

Natural Refrigerants - Innovation & Ambition in Europe



Brussels, 7 November 2012

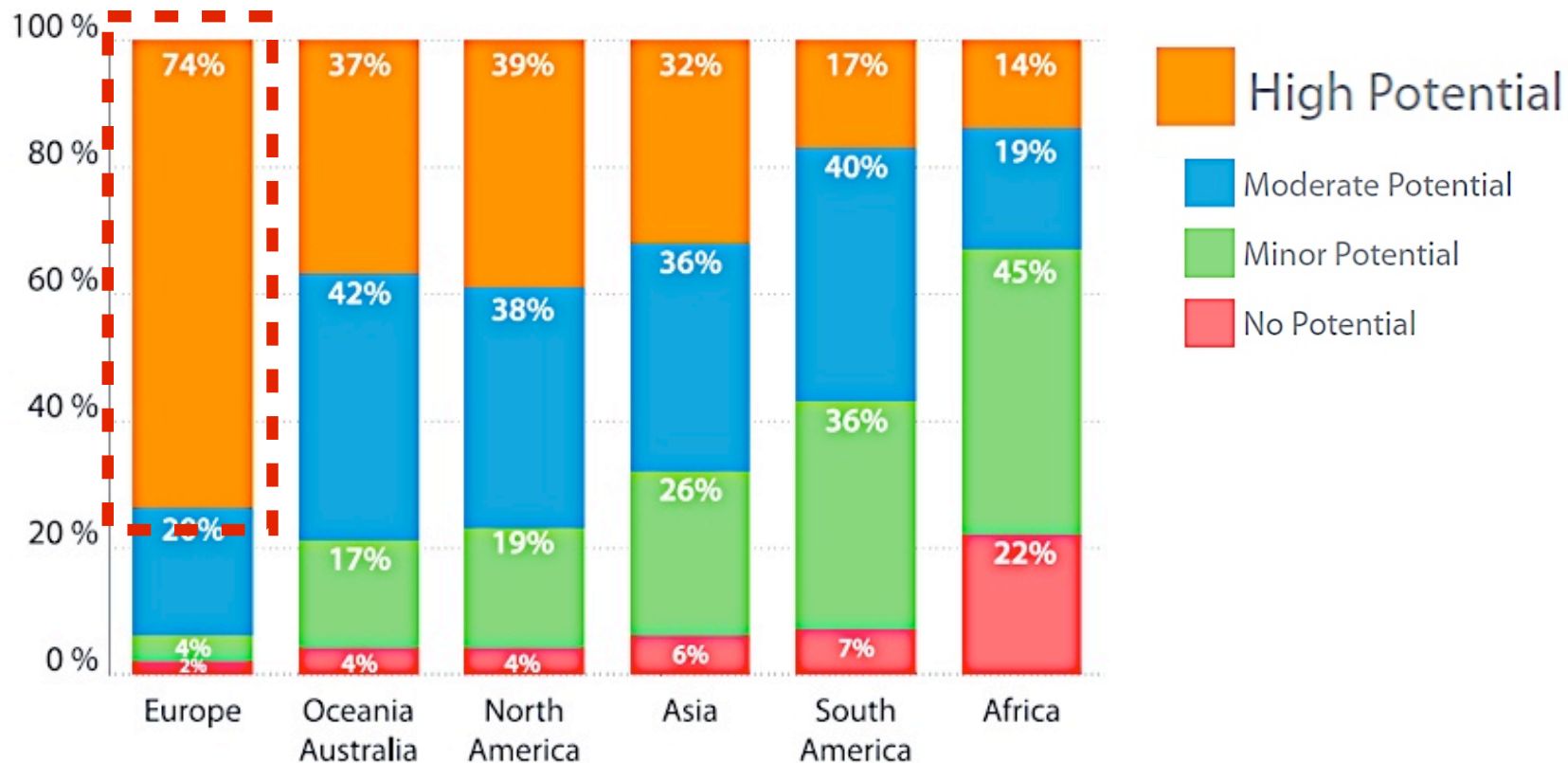
Nina Masson, Head of Market Research

shecco

market: europe's leadership potential



Europe has the greatest immediate adoption potential for Natural Refrigerants



starting point: industry survey europe / world



- the **world's largest industry survey** to illustrate + quantify the market potential of natural working fluids
- period: March-September 2011
- 1,254 replies analysed** - 667 from Europe

THE PULSE - Global HVAC&R Industry Survey on Natural Refrigerants

1. Personal Details

This HVAC&R Industry survey is the first one about the global market for Natural Refrigerants (carbon dioxide, ammonia, hydrocarbons) in different applications. The results will be published in a "guide to natural refrigerants" in Autumn 2011.

