

# Natural Refrigerants - Solutions for Europe



**Future Trends in Sustainable Cooling**  
**Nürnberg, 10 October 2012**

**Nina Masson, Head of Market Research**

**shecco**

# about shecco



- ◉ marketing & communications expert
- ◉ focus: climate friendly technologies faster to market
- ◉ expertise: HVAC&R & transport sectors
  - ◉ natural refrigerants: CO<sub>2</sub>, NH<sub>3</sub> HC, H<sub>2</sub>O, Air
- ◉ areas:
  - ◉ industry platforms
  - ◉ ATMOsphere workshops
  - ◉ market research / publications
  - ◉ special projects



ammonia  
everything natural



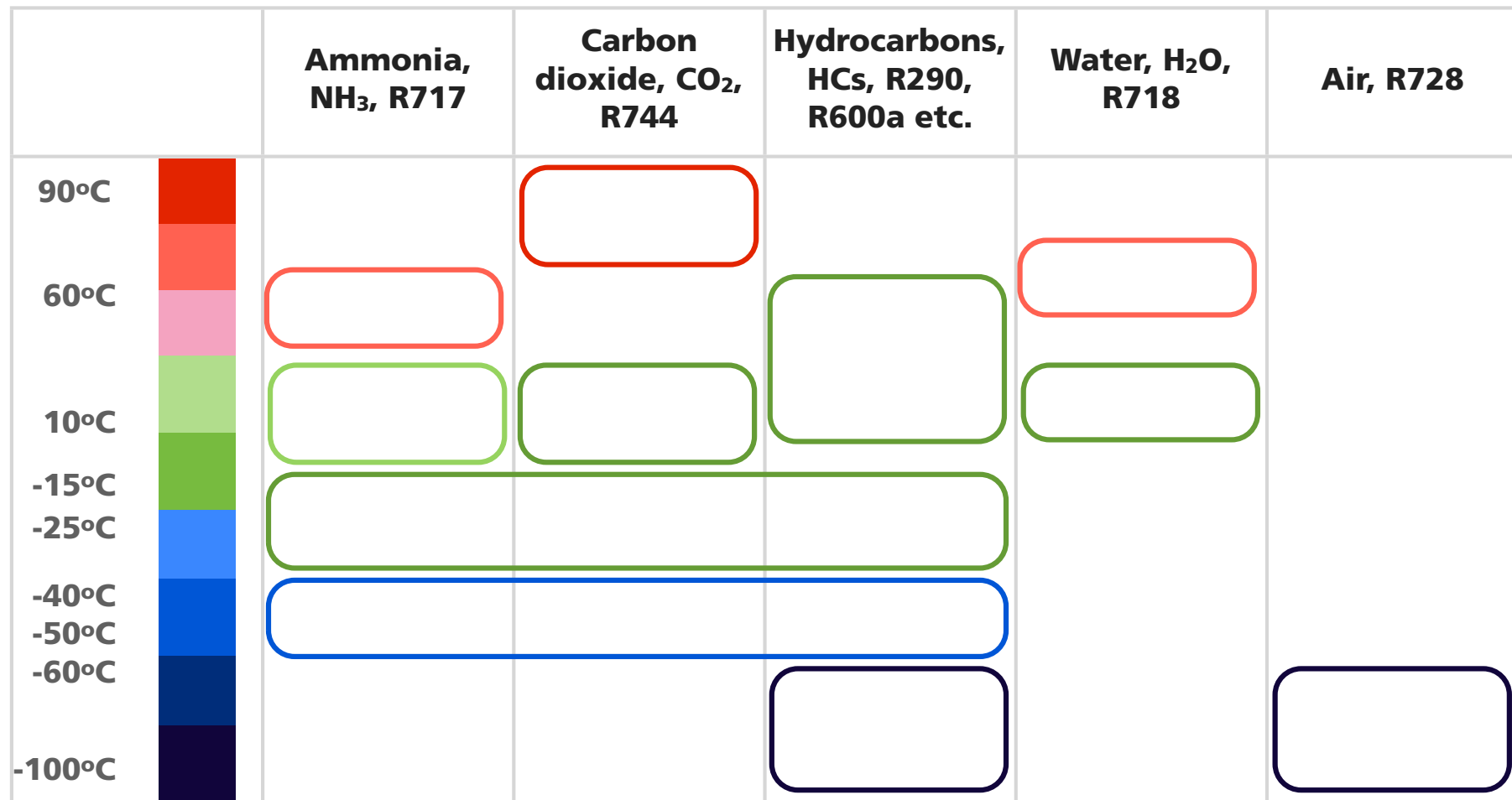
hydrocarbons  
everything natural



# technology: the application potential...



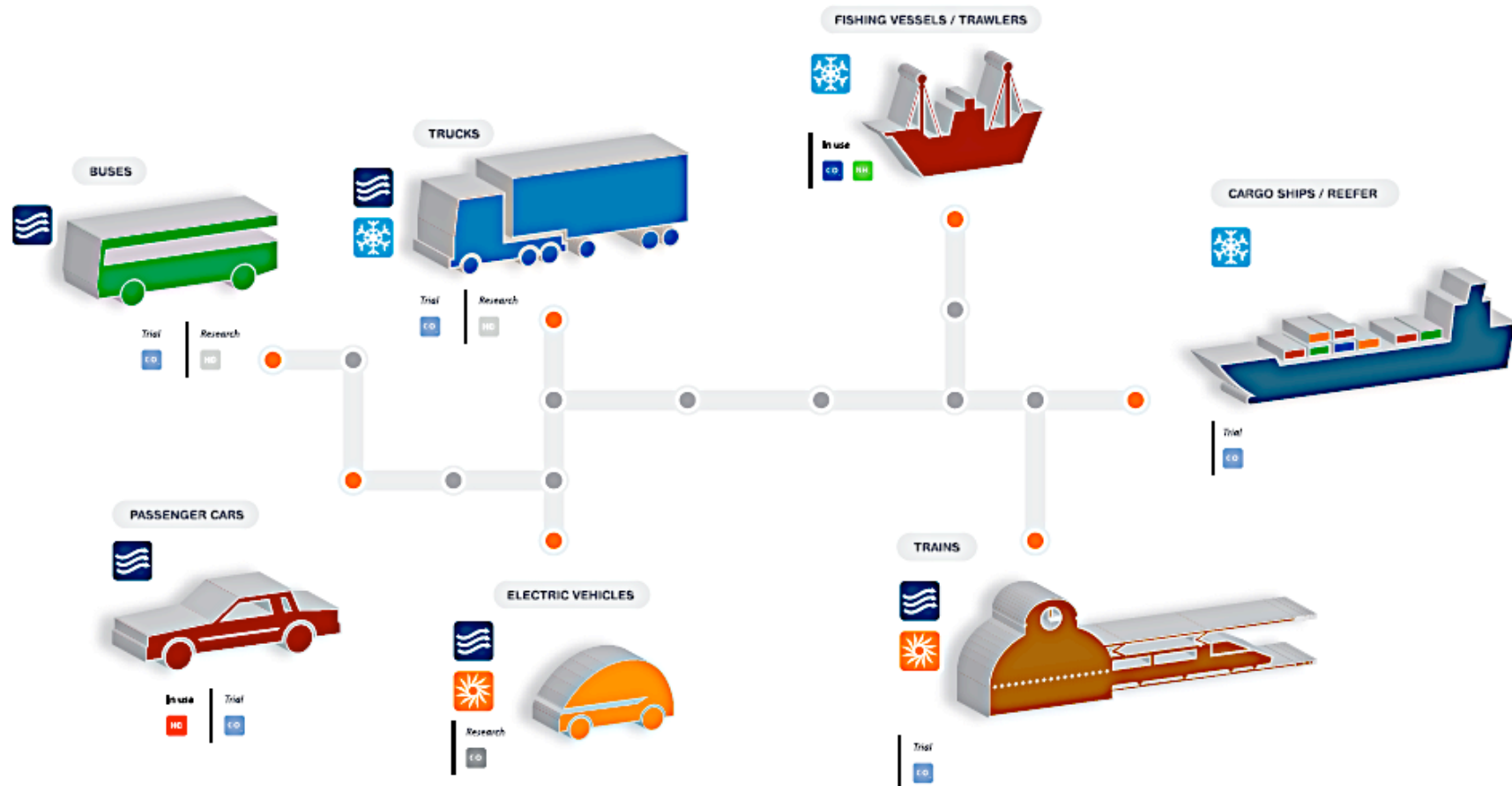
**Across the whole range of heating, cooling and refrigeration needs the “Natural Five” can cover all applications**





