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Danish CO₂ Technology Leaders Strategic Seminar - Part I

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At a specialised meeting in Denmark on 14 May, key players from the HVAC&R industry discussed strategies on how to develop their CO₂ (R744) business further. While Danfoss confirmed that natural refrigerants would be the only way to go in a time of mounting political pressure, environmental group Greenpeace warned against a next generation of HFCs in stationary applications.

The meeting, bringing together Danish manufacturers and suppliers, retail chains, trade associations, and environmental groups, was held in Hedensted on 14 May to explore the opportunities but also threats CO₂ Technology is facing in Denmark and beyond. The one-day event hosted by Danish manufacturer Nilan and organised by the industry network KVCA featured presentations from Danfoss, Rema 1000, Johnson Controls, Hydro, IPU, Advansor, Greenpeace, and shecco - each providing their perspective on how the R744 industry might develop and which technical, political, and economic barriers it could face.



The presentations

shecco: The day's first presentation provided a global overview of policy and market trends affecting the use of R744 in selected EU countries and the USA. Based on results from the latest market analysis carried out by shecco in the field of commercial refrigeration, Nina Burhenne shed light on the current availability of CO₂ systems and the industry's rising interest in R744 in refrigeration. She also presented shecco's latest news service "NaturalRefrigerants.com", as well as "Atmosphere 2009" – the international conference on natural refrigerants to be held in Brussels on 19-20 October this year. The Danish industry would have to be more outspoken about the benefits of CO₂ at the Post-Kyoto Protocol discussions in Copenhagen this December and show other countries the way on how R744 can be successfully used in a wide range of applications. Burhenne urged participants.

Greenpeace: Wolfgang Lohbeck, Leader for Special Projects at Greenpeace Germany, made clear that "Greenpeace does not accept another F-gas era to come." He referred to the fact that chemical companies, currently presenting a new generation of HFOs (hydrofluoro olefin) as a substitute for HFCs in Mobile Air Conditioning, plan to introduce these as a solution also to stationary cooling applications. After the ozone-depleting effect of CFCs and HCFCs, and the high global warming HFCs, a 3rd solution with still unknown environmental impact should be rejected on the basis of the precautionary principle of "bad experience" with all substances before. Moreover, the much more difficult handling of HFO-1234yf than hydrocarbons in case of fire, the formation of extremely toxic HF and the breakdown product TFA would be of special concern. In a 1998 study commissioned by Greenpeace 19 different products containing fluorine had been found to form from R134a, some of them potentially highly reactive and toxic. From this, Lohbeck explained, it can be concluded that potential risks from breakdown products from F-gases in the environment could still be largely underestimated. Ultimately, HFOs would still be HFCs despite their new name chosen solely for marketing reasons to avoid image problems known to exist with HFCs. As a conclusion, the "the climate argument (by the chemical industry) is nothing but a trap", where 1234yf was introduced only to serve as a "door-opener for the new family of new f-gases."

Danfoss: Dr. Jürgen Süß started off his presentation with a reminder of how rapidly global greenhouse gas concentrations are rising. If plotted on a diagramme with restrictions put on refrigerants by the Montreal Protocol (ozone depletion) and Kyoto Protocol (greenhouse gases), only natural refrigerants – including hydrocarbons, carbon dioxide, ammonia, air and water - would hence be left as a future-proof solution. Due to its efficiency benefits and drawbacks, CO₂ would be best applied in light commercial, commercial and industrial refrigeration. Today, leading manufacturer Danfoss can deliver as many components for CO₂ as for other any other refrigerant.

HFOs no option in Denmark

A panel discussion summarising issues raised during the day highlighted that the Danish approach to drive the use of natural refrigerants through a combination of HFC bans and ever-increasing import taxes has been a complete success up until now, hence serving as a role model for other countries to follow. Competing HFOs, proposed as a next generation of chemicals to replace HFCs, were rejected by all participants as no option to consider in stationary cooling applications.

Coming next...

In a second article to be published tomorrow, R744.com will update you on the presentations of Johnson Controls, IPU, Hydro/Piflex, and Advansor.

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