

# EIA's Chilling Facts Campaign

*HFC-free cooling goes mainstream*

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# Outline



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# About EIA

- Established in 1984 to investigate, expose and campaign against the illegal trade in wildlife and the destruction of our natural environment.
- Offices in London and Washington DC
- Campaigns: Species in Peril, Forests for the World, Global Environment
- Investigating illegal trade in ozone depleting substances (ODS) since 1997
- Closely involved in international ozone and climate negotiations for well over a decade

# Background to the campaign



- EIA launched its “Chilling Facts” campaign in 2008
- Back then the landscape for commercial refrigeration was very different
- In 2008, only 14 UK stores were running on HFC-free cooling
- Limited momentum within the industry despite a push to find alternative solutions in the mid/late 1990s

# What has been achieved



- In the years since then, the landscape has changed a great deal
- Some retailers have set date for HFC phase out
- Number of stores running on HFC-free cooling in the UK:
  - 2008: 14
  - 2009: 46
  - 2010: 239
  - 2011: 344
- Cancún Dec 2010: Consumer Goods Forum resolution to begin phasing out HFC refrigerants as of 2015



# Chilling\*<sup>\*</sup>Facts IV

HFC-free cooling goes mainstream



# Main findings

- Of those surveyed, 344 stores across UK and 559 stores in Europe use HFC-free refrigeration
- Retailers report significant energy efficiency gains: EE and HFC-free cooling go hand-in-hand
- HFC-free systems make economic sense
- System design and complementary measures (e.g. doors on fridges) are key
- Challenges have been effectively addressed
- Retailers are also taking Interim steps (hybrid systems, replacing high GWP HFC-404A with lower GWP refrigerant)







# Case studies

## Coop Norway

### Good

Committed to HFC-free refrigeration in all new stores.  
Already using HFC-free refrigeration in 30+ stores.  
Rolling out doors on chillers to all new stores and refurbishments.

### Bad

Distribution centres run on HFCs and HCFCs.  
However, they will be opening a new distribution centre using natural refrigerants in 2014.  
Incomplete survey, information missing on direct and indirect emissions, types of systems used across sectors and leakage rates.

## Ahold, Netherlands

### Good

Part of CGF commitment.  
Has approximately 20% of its estate - about 175 stores - running on hybrid CO<sub>2</sub>-HFC technology as an interim step.  
Rolling out chiller doors, now in 70% of stores.  
Consistently low leakage rates.  
Piloting HFC-free refrigeration.

### Bad

Needs to speed up roll out of HFC-free refrigeration with only one HFC-free store in existence.

## Coop Switzerland

### Good

Uses HFC-free refrigeration in all new stores and refurbishments since 2010.  
135 stores running on HFC-free refrigeration.

### Bad

Only using doors on chilled fish cabinets, should roll out to all chilled food.  
Incomplete survey, information missing on types of systems used across sectors and leakage rates.

## Metro, Germany

### Good

Part of CGF commitment.  
Using HFC-CO<sub>2</sub> hybrids and piloting HFC-free cooling.  
Uses doors on almost all chilled food.  
Year-on-year reductions in leakage rates.  
Uses HFC-free cooling in 7 distribution centres.

### Bad

High direct emissions. Worryingly, the company reports a rising refrigerant refill rate at its Metro Cash & Carry, Real and Galeria Kaufhof sales divisions.  
Sparse mention of HFCs in CSR report.  
Incomplete survey, information missing on types of systems used across sectors.  
Seems unprepared for its 2015 HFC-free commitment, needs to speed up roll out HFC-free stores.

## Delhaize, Belgium

### Good

Part of CGF commitment.  
61% of stores have doors fitted to chilled food, rolling through entire estate.  
Has saved over 13,500 tonnes CO<sub>2</sub>e in past 3 years.  
Reduced leakage rates from 16.6% in 2008 to 10.92% 2011.  
27 stores running on HFC-CO<sub>2</sub> hybrid technology as an interim step, planning roll out of 15 per year.  
Use of HFC-free cooling in 16 distribution centres.

### Bad

Incomplete survey, information missing on types of systems used across sectors.  
Needs to speed up roll out of HFC-free systems.

## Waitrose

### Good

Committed to total HFC phase-out by 2020.  
Now have 67 HFC-free stores representing 25% of their total estate.  
Four audits have reduced leakage from 1.4 leaks per store to 0.4.  
Recirculates cool air from chiller cabinets to reduce need for AC.

### Bad

Lack of movement on transport refrigeration.