# ... in transport

## TRANSPORT APPLICATIONS





# ... in buildings

## CITY & BUILDINGS

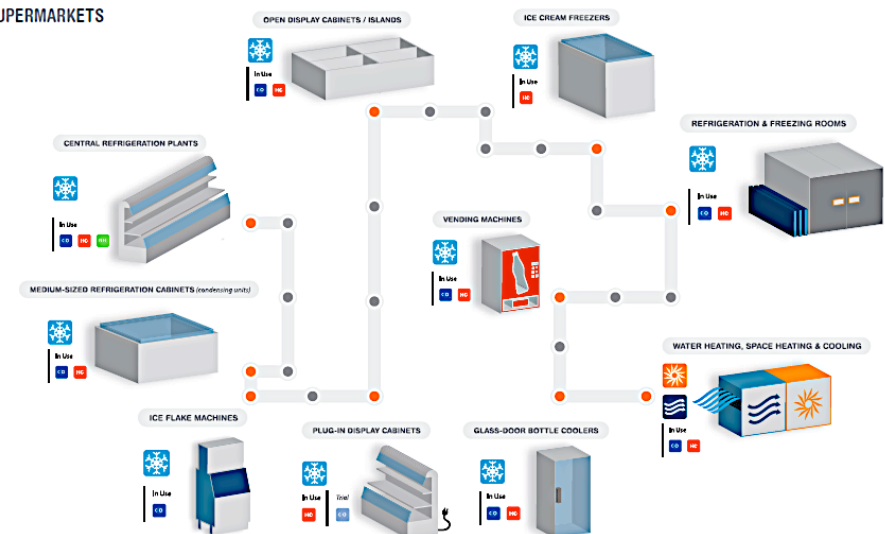


# ... in the food retail chain

## THE FOOD CHAIN



## SUPERMARKETS



# market: HFC-free in the world



**400 million HC  
fridges**

**1.2 million HC ice cream  
freezers (Unilever)**

**20 million cars with  
HC air-conditioning**

**EU: 90%  
ammonia  
industrial  
refrigeration**



**EU: 16 CO<sub>2</sub>  
Heat Pump  
manufacturers**

**approx. 750,000 HFC-  
free vending machines  
(Coke + Pepsi)**

**the potential for HC  
chillers alone was  
estimated at 4 billion USD**



# “GUIDE to Natural Refrigerants”

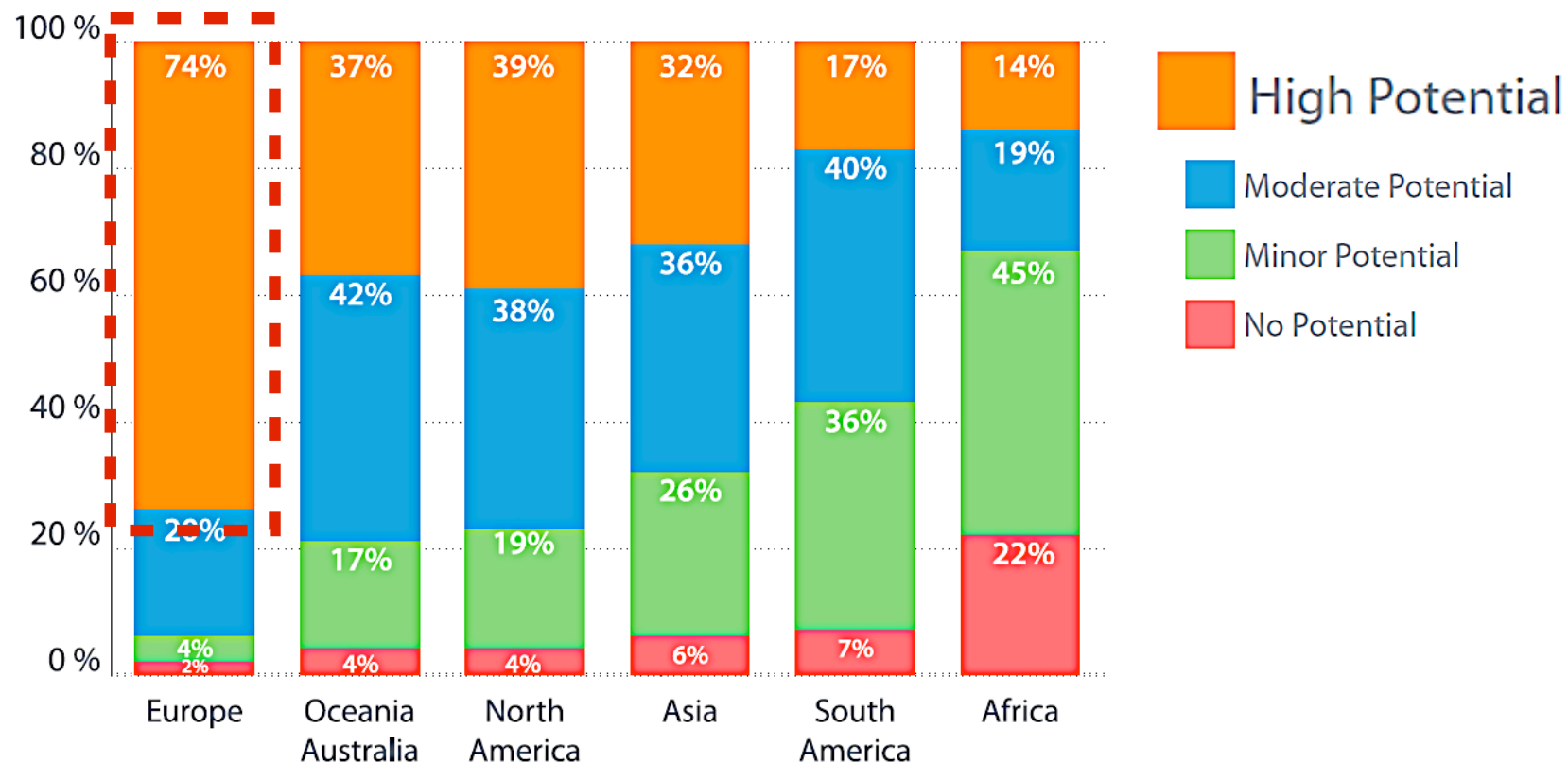


- ◎ **Aim:** a series of free publications to illustrate + quantify the global market potential for NR
- ◎ **Aim:** outline industry's expectations for the period 2012-2020 for NR (CO<sub>2</sub>, NH<sub>3</sub> & HCs)
- ◎ **Aim:** show barriers & opportunities for NR, analyse the political situation in the EU, give an overview of who is active in NR in Europe (industry directory)
- ◎ **Target group:** new entrants and experts
- ◎ **Focus:** 1st edition on the European Union