WHY PARTICIPATE?

If your organisation is already active in Natural Refrigerants you will receive a FREE DIRECTORY ENTRY in the "guide". For all participants, we will share initial SURVEY RESULTS with you.

It will take you 10-15 minutes to fill in the survey, depending on the level of detail you provide. We will keep your information confidential at all times. Thank you for your time!

1. Organisation LOCATION - Continent:

- Europe
- North America
- South America
- Oceania/Australia
- Asia
- Africa

2. Organisation LOCATION - Country:

3. Organisation SIZE (employees):

- Small (1-99)
- Medium (100-499)
- Large (500+)

4. Organisation TYPE (please select all that apply):

- Employer
- Manufacturer
- Supplier
- Engineering/Contractor
- Other (please specify)
- Consultancy/Marketing
- Training/Research
- Association

5. Field of ACTIVITY (please select all that apply):

- Heating - Residential & Building
- Heating - Industrial & Commercial
- Refrigeration - Domestic
- Refrigeration - Commercial
- Other (please specify)
- Refrigeration - Industrial
- Refrigeration - Transport
- Air Conditioning - Stationary
- Air Conditioning - Mobile

6. Which ROUTES TO MARKET do you use for your products/services? (please select all that apply):

- Direct Sales B2B
- Direct Sales B2C
- Teleshops / Online Sales B2B
- Teleshops / Online Sales B2C
- National Sales Offices
- Other (please specify)
- Importer / Distributor
- Specialist Wholesaler
- General Wholesaler / Retailer
- Installers / Contractors
- None

EU / WORLD

starting point: industry survey north america



- **specific survey to the North American HVAC&R industry: Canada, Mexico, USA**
- period: March-Oct 2012
- **545 replies analysed**

guide
shecco publications

North American HVAC&R Industry and End-User Survey about Natural Refrigerants - 2012

1. INTRODUCTION [Exit this survey](#)

Take part in this industry survey and enhance your understanding of the North American heating, air-conditioning and refrigeration (HVAC&R) market for the so-called "Natural Refrigerants" (carbon dioxide, ammonia, hydrocarbons, water, air). Survey results will be published in the "GUIDE 2012: Natural Refrigerants - North America's Market Potential" in Summer 2012.

WHY PARTICIPATE?

Survey participants will receive the RESULTS FREE, and organizations already active in Natural Refrigerants can receive a FREE DIRECTORY ENTRY in the GUIDE.

This survey is for INDUSTRY EXPERTS and commercial/Industrial END-USERS with operations in CANADA, MEXICO and the USA. It will take you around 15 minutes to fill in the survey, depending on the level of detail you provide. There is a maximum of 23 questions. We will keep your information confidential at all times. Thank you for your time!

***1. Organization LOCATION:**

Canada Mexico United States of America

***2. Organization SIZE (employees):**

Small (1-99) Medium (100-499) Large (500+)

***3. Organization TYPE (please select all that apply):**

End-User Engineering / Contractor Association
 System Manufacturer Consultancy / Marketing
 Component Supplier Training / Research

