (references to RefNat p. 65, 66)
- CSD Partnerships Wire 8 May 2007
- Case Study on “Greenpeace’s pioneering advocacy of natural refrigerants” published in “Technology transfer for the Ozone Layer launched at the celebrations for the 20th anniversary of the Montreal Protocol on 16 September, 2007 in Montreal, referring to RefNat, p. 290
- CLIO, Climate and Ozone Update UNEP, July – Sep 2007
- EIA Briefing December 2007. CHILLER CABINET AND AIR-CON CHEMICALS WILL FUEL GLOBAL WARMING. (reference to RefNat on p. 5)

3) Website references

UNEP Ozone Action Partnerships
<http://www.uneptie.org/ozonation/partnerships/refnat.htm>

UNEP HCFC Help Centre
<http://www.unep.fr/ozonation/topics/hcfc.asp>

CSD Partnership Website
<http://webapps01.un.org/dsd/partnerships/public/partnerships/1460.html>



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1) Articles in Newspapers

Bild am Sonntag, 18. März 2007

NEUER KLIMASKANDAL!

Alle Welt redet von Kohlendioxid (CO₂) als Klima-Killer Nummer eins: Doch das Kälte-Gas HFC 134 a ist dreitausend Mal schädlicher und gefährlicher für unser Weltklima als CO₂. Und es befindet sich praktisch überall: in den großen Kühltruhen der Supermärkte, in Auto-Klimaanlagen und in Getränkeautomaten. Außerdem wird es bei der Herstellung von Schaumstoffen eingesetzt. Das Fluor (F) in der Verbindung ist extrem stabil, bleibt gut 20 Jahre lang unzerstörbar in der Atmosphäre und heizt dort das Weltklima auf.

Der Treibhauseffekt von HFC 134 a ist extrem groß?, bestätigt Winfried Schwarz vom Umweltforschungsbüro in Frankfurt. Der Experte hat im Auftrag der EU und des Umweltbundesamt Studien über das Kältemittel erstellt.

Für Wolfgang Lohbeck, den Klimaexperten von Greenpeace, ist es ein Skandal, dass das Kälte-Gas HFC 134 a heute überhaupt noch produziert wird. Wenn wir die Herstellung nicht stoppen, werden sich nach Berechnungen von Experten im Jahre 2050 so viele Moleküle des Gases in der Atmosphäre befinden, dass der Klimakiller-Effekt den des Autoverkehrs schlägt.

Winfried Schwarz bestätigt, dass die Leckagerate ist sehr hoch ist. HFC 134 a verschwindet mit der Zeit einfach durch Ventile und entweicht durch die Schläuche. Die Rückgewinnungsrate ist deshalb äußerst gering. Ist das Kälte-Gas erst freigesetzt, gibt es kein zurück!

Über 400 000 Tonnen HFC 134 a werden heute pro Jahr weltweit hauptsächlich in den USA und Japan produziert. In den 90er Jahren galt das Kälte-Gas als willkommene Alternative für das ozonschädigende FCKW, an das sich jeder noch als Treibmittel in Spraydosen erinnert. Das Chlor (C) in diesem Stoff hat die Ozonschicht zerstört. Man wollte das Ozonloch schnell stopfen, doch an die Folgen fürs Weltklima dachten

damals nur wenige Experten.

Wolfgang Lohbeck von Greenpeace hat dem HFC 134 a den Kampf angesagt und brachte am Freitag Vertreter von Weltkonzernen wie Coca Cola, Unilever, McDonalds und Pepsi zu einem Krisengipfel in Frankfurt an



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einen Tisch. Ziel der Veranstaltung war eine verbindliche Absichtserklärung der Konzerne, das Kälte-Gas in ihren Anlagen zu ersetzen.

Coca Cola reagierte sofort. "Wir investieren über 40 Millionen US-Dollar, um das Klima-Gas in unseren Getränkeautomaten so schnell wie möglich zu eliminieren", verspricht Salvatore Gabola, Europa-Chef der Öffentlichkeitsabteilung von Coca Cola in Brüssel. Die ersten 3000 klimagasfreien Cola-Automaten werden in Deutschland stehen.

Financial Times, July 5 2007

Corporate citizenship: More than the sum of the parts

By Sarah Murray

Published: July 5 2007 04:04 | Last updated: July 5 2007 04:04

There was a time when a company's interaction with non-profit organisations consisted either of fending off the ire of anti-corporate activists or of signing cheques for good causes.

While these activities continue, another, far more collaborative relationship has emerged in which companies, in pursuit of responsible business strategies, are turning to community groups, non-governmental organisations (NGOs) and UN agencies to help achieve their social and environmental aims.