# market: europe's leadership potential

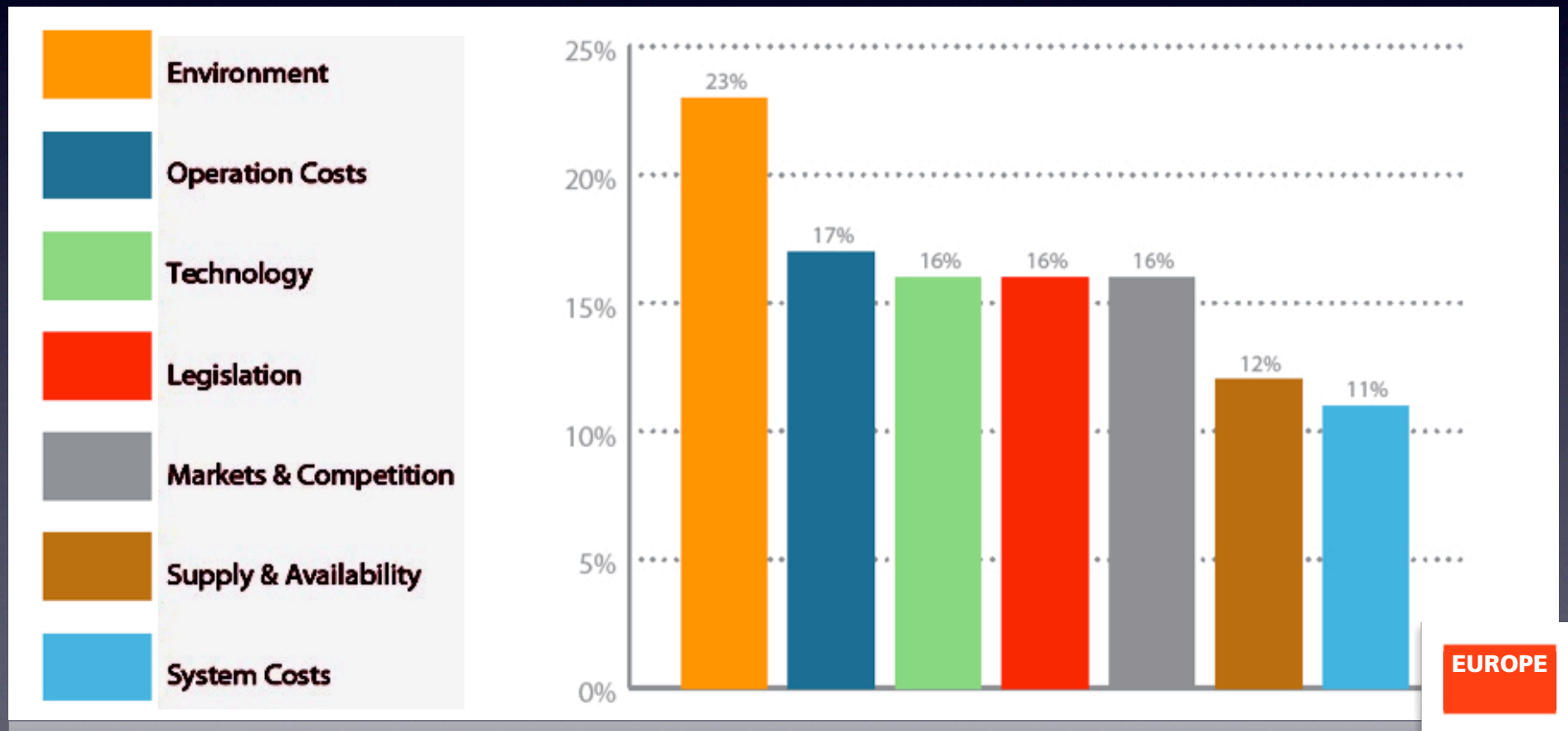


## Europe has the greatest immediate adoption potential for Natural Refrigerants



# NR strengths in europe

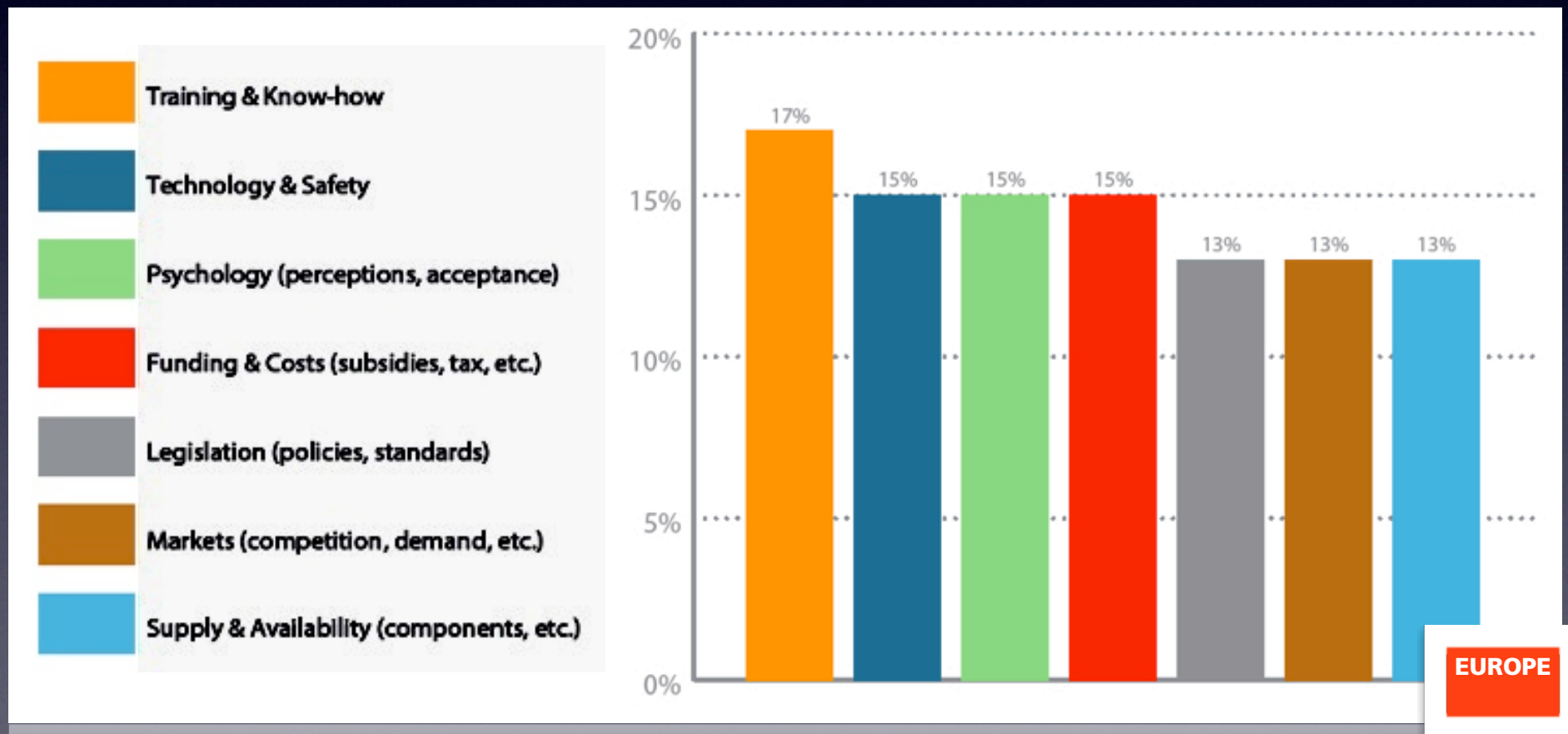
- 81% say environmental benefits, incl. direct and indirect emissions reductions + energy savings
- life cycle costs (operation, energy efficiency, maintenance) major benefit