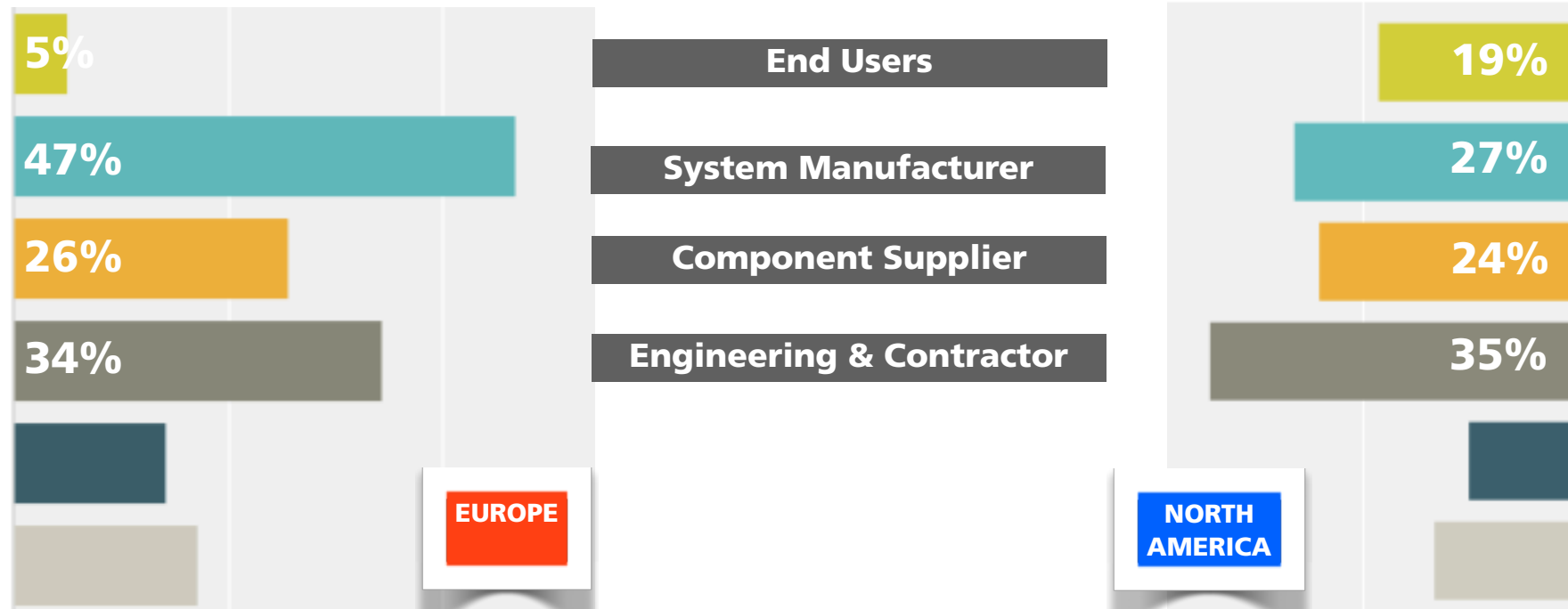
***4. Organization Fields of ACTIVITY (please select all that apply):**

Heating - Residential Refrigeration - Industrial
 Heating - Industrial & Commercial Refrigeration - Transport
 Refrigeration - Domestic Air Conditioning - Residential
 Refrigeration - Light-Commercial Air Conditioning - Industrial & Commercial
 Refrigeration - Commercial Air Conditioning - Mobile