Convening bodies such as the UN Global Compact are also making it easier for public and private organisations to connect with each other.

However, the process of embarking on joint projects is not without its difficulties. The business culture of fast decisions, rapid product development and swift implementation of initiatives is far removed from the slower, more bureaucratic style of many non-profit organisations. Trickier still, some partnerships involve a shift from an adversarial relationship to a co-operative one.

Coca-Cola's work with Greenpeace takes place against a background of conflict in which the environmental group had been campaigning for the elimination of hydro-fluorocarbons, refrigerant gases that are powerful greenhouse gases. "They were very much on the attack with us and other companies," says Salvatore Gabola, director of European public affairs at Coca-Cola.



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Since then Coca-Cola, Unilever and others have been working with Greenpeace to develop alternative refrigeration technology and persuade suppliers to make the switch. “Instead of confronting each other, we slowly got into that mode of understanding each other and realising that we have common goals,” says Mr Gabola.

For Coca-Cola, there are several advantages of working with Greenpeace. For a start, Greenpeace’s recognisable brand as an environmental campaigner gives the companies it chooses to work with credibility. “It’s very powerful for a company to be associated with an NGO, especially if it’s an activist one,” says Mr Gabola.

Moreover, Greenpeace has environmental and technical expertise that a company such as Coca-Cola can use to implement change to a new refrigeration technology.

Technical expertise is also at the heart of another Coca-Cola partnership, announced in June: a water conservation programme with the World Wildlife Fund to protect seven of the world’s most crucial freshwater river basins. At the same time, Coca-Cola is working to continue to reduce its own water consumption with help from the WWF. “These are the kind of things we know we need to do, but we can’t do on our own because we don’t have the credibility or the expertise,” says Mr Gabola.

The fact that NGOs have local knowledge and experience of social and environmental issues is another form of expertise that is crucial as companies enter the development arena.

In India, for example, ICICI, the country’s largest private-sector bank, has increased its microfinance loans from \$15m four years ago to more than \$350m by working through local microfinance institutions. Through this network of local organisations, the bank can reach rural borrowers it would otherwise not be able to access.

The key to the success of these partnerships lies in the different assets that companies and non-profit organisations bring. “Unless we bring the specific skills and talent that each of these types of organisations have together, we’re not going to make the progress we need to make,” says Pamela Passman, head of global corporate affairs at Microsoft.

“We understand the power of software and computing, but we’re not experts on poverty or health. So we can make significant progress when we are partnering with NGOs, governments and international organisations such as the UN.”

Microsoft has more than 1,000 such partnerships around the world through which it rolls out such programmes as its Microsoft Unlimited Potential initiative, giving skills training to disadvantaged people with the assistance of community groups and NGOs.

ICICI’s microfinance model and Microsoft’s global partnerships are both examples of how alliances can give large companies access to communities they might not otherwise reach. “We can learn much more about local community needs and who are the key players,” says



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Ms Passman. “We need people who can help make connections and get the services to those that need them.”

As with access to technology and financing, access to medicine is another area where large corporations need local players to advance their social objectives. One example is the International Trachoma Initiative, founded by the Edna McConnell Clark Foundation and Pfizer, the pharmaceuticals company, to address trachoma, the world’s leading cause of preventable blindness.

Pfizer had developed a treatment that was effective in eliminating the disease but needed a way of delivering it to areas where the disease was endemic.

“What we had was the medicine,” says Robert Mallet, Pfizer’s head of philanthropy and corporate responsibility, and president of the Pfizer Foundation. “What the initiative had was the expertise on the ground. Put those things together and you have a real solution for communities around the world.

The New York Times November 7, 2007

Mum’s the Word: We Found a Greener Gas

By CLAUDIA H. DEUTSCH

PSYCHOLOGISTS and Wall Street traders have long known it: people and markets act on perception, whether it clashes with reality or not.

Which means that sellers of cold foods may soon have a public relations problem on their hands.

Hydrofluorocarbons, better known as HFCs, have been the refrigerants of choice since their predecessor, chlorofluorocarbons, were proved to hurt the ozone layer. But refrigeration equipment can leak, and HFCs are a powerful greenhouse gas. So Coca-Cola, McDonald’s and other companies are switching to another gas to keep their vending machines, trucks and in-store freezers and soda machines cold.

That gas is carbon dioxide. Thus the perception problem.

Thanks to the language of climate change — “carbon offsets,” “carbon neutral,” “carbon intensive,” “carbon tax” and the like — most people think carbon dioxide is far and away the worst, if not the only, greenhouse gas around. But pound for pound, HFCs, among other gases, are far more potent when it comes to trapping the earth’s heat. So using carbon dioxide in place of HFCs in refrigeration equipment poses less environmental risk.