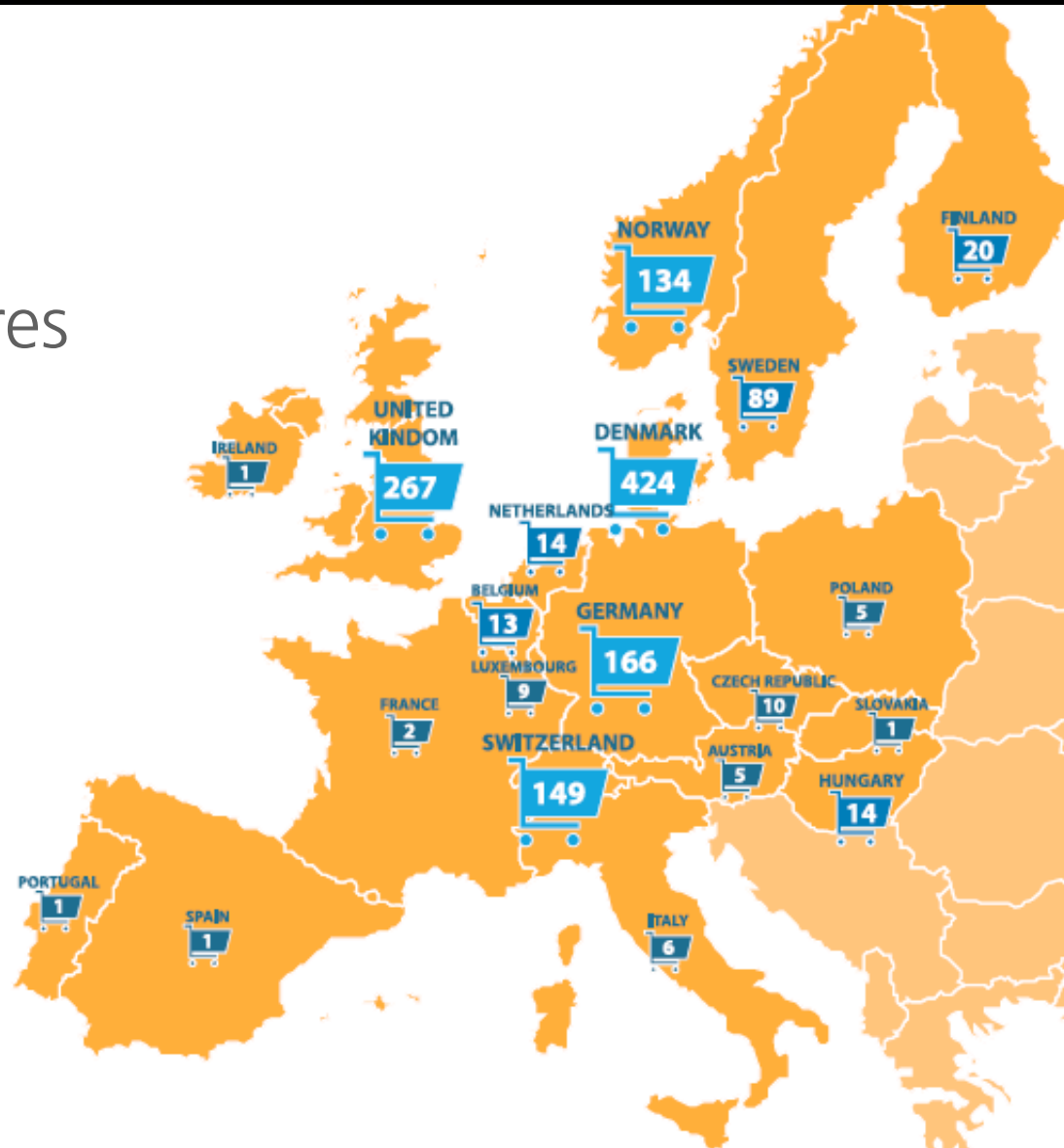
# NR weaknesses in europe

- 58% say training & know-how is a “strong” to “very strong” barrier
- technology & safety, psychology second and third strongest barrier