10%

NORTH AMERICA

respondents: activity type

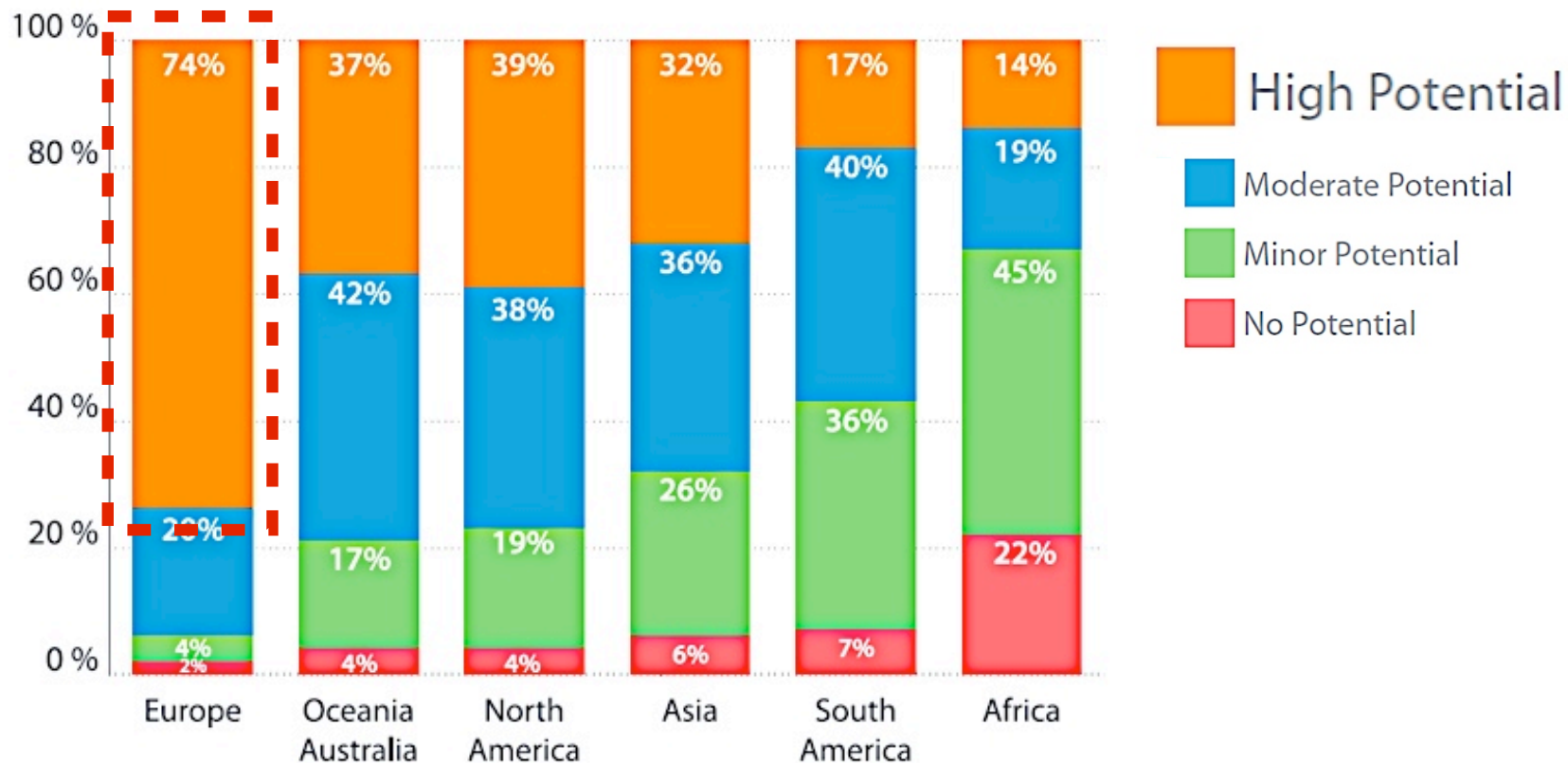


- ▶ **Europe: nearly half represent system manufacturers; 17% training & research**
- ▶ **North America: mostly active in engineering & contracting, and system manufacturing; 14% in training & research**
- ▶ **largest differences: end-user response rate; system manufacturers**

