



Atmosphere 2012

Delhaize Group: an international food retailer operating on 3 continents and in 11 countries

Period ended December 31, 2011

United States:

- Stores: 1 650
- Revenues: USD 19.2 billion (EUR 13.8 billion)

Belgium, Luxembourg:

- Stores: 821
- Revenues: EUR 4.8 billion

Southeastern Europe & Asia:

- Stores: 937 of which:
 - Greece: 251
 - Romania: 105
 - Serbia: 366
 - Bulgaria: 42
 - Bosnia & Herzegovina: 44
 - Albania: 18
 - Montenegro: 22
 - Indonesia: 89
- Revenues: EUR 2.5 billion

Delhaize Group:

- Stores: 3 408
- Revenues: EUR 21.1 billion
- Employees: 160 000

Reducing GHG emission is part of our sustainability strategy – our commitments

1. Group 20% reduction in CO₂eq./sqm sales area (against 2008 baseline year) – 2020
2. Switch refrigerants from ODS to ozone friendly HFCs or other refrigerants, while minimizing GWP.
3. Begin phasing-out HFC as of 2015 and replace them with natural alternatives

Natural Refrigeration – Progress to date

Over the past several years, Delhaize group has piloted various refrigeration systems that use natural refrigerants

C02 : - C02 cascade is now the standard practice for stores in Belgium with 18 installations and 6 in Luxemburg;
- 11 affiliated stores have installed trans-critical C02 systems

Hydrocarbons : small self-contained frozen food displays that use propane (R290) have been installed in Romania (200 units)

Ammonia : - NH3 and C02 are standard for warehouse refrigeration systems.
- 2 new stores in Luxemburg include NH3 and NH3/C02 hybrid system pilots.

Natural Refrigeration – Plan for next 2-5 years

Delhaize Group is committed to using natural refrigerants as **an important lever to reduce GHG emissions**. Trans-critical CO₂ seems to be the most promising natural refrigerant technology, at least for the northern half of our retail locations

Delhaize Group is committed to increasing the number of natural refrigerant systems as long as they are **cost-effective**. To achieve this they have to :

- Improve the life-cycle economics to a point equal to or better than the standard solution;
- Investigate system enhancements (e.g. Heat reclaim, hot gas defrost,...) to enhance life-cycle economics;
- Work with the supplier community to improve life-cycle economics and ensure adequate training and operational safety
- Be willing to share knowledge and offer case studies to help generate more orders.

Delhaize Group has identified few **barriers** :

- Inadequate knowledge : interest in having more case studies with technical details.
- Regulation
- Economics : for stores that typically have very basic systems, this can be a significant barrier
- Warm climates : trans-critical CO₂ has not yet proven to be cost-effective in these climates
- Training : maintenance of CO₂ refrigeration systems requires special training due to the refrigerant properties and the more complex controls.

determination | integrity | courage | humility | humor

Thank you