# transcritical CO<sub>2</sub> supermarkets 2011

**verified:** 1,331  
transcritical CO<sub>2</sub> stores  
by end-2011 for  
Europe

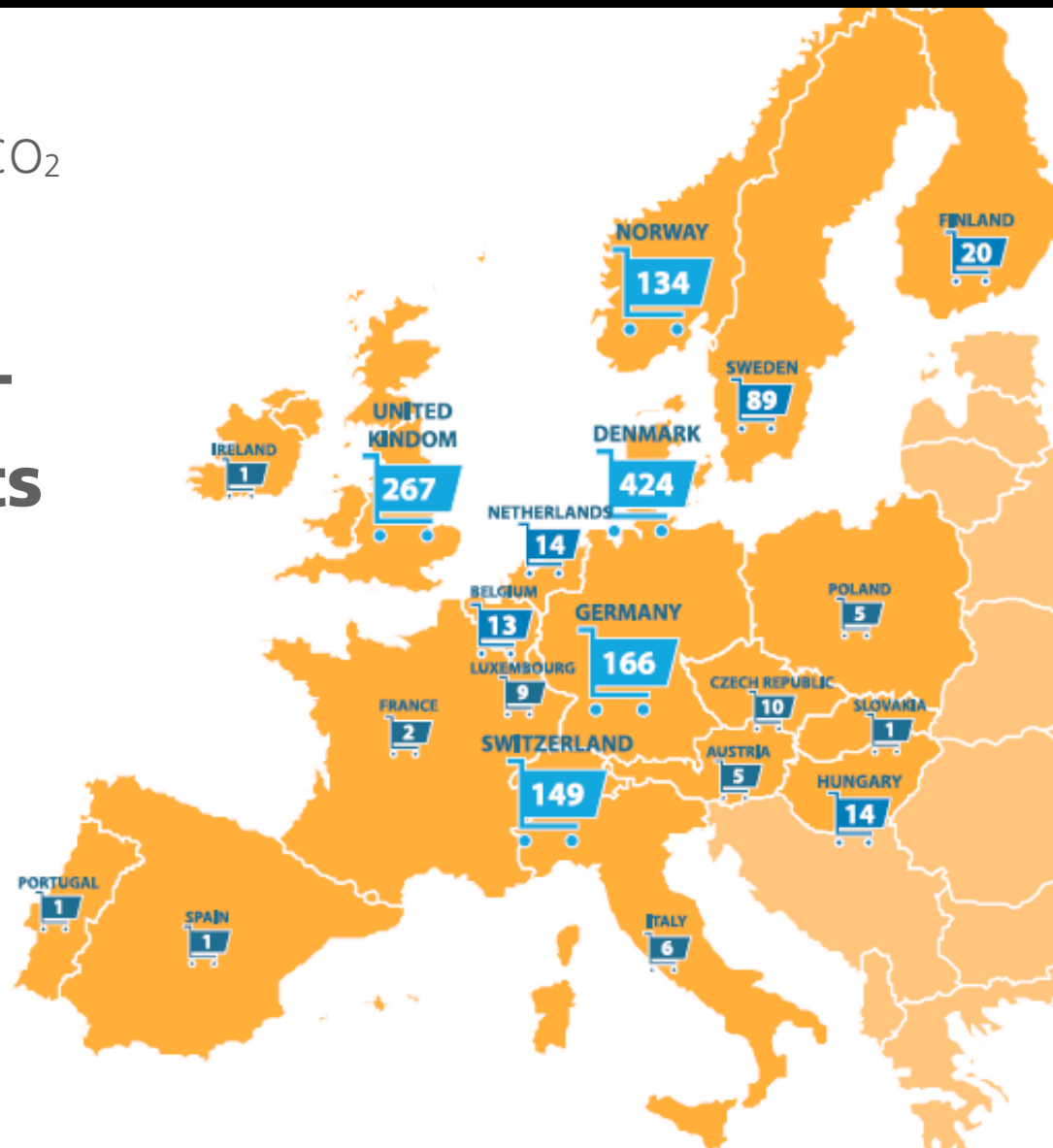


# transcritical CO<sub>2</sub> supermarkets 2012



**verified:** 1,331 transcritical CO<sub>2</sub> stores by end-2011 for Europe

**estimated: 1600+ CO<sub>2</sub> supermarkets by end-2012**





# natural refrigerants supermarkets



verified: 1,331 transcritical CO<sub>2</sub> stores by  
end-2011 for Europe

estimated: 1600+ CO<sub>2</sub> supermarkets by  