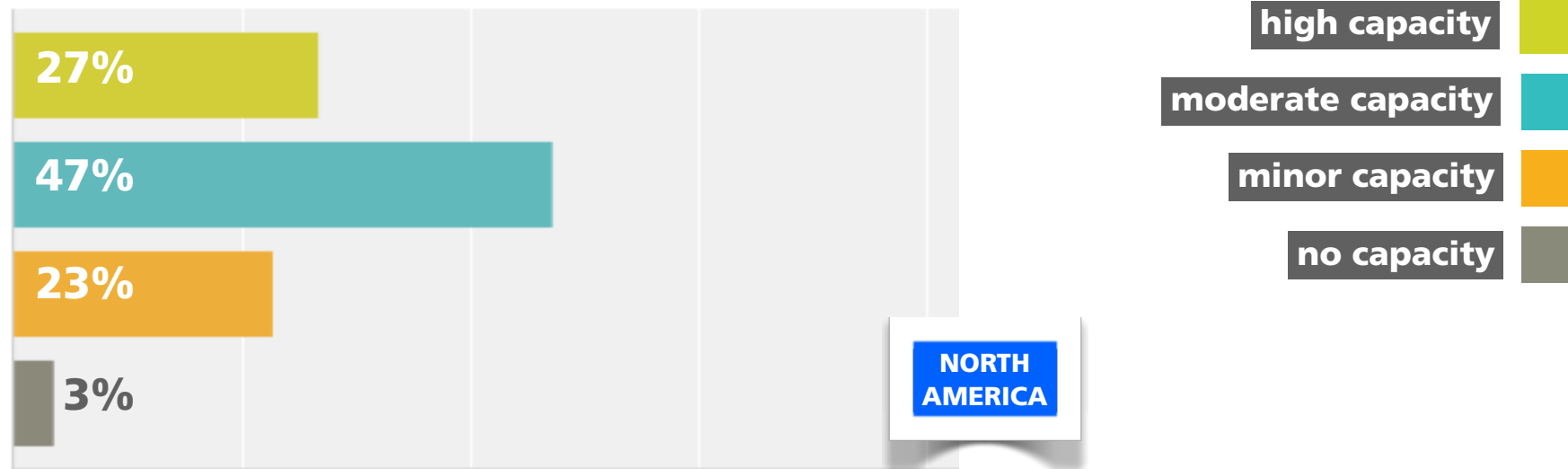
market: europe's leadership potential



Europe has the greatest immediate adoption potential for Natural Refrigerants

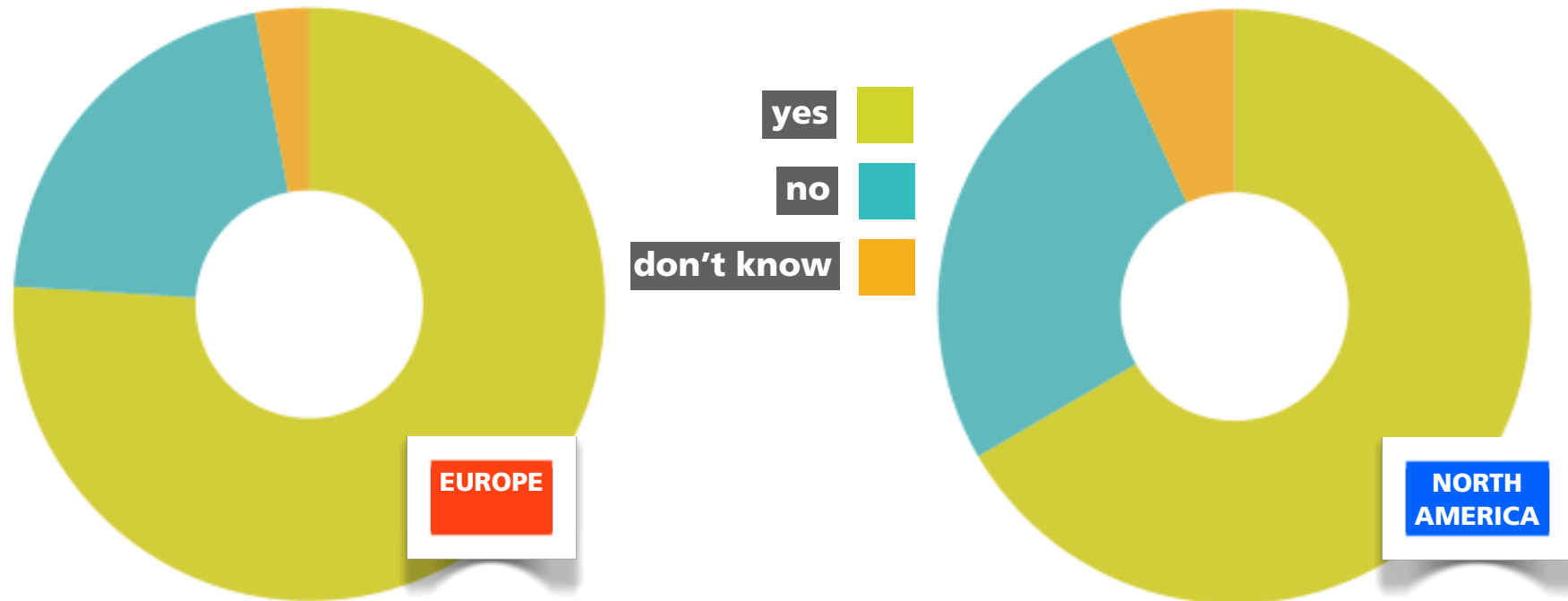