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CO2 as a good thing? Even Martha Stewart might have trouble explaining that.

“Really understanding this issue requires a level of scientific knowledge and sophistication that is beyond most people,” said Kert Davies, research director of Greenpeace, which spearheaded Refrigerants Naturally, an industry coalition that has been exploring alternatives to HFCs for several years.

The result, marketing experts warn, could be reputation chaos. “The man in the street just assumes that carbon dioxide is the killer,” said Michael Watras, president of Straightline International, a brand consulting firm. “Those companies better be ready for a huge image issue.”

The issue hasn’t arisen yet, for various reasons. Unilever, which owns Ben & Jerry’s, switched to another less-risky gas, propane, for refrigeration, thus dodging the carbon dioxide bullet. McDonald’s is so far testing carbon dioxide as a refrigerant only in Europe, “where consumers are far more attuned to the scientific issues,” said Bob Langert, McDonald’s vice president for corporate social responsibility.

And companies that normally promote their greenness are keeping an uncharacteristically low profile on their use of CO2. In September, for example, Greenpeace and Coca-Cola mailed a press release publicizing the HFC-free coolers Coke will use at the 2008 Beijing Olympics. The identity of the replacement refrigerant was not revealed until halfway down, in passing.

“We hadn’t even asked ourselves if there will be a stigma attached to this, because we are so sure it is a strong solution to a climate problem,” said Jeff Seabright, vice president for environment and water resources at Coca-Cola. “But CO2 has developed such a bad reputation as the cause of climate change that we have to really explain how harnessing its attributes is part of the solution, not the cause.”

But can Coke and its confreres prevent the inevitable — if unfair — bad buzz?

Marketing experts say yes. But they offer highly divergent and often mutually exclusive ideas about how.

Eric Hirshberg, chief creative officer of Deutsch/LA, a unit of Interpublic Group, suggests using placards in stores, stickers on refrigerated trucks and other visual methods to stress the end results while playing down the means.

“They have to stay on message, which is that they are voluntarily lowering the climate impact of their refrigerants at their own expense,” he said. “They don’t have to mention carbon dioxide at all.”



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And if they do, they certainly should not try to justify its use, added Jan-Benedict Steenkamp, a professor of marketing at the Kenan-Flagler Business School at the University of North Carolina.

“It’s a losing proposition to try to explain that you are exchanging something very bad for something mildly bad,” he said. “The companies should just calculate their carbon footprint, and specify that this change is reducing it by X percent.”

Conversely, Dan Becker, a former Sierra Club official and a consultant to environmental groups, says he thinks carbon dioxide should be front and center — but that the companies should defuse the issue by letting Greenpeace do the talking. “If an environmental leader says that ‘irony of ironies, carbon dioxide is the safest refrigerant,’ it has a lot more credibility than if companies say it,” he said.

Others suggest that companies simply position the switch as a way of saying they are reusing carbon dioxide, thus keeping it out of the atmosphere. “The idea of recycling carbon will be a much easier sell than the idea that other gases are worse than CO₂,” said Stephen Ansolabehere, a professor of political science at the Massachusetts Institute of Technology.

Mr. Watras, the brand consultant, disagrees with all the tactics. He thinks the companies should mount a straightforward advertising campaign, preferably on prime time television, explaining in simple terms why carbon dioxide is not the gaseous equivalent of the devil incarnate. But he thinks they should speak with one voice — that of Refrigerants Naturally — rather than as individuals.

“A company advertising alone looks like it is pushing an agenda, but a consortium of companies looks like it is tackling an issue,” he said.

And as any brand specialist knows, perception trumps reality every time.



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Excerpt from - UNEP 2006 REPORT OF THE REFRIGERATION, AIR CONDITIONING AND HEAT PUMPS TECHNICAL OPTIONS COMMITTEE 2006 Assessment, (indirect references to RefNat's activities p. 65, 66)

4.4 Refrigerant Options for New Equipment

Refrigerant choices for new equipment are different depending on the national or regional regulations, the refrigerant quantity, the refrigerating capacity and the temperature. The use of flammable or toxic refrigerants may be limited or forbidden by safety standards or regulations.

4.4.1 Stand-Alone Equipment

The majority of stand-alone equipment (see below the different types) is based upon HFC technology. Some well-established beverage companies and ice-cream manufacturers committed themselves in 2004 to eliminate HFC use in their equipment /Coc04/. Use of HCs and CO₂ is growing in several applications.