end-2012

**estimated: 3000+  
supermarkets using CO<sub>2</sub>,  
ammonia and/or  
hydrocarbons  
refrigeration**



# market potential for Europe

a minimum of  
**34 food retailers**  
use natural  
refrigerants



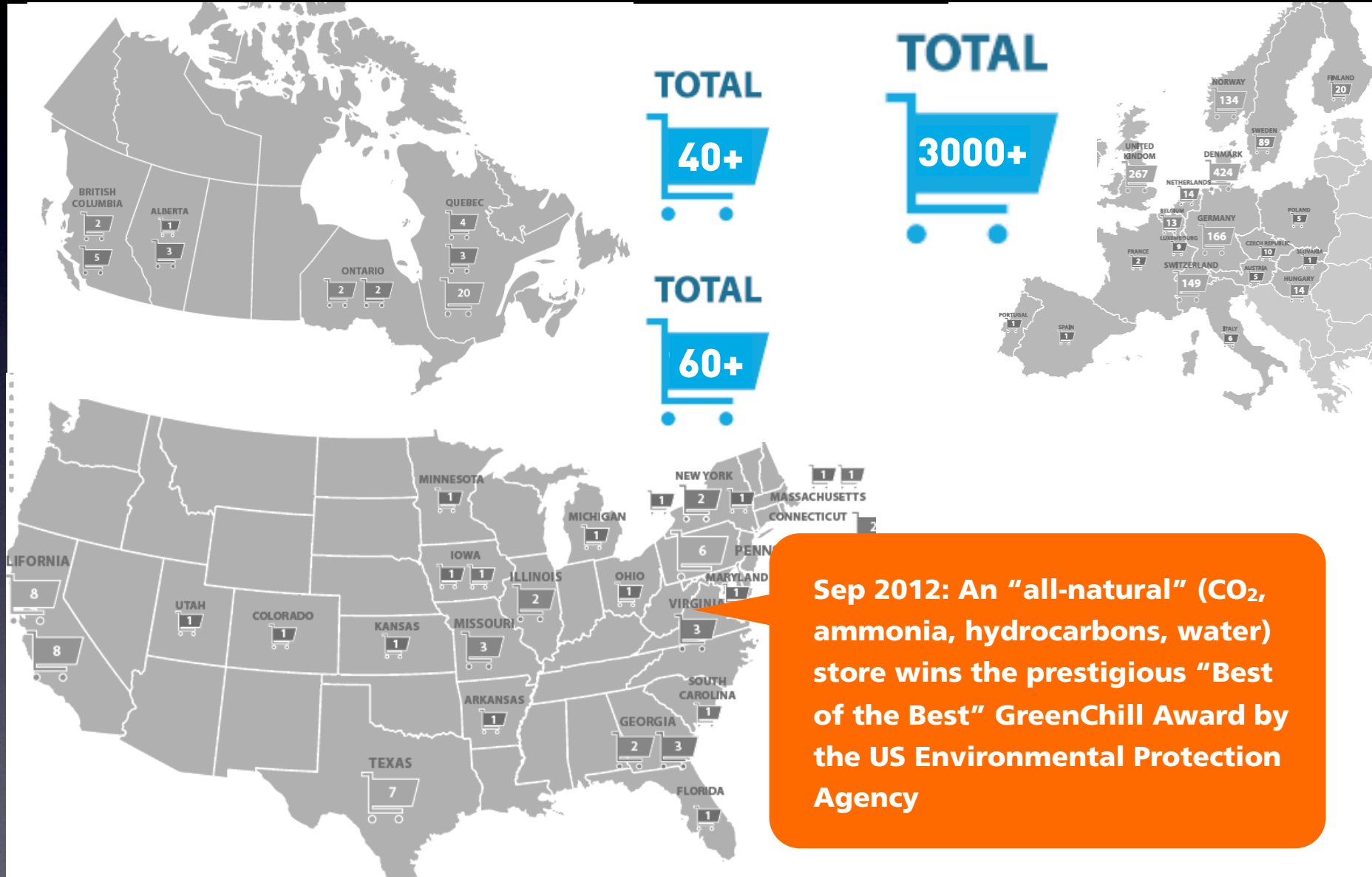
# market potential for Europe

... with the  
potential of  
introducing  
the technology  
EU-wide





# natural refrigerant supermarkets



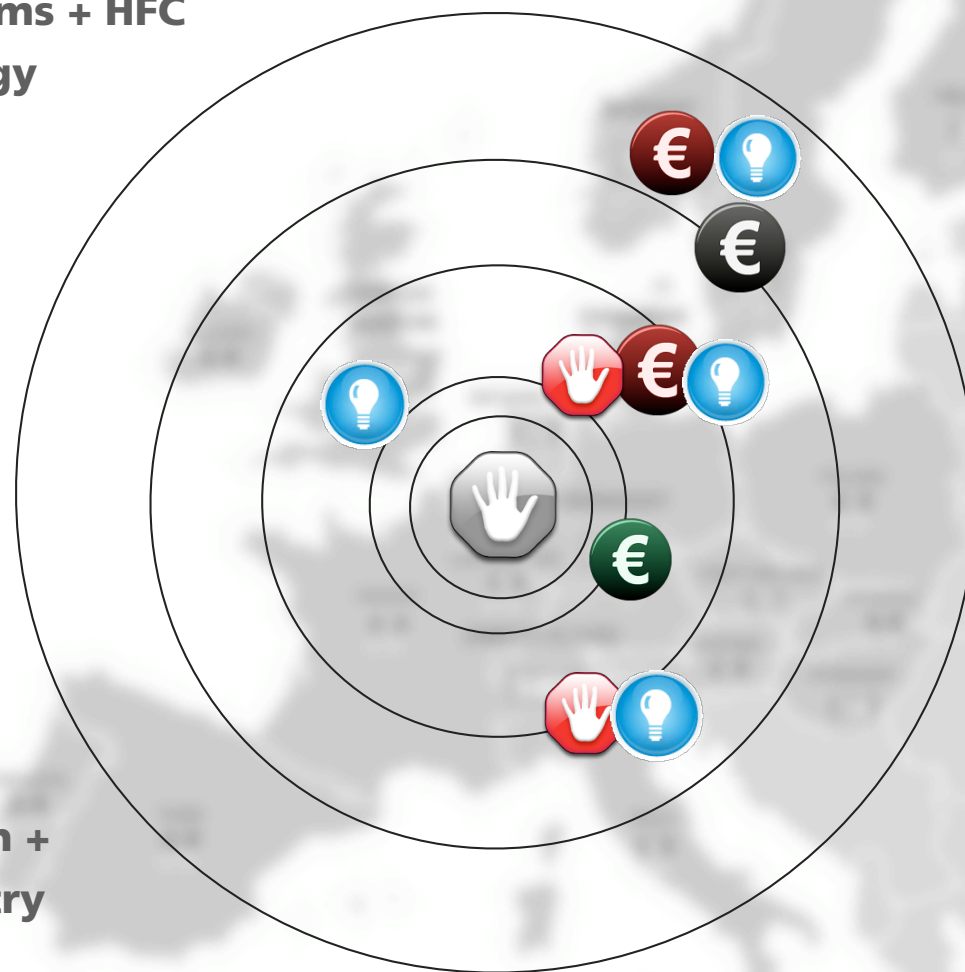