north america's NR capacity



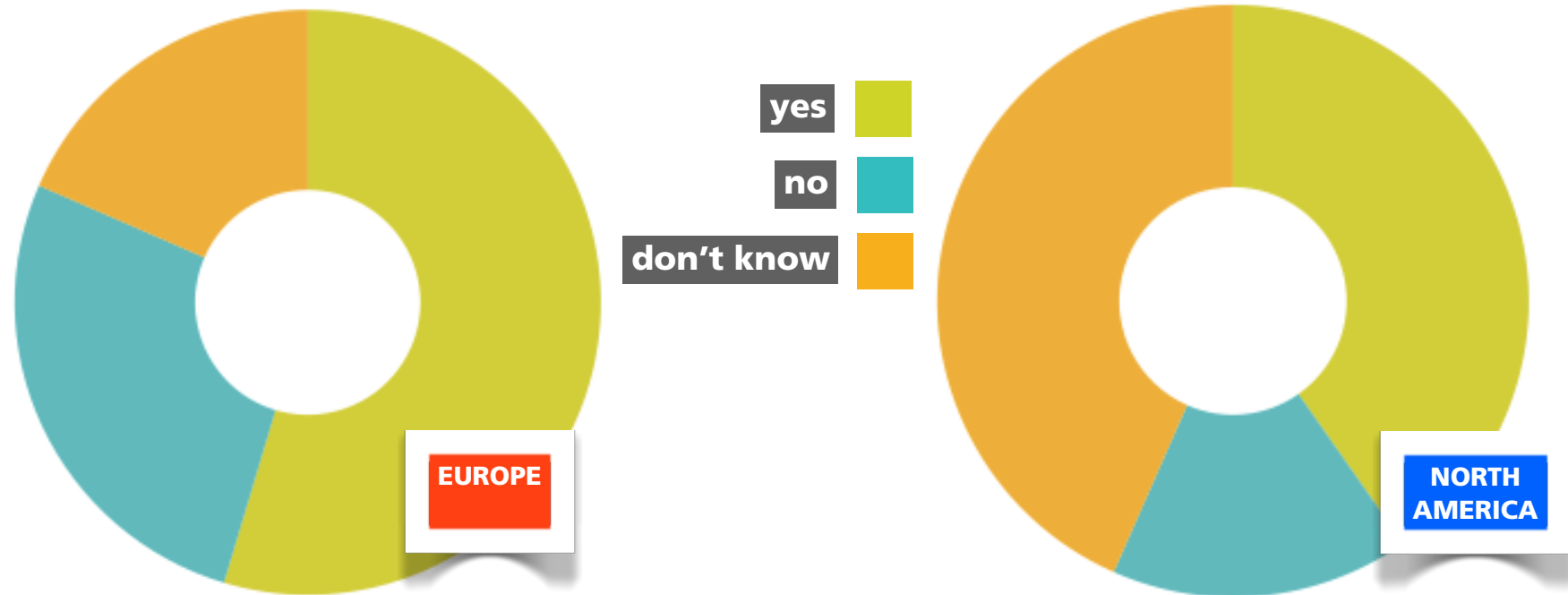
- ▶ **pro-NR respondents: 49% see moderate capacity for North America to become a world leader in NR**
- ▶ **non-NR respondents: 42% see moderate capacity**