Most of the stand-alone equipment used in commercial installations, hotels, and bars, (such as wine-coolers, professional kitchen refrigerators and freezers, and hotel minibars) is based on the same technology as domestic refrigerators and freezers, for which technical options are addressed in Chapter 3. Other stand-alone equipment, even if based on the same technology, is used only for commercial purposes: ice cream cabinets, water coolers. Plug-in display cabinets, ice machines, and vending machines are specifically designed for commercial use.

Ice cream Freezers

Ice cream freezers with glass lids can be found in a large number of supermarkets and convenience stores. Most of them have been installed by ice-cream suppliers. The standard choice of refrigerant is R-404A or HFC -134a. However, HC cabinets have been available since 2000, and HC technology is gaining market share. More than 100,000 HC ice cream freezers have been installed by one global company. Another one has chosen CO₂ as the refrigerant and has just begun to commercialise them in 2006. In most ice cream freezers with HCs, HC-290 (propane) is used. Where domestic freezers are used as commercial cabinets, isobutane may be used. It is the main option for global companies for the renewal of their ice cream freezers.

Water Fountains

A great number of water fountains for both bottled water and tap water are installed in office buildings, supermarkets, etc. They are installed with a small compressor refrigeration system and so far HFC-134a is the standard refrigerant. The typical HFC-134a charge is about 40 g. Some companies have developed models using HC-600a (isobutane).

Ice Making Machines



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A great number of ice machines are installed in restaurants and bars, and usually use HFC-134a.

Vending Machines

The cooling capacity of vending machines is significant (typically 600 W) to achieve the necessary rapid cooling of cans. HFC-134a is the standard refrigerant in vending machines. Vending machines using HC-290 have been commercialised as of 2004 in Japan, and recently equipment using HC-600a has been introduced. So far about 3,000 units using HCs have been installed by the end of 2005 in Japan. Most soft-drink vending machines are purchased by large suppliers of soft drinks.

CO₂ as a refrigerant has been chosen by one global company and so far about 4,000 single-door coolers and vending machines using CO₂ have been installed since 2005 (1,000 have been employed during the 2006 Olympic Winter Games), mostly in Europe. This new CO₂ system is installed inside a plug-in/pull-out cassette. Tests by DTI (Denmark) on CO₂ cassettes, have shown energy efficiency better than or equal to, up-to-date HFC-134a technology for outdoor temperature below 32 °C.

Stirling system prototypes (a not-in-kind technology using helium as a working fluid) have been thoroughly tested and have shown favourable energy efficiency in the same range as an up-to-date HFC-134a machine /IPCC05/.

Glass-Door Coolers

Glass-door bottle coolers can be found in several places like supermarkets, convenience stores, etc. The most common type is the one-door 400 litre-type. Glass-door coolers are often installed by a soft drink company. Currently, HFC-134a is the standard choice. Since 2000 several thousand units have been installed in Europe using mostly HC-600a and for some brand names HC-290. As indicated above global companies have introduced CO₂ systems for those bottle coolers.

Plug-in Display Cabinets

The use of plug-in display cabinets is increasing in small and medium size supermarkets. This choice is made because plug-in cabinets are cheaper and more flexible than remote display cabinets connected to a centralised system even if they are significantly less efficient.

The energy balance has to be made on the store itself because the release of heat by the condenser of each and every plug-in cabinet in the sales area has to be removed by an airconditioning

system, which has to be designed with a significant larger cooling capacity than usual ones. So far, R-404A refrigerant is the standard choice, and the charge per unit varies from 220 to 300 g.



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Excerpt from - CSD Partnerships Wire 8 May 2007

Mr. Bryan Jacob, of The Coca-Cola Company, also representing the Refrigerants, Naturally! partnership, opened his presentation with an introduction to the partnership, a global coalition of companies committed to natural refrigerants in point of sale equipment for the food and beverage industry, such as in supermarkets. He explained that the overall goal of the partnership is to combat climate change and ozone layer depletion by substituting harmful F-gases (CFCs, HCFCs and HFCs) with natural refrigerants. He added that an improvement in energy efficiency in refrigeration is a complementary goal. Mr. Jacob explained that the strength of a partnership with this goal is in the sharing of non-proprietary information within the partnership, to provide outreach to consumers, Governments and civil society. He added that the partnership does not engage in lobbying Governments, and instead it provides research and outreach to inform governmental policy on the technical elements of F-gases, as it has done with the EU.