# policy: how to get there?

**Denmark: HFC bans in new systems + HFC tax + active support of technology development**

**Germany: federal incentive scheme to cover 25% of investment cost for HFC-free commercial refrigeration**

**UK: voluntary industry commitment (business sense)**

**Switzerland: tight HFC regulation + voluntary building label + industry commitment**





# GUIDEs: published & upcoming



## **GUIDE Europe**

**Feb 2012**



## **GUIDE North America**

**launch:  
Nov 2012**

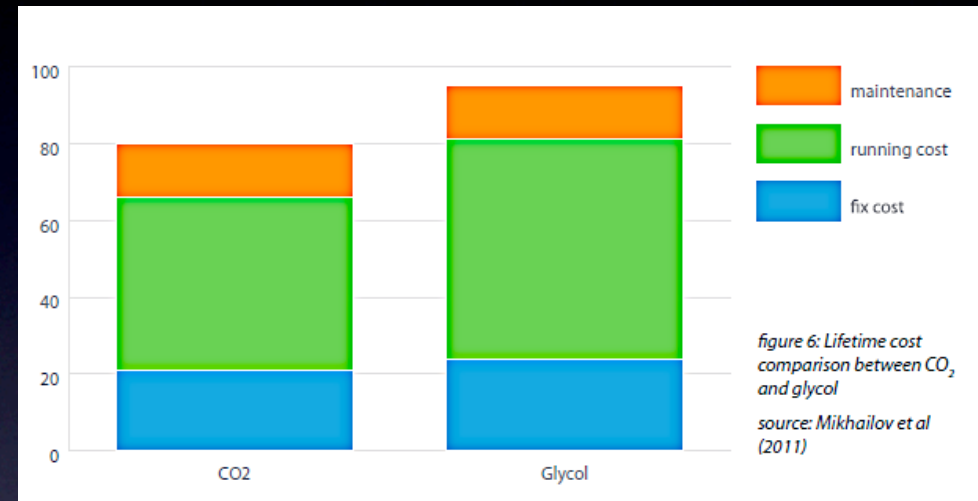
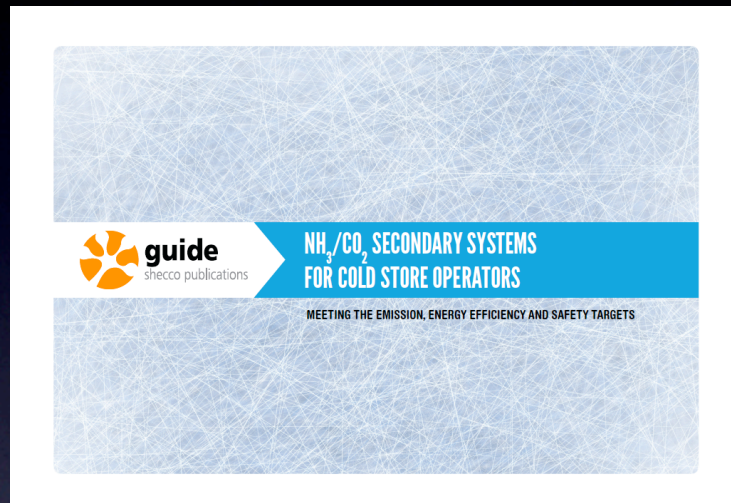