respondents: NR use today



- ▶ **Europe: 76% yes - 21% no**
- ▶ **North America: 67% yes - 26% no**

NR future use by current "non-NR" industry

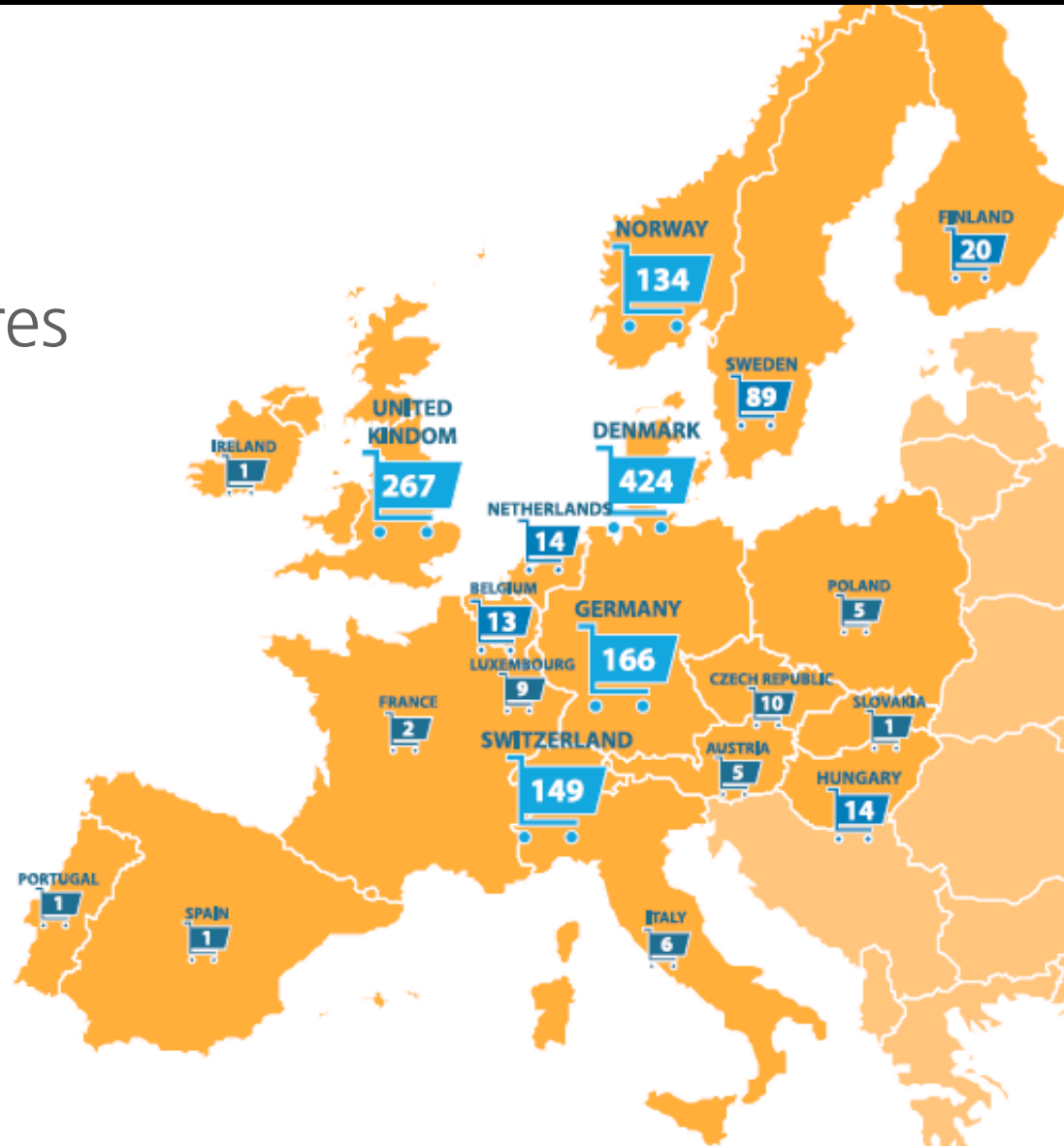


- ▶ **Europe: 55% say they will use them in the future (27% say "no"; 18% say "don't know")**
- ▶ **North America: 40% say they will use them in the future (43% don't know, only 17% say "no")**