Mr. Jacob indicated that Refrigerants, Naturally!, began in 2004 as an agreement between The Coca-Cola Company, McDonald's and Unilever, with the backing of UNEP and Greenpeace. The partnership was registered as a CSD partnership in 2005 and gained three new members in 2006, namely, PepsiCo, Ikea and Carlsberg. He explained that it is a voluntary agreement for the sharing of information, without prescriptive activities, and that each company has taken a slightly different approach to implement the goals of the partnership. McDonald's, he added, opened an HFC-free restaurant in Denmark, while Unilever focused on hydrocarbon solution for ice-cream freezers and Coca-Cola chose reduction of CO₂ as the refrigerant best suited to their needs. Mr. Jacob went on to highlight some of the major challenges faced by the partnership, in particular the slow rate of technical progress and adoption of new technologies, lack of involvement of other companies in the industry, low visibility, technical subject matter is difficult for public/media to understand, and reconciling individual interests. He indicated that the latter has been addressed to a great extent by the creation of a secretariat to oversee the partnership. Mr. Jacob discussed the key lessons learned by Refrigerants, Naturally!, such as the necessity to include other companies to have the critical mass to make an impact, the need for a secretariat, and the importance of UNEP and Greenpeace to raise the credibility of the initiative. He also described the core competencies that the private sector can bring to a partnership, placing an emphasis of the important role private sector plays in market and technology development. He added that Refrigerants, Naturally! has contributed a peer-reviewed paper on refrigeration research, adding to the academic and scientific expertise available on the subject, and transforming the relationship of the companies with the academic community.

Mr. Jacob also indicated that the partnership can provide a role model for other companies looking to improve their performance, such as WalMart's interest for energy efficiency and Tesco's to be HFC-free. He added that they may also be having an impact on international policy-making, such as the IPCC ozone and climate report, which mentioned F-free refrigeration as a contribution to climate change mitigation.



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Excerpt from Clio – Climate and Ozone Update, UNEP, July- Sep 2007

HFC-Free Refrigeration, Naturally!

Three more companies have joined Refrigerants, Naturally!, a unique public-private partnership that promotes HFC-free refrigeration technologies that protect the Earth's climate and ozone layer for “point-of-sale” applications. The founding members — McDonald's, The Coca-Cola Company, and Unilever — are now joined by Carlsberg, IKEA and PepsiCo. UNEP and Greenpeace are “supporters” of this partnership, which is recognized by the UN Commission on Sustainable Development and which has received an USEPA Climate Protection Award. All members are committed to: a timeline governing their shift to HFC-free technology; funding and providing human resources for R&D; sharing non-commercial information related to environmentally friendly technologies among themselves; and sharing data and results with external stakeholders, such as their wider supply chain, industry peer groups, government decision-makers, and the public. **Source:**

<http://www.refrigerantsnaturally.com/>

Call for New Members Refrigerants, Naturally! is encouraging other major companies interested in HFC-free technologies to join the initiative. New partners will be expected to both contribute resources in terms of internal research and development/investment in alternative refrigeration technologies, and to contribute to the cost of the secretariat based in Frankfurt, Germany.

The present members have found this initiative as an effective, flexible and useful tool to help manage their work on sustainable refrigeration. It provides participants, among other things, with the following:

A forum to collect intelligence and share information on HFC-free technologies and public policy trends.

A "safe haven" to manage the institutional and NGO dialogue in an open and non-confrontational way

A practical tool and critical mass to collectively communicate with the supply chain and to take position in the public domain (with legislators, with pro-HFC lobby, etc.)

An established "brand" with credibility and visibility - identified with leadership even if subject is difficult to explain. A flexible platform to showcase what we do, with availability of material, messages, tools, plus Greenpeace's and UNEP's capabilities and connections.

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Excerpt from the EIA Briefing December 2007. CHILLER CABINET AND AIR-CON CHEMICALS WILL FUEL GLOBAL WARMING. (reference to RefNat on p. 5)

The commercial sector is the second largest source of global demand for HFCs. In response to the environmental problems associated with the use of HFCs, several large multinational companies such as Coca-Cola, Unilever and Schweppes have made pledges to phase out HFC use. These companies have partnered with the United Nations Environment Programme (UNEP) and Greenpeace in order to collaborate on initiatives and encourage other companies to eliminate GHGs from refrigeration equipment. In 2007, PepsiCo, IKEA and Carlsberg joined the alliance.³⁸

The use of ammonia (NH₃) as a refrigerant in the commercial sector is well established. It has been used to replace HCFC-22 in applications such as water chillers and commercial refrigeration systems for supermarkets throughout Germany.³⁹ Unilever, the world's largest ice cream business, uses ammonia for all industrial-scale refrigeration requirements within Europe.⁴⁰