

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 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 100% free refrigeration in all new stores.
Already using 100% free refrigeration in all old stores.
Rolling out doors in effort to all new stores and refurbishments.

Bad
Still believe overhead cap on 100% free refrigeration.
However, they will be opening a new 100% free store using natural refrigeration in 2016.
Scarcely survey, information missing on door and cabinet emissions. Types of cabinet and door controls not defined either.

Coop Switzerland

Good
100% free refrigeration in all new stores and refurbishments since 2010.
100% doors running on 100% free refrigeration.

Bad
Only using American style flat cabinets, others roll out to all other food.
Scarcely survey, information missing on types of systems used across sections and leakage rates.

Ahold, Netherlands

Good
Part of top commitment.
Has approximately 10% of its stores - about 10% stores - running on hybrid CO2/HFC technology as an interim step.
Rolling out roller doors, now at 10% of stores.
Consumers low leakage rates.
Rolling 100% free refrigeration.

Bad
Needs to speed up roll out of 100% free refrigeration with only one 100% free store by 2016.

Metro, Germany

Good
Part of top commitment.
Using 100% CO2 hybrid and rolling 100% free cooling.
100% doors in almost all closed food.
Has no door reductions in rollout plans.
100% free cooling in 7 distribution centers.

Bad
Roll door emissions. For example, the cabinet reports a rolling refrigerant, with rate of 16 metric tons CO2e. And the cabinet itself also emissions.
Scarcely survey, information missing on types of cabinet and door controls.
Needs improvement for its 2016 100% free commitment. Needs to speed up roll out 100% free stores.

Delhaize, Belgium

Good
Part of top commitment.
10% of stores have been fitted to closed food, rolling through entire store.
Has saved over 10,000 tonnes CO2e in past 3 years.
Reduced leakage rates from 14.4% in 2010 to 10.1% in 2014.
17 stores running on 100% CO2 hybrid technology as an interim step, planning roll out of 18 per year.
100% free cooling in 10 distribution centers.

Bad
Scarcely survey, information missing on types of systems used across sections.
Needs to speed up roll out of 100% free systems.

Waitrose

Good
Committed to total 100% phase out by 2016.
Has 100% of 100% free stores representing 20% of free store units.
Four months have reduced leakage from a 10% per store to 5.4.
Recommends roll out from roller cabinets to reduce need for AC.

Bad
Lack of investment in transport refrigeration.

Tesco

Good
Rollout emissions down 22% in 2014. 100% free refrigeration is significant element of commitment to CO2 reduction.
Have an 100% free doors rollout plan from 2015 to 2016.
Rolling out natural ventilation doors to reduce need for AC.
Rolling out doors on fridges in smaller format stores.

Bad
Investment in roll out of 100% free refrigeration is disappointing with just one new store this year. Rolling out natural ventilation doors to reduce need for AC.
Scarcely survey, information missing on types of cabinet and door controls.
Needs to speed up roll out of 100% free stores.

Aldi

Good
Has rolled out high efficiency variable speed compressor for fridges cabinets since 2007. Now has 100% cabinets in use.
Doesn't use AC in stores.

Bad
No 100% free commitment made yet.
High leakage rates, reflected in relatively high door emissions per store.
Has 7 transport refrigeration systems, still running on HCFC.
Has reported doors on fridges based on 100% between's trials.

Iceland

Good
Have made significant in-store energy savings.
Reduced direct emissions per store by 10%.
Rolling 100% free equipment.
Use of free cooling means stores don't need AC.

Bad
No 100% free commitment made yet.
Refrain for behind their competitors in transition away from HCFC.

Mercator, Slovenia

Good
Same size of 100% free cooling in distribution centers, is planning roll out of an 100% CO2 hybrid system.

Bad
No use of climate friendly refrigeration or doors.
Has not announced any 100% phase out plans.
Needs to work on rolling out roller doors, as yet only 10% of stores have them fitted.
Scarcely survey, information missing on types of cabinet and door controls.
Needs to speed up roll out 100% free stores.

Alpha Beta, Greece

Good
Use of 100% free cooling in two distribution centers.
Has fitted 20% stores with roller doors, rolling out to entire stores.
Does waste food for hot water production.

Bad
Just one store fitted with CO2 for frozen food.
Impeding use of HCFCs.
Has 100% free equipment on store, supporting local.



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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