## Tesco

### Good

Direct emissions down 23% on last year's suggesting tangible effects of conversion to CO<sub>2</sub> refrigeration.  
Have increased HFC-free stores outside UK from 23 to 51.  
Rolling out natural ventilation stacks to reduce need for AC.  
Rolling out doors on fridges in smaller format stores.

### Bad

Concerned UK roll out of HFC-free refrigeration is stagnating with just 14 new stores this year. Falling way behind plans to convert 150 stores by 2012.  
Opened 60 new stores in Poland using HFC-based systems, despite their previous commitment to go HFC-free in all new stores.

## Aldi

### Good

Has rolled out high efficiency variable speed compressor HC freezer cabinets since 2007, now has 5145 cabinets in use.  
Doesn't use AC in stores.

### Bad

No HFC-free commitment made yet.  
High leakage rates, reflected in relatively high direct emissions per store.  
Has 7 transport refrigeration systems still running on HCFCs.  
Has rejected doors on fridges based on Aldi Germany's trials.

## Iceland

### Good

Have made significant in-store energy savings.  
Reduced direct emissions per store by 179%.  
Trialling HFC-free equipment.  
Use of free cooling means stores don't need AC.

### Bad

No HFC-free commitment made yet.  
Remain far behind their competitors in transition away from HFCs.

## Mercator, Slovenia

### Good

Some use of HFC-free cooling in distribution centres.  
Is planning installation of an HFC-CO<sub>2</sub> hybrid system.

### Bad

No use of climate-friendly refrigeration in stores.  
Has not articulated any HFC phase-out plans.  
Needs to work on rolling out chiller doors, as yet only 0.03% of stores have them fitted.  
Incorrectly claims HFC-free options are not viable in distribution centres.

## Alpha Beta, Greece

### Good

Use of HFC-free cooling in two distribution centres.  
Has fitted 25% stores with chiller doors, rolling out to entire estate.  
Uses waste heat for hot water production.

### Bad

Just one store fitted with CO<sub>2</sub> for frozen food.  
Ongoing use of HCFCs.  
High direct emissions per store, suggesting high



# UK Case studies

- Waitrose:
  - Total HFC phase out by 2020
  - 67 HFC-free stores representing 25% of estate
  - Energy efficiency gains
- Aldi:
  - No HFC-free commitment
  - BUT: 5,145 HC freezer units
  - ~2 million kWh/year energy savings
  - No AC in stores
- The Co-op:
  - HFC phase-out by 2030, with all new stores HFC-free
  - Improved EE saved it £1,000/hour in 2011
  - Major roll out of doors on fridges
  - Lessons from new HQ in Manchester



# European Case studies

- Migros & Coop Switzerland
  - Committed to going HFC-free in all new stores
  - Energy efficiency gains: Coop CH estimates 25% reduction on BAU
- Carrefour
  - Commitment to go HFC-free: roll out starts in December 2013
  - Very high leakage (41% of carbon footprint)
  - French retailers' commitment on doors on fridges
  - Calculates operational cost savings from HFC-free systems ~15%
- Royal Ahold
  - Commitment to go HFC-free
  - Hybrids as interim/piloting HFC-free
  - Chiller doors in 70% of stores



# A few quotes

- *“The essential point is optimising the total energy use in stores. Optimised systems consume less energy and produce less heat. In general, optimised CO2 systems are more energy efficient” (Coop Norge)*
- *“We see no negative impact for the use of natural refrigerants. Waitrose and our supply chain continue to embrace natural refrigerants and do not feel that there are any blocks to moving forward” (Waitrose)*



# Recommendations

- ✓ Retailers must immediately commit to going HFC-free in all new stores and refurbishments with the aim of achieving an industry-wide phase out of HFCs by 2020
- ✓ The European Union should ban the use of HFCs in all new commercial refrigeration equipment by 2020
- ✓ Retailers should pay more attention to the development of HFC-free cooling in transport refrigeration and air-conditioning
- ✓ Retailers should agree to fit doors on all chilled food as standard



# What have we learnt?

- Holistic approach is key (system design, complementary measures)
- The retail sector is diverse: no ‘one-size fits all’ solution for refrigeration
- European retailers are ready for change
- In fact, they are at the forefront of efforts to move away from HFC-based refrigeration
- However: there are leaders and laggards
- Some general challenges remain: food transport refrigeration

# Looking to the future



- What we need: legislation to level the playing field in the EU (F-gas Regulation)
- Retailers must extend their commitment to HFC-free refrigeration beyond Europe
- Challenges can be met if retailers are willing to rise to them!



# Thank you



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