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16-17 March 2015 in Brussels

Greenpeace

F- Gases: Why are they they still an issue?

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Greenpeace and F- Gases: Three stages

against CFCs and HCFCs, starting in 1987, main argument: **ozone depletion**
-*hard hitting actions* against CFC producers in many countries.

against HFCs, starting in 1991, two major characteristics:
- "*Positive projects"* Greenfreeze (1992) and SolarChill (2006) bringing HC as a refrigerant onto the markets in Europe, China, Asia, S- America
- *The climate aspect* as the main argument:

against HFOs, especially in MAC, from 2006

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The "positive approach": Demonstrating redundancy of F-Gases

1992: ***Greenfreeze***, the first CFC and HFC-free refrigerator, demonstrates needlessness of F-gases in household refrigeration, 700.000.000 units sold worldwide

1999: First edition of the ***Cold Technologies- Report***: compilates existing examples of technologies working without f- Gases

2000: Start of work on ***SolarChill*****,** first vaccination- cooler without f-gases, grid, and storage-battery. SC first presented in 2006, WHO- certification in 2010, around 10.000 units sold.

2004: co-initiating "***RefrigerantsNaturally***" with other partners: demonstrating the needlessness of F- gases in point-of-sale- applications in the food and beverage industry.

2013: Interactive database ***www.cooltechnologies.org***. online

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Why eliminate F- Gases?

It is about climate:

•2050 HFC emissions could be **equivalent to 20% of CO2 emissions** (BAU scenario), and up to 40% under a 450 ppm CO2 stabilisation scenario.
•HFCs are the **fastest growing greenhouse gases**, increasing at a rate of 10-15% per year.
•Avoiding HFCs is one of **the most effective** (and cost effective) preventing measures.
•Phasing down HFCs under the Montreal Protocol would **prevent up to 100 bn tonnes (Gt)** CO2-eq emissions by 2050, and avoid up to 0.5% warming by 2100
•**Measuring CO2-equivalents** should be under a **20years perspective**, instead of 100ys, which dilutes their shortterm climate impact: Average lifetime of HFCs in use is 20,7 years.

But not climate alone:

Ozone-depletion, warming impact, or degradation products,
Precautionary principle- There are ENOUGH catastrophic lessons learnt about F- gases.

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New F- Gases, new dangers

2006: Chemical industry announces new F- Gases , but:

- Dangerous TFA- breakdown- products,
- Health concerns of toxic combustion by HF
-Poor efficiency: R1234yf less efficient than R134a, R134a less efficient than hydrocarbons.
- Extremely high costs for consumers (10 to 20 times of R134a) due to monopoly situation

2008: Image-driven Name-change from "HFC" to "HFO"

- HFOs on the rise in MACs, other sectors to come, "Roll- back"- scenarios:
- Technical disadvantages as well as dangers for health and environment widely ignored,
- massive lobbywork and pressure on all levels of chemical industry,
-German OEMs completely stop all CO2- developments, development-groups dissolved,

Today: Facing a Quasi- monopoly on a worldwide scale ´

- Growing resitance in car industry: OEMs, consumer organistaions (ADAC), NGOs, Daimler,
- Threat of juridical prosecution of Germany by EU- commission
- Good results on CO2, even in high ambient, OEMs announce models with CO2- MACs for markets

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What can Refrigerants, Naturally! and it`s supporters do?

Demonstrating technical viability and superiority of NR in POS- applications

Enforcement of natural refrigerants in the Food and beverage sector, in and beyond the limits of the Refrigerants, Naturally member group, especially **in the CGF**

Paving the way for Enforcement of natural refrigerants in other sectors, especially MAC

Disseminate arguments about problems related to ALL F- gases (supporters)

Publicly support the work of Refrigerants, Naturally! members (supporters)

F- Gases have never been a "solution"-

but always a part of the problem.

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Thank you very much!