## **GUIDEs 2013:**

- ◎ **Europe 2nd edition**
- ◎ **Japan**
- ◎ **China**

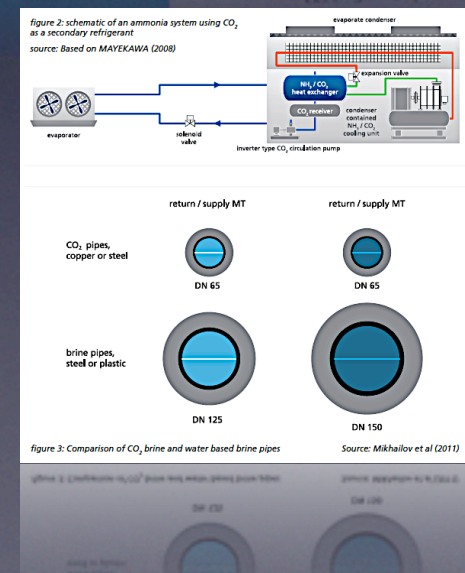


# GUIDE to NH<sub>3</sub>-CO<sub>2</sub> Secondary Systems for Cold Storage Operators

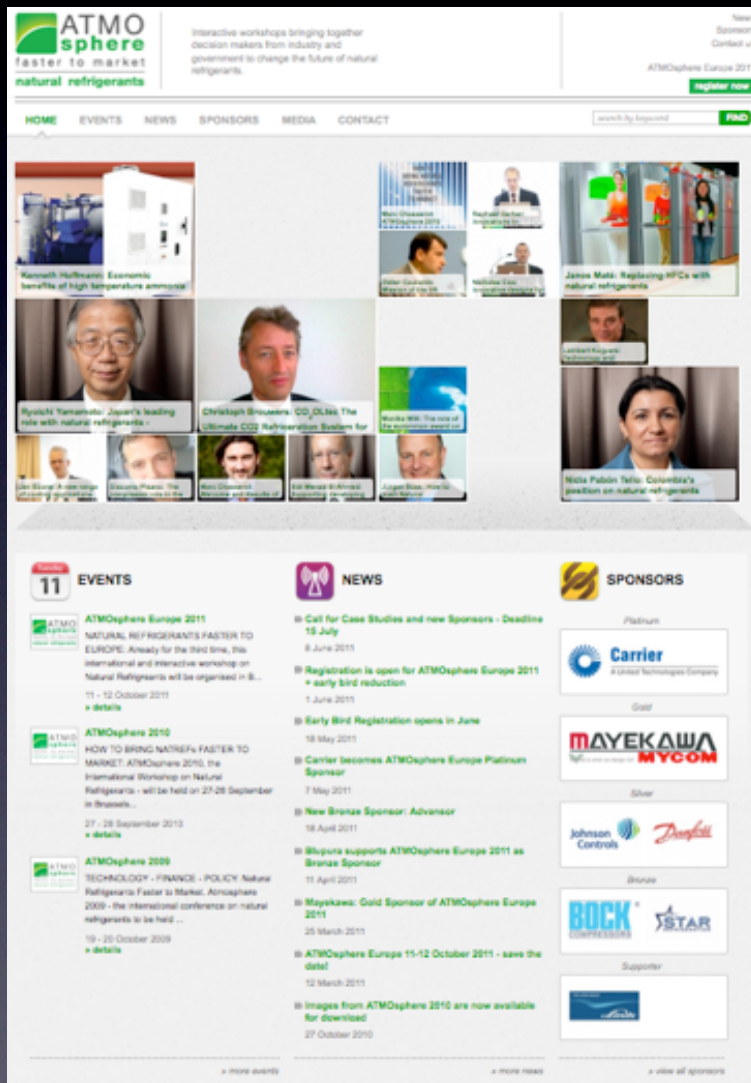


## Content:

- secondary NR systems in industrial refrigeration
- technology, safety, costs, best-practice guide, case studies



# ATMOsphere Europe 2012



- Brussels, 5-7 November 2012
- 4th interactive, international workshop in Europe
- policy & industry experts
- 200+ participants
- keynote speech by Connie Hedegaard, European Commissioner for Climate Action
- visit: [www.ATMO.org](http://www.ATMO.org)



# important links & contacts



## **industry platforms:**

[www.R744.com](http://www.R744.com)

[www.ammonia21.com](http://www.ammonia21.com)

[www.hydrocarbons21.com](http://www.hydrocarbons21.com)

[www.R718.com](http://www.R718.com)

## **events:**

[www.ATMO.org](http://www.ATMO.org)

## **market research:**

<http://guide.shecco.com>

## **contact details:**

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