transcritical CO₂ supermarkets 2011



verified: 1,331
transcritical CO₂ stores
by mid-2011 for
Europe

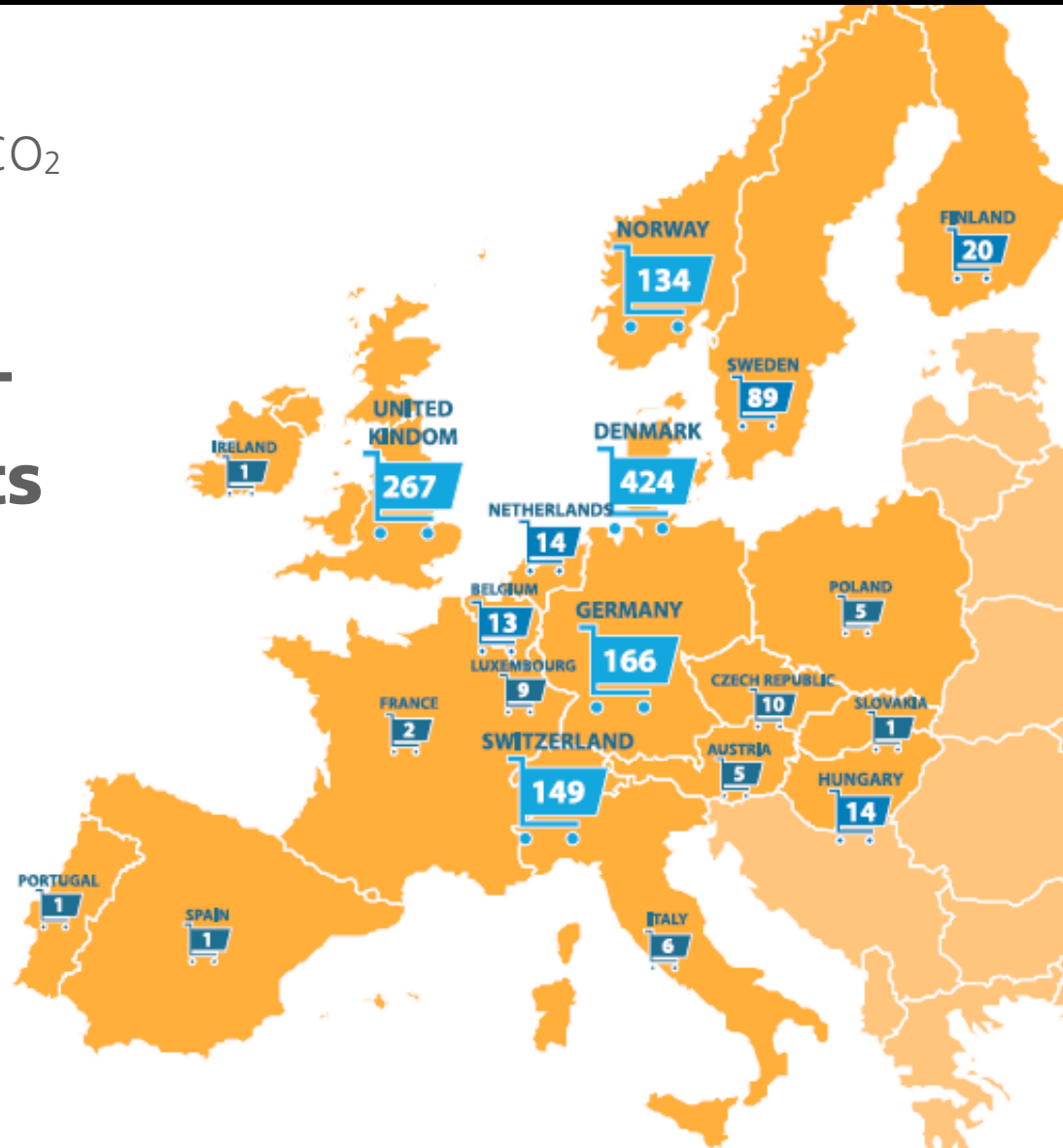


transcritical CO₂ supermarkets 2012



verified: 1,331 transcritical CO₂ stores by mid-2011 for Europe

estimated: 1600+ CO₂ supermarkets by end-2012



natural refrigerants supermarkets



verified: 1,331 transcritical CO₂ stores by
mid-2011 for Europe

estimated: 1600+ CO₂ supermarkets by
end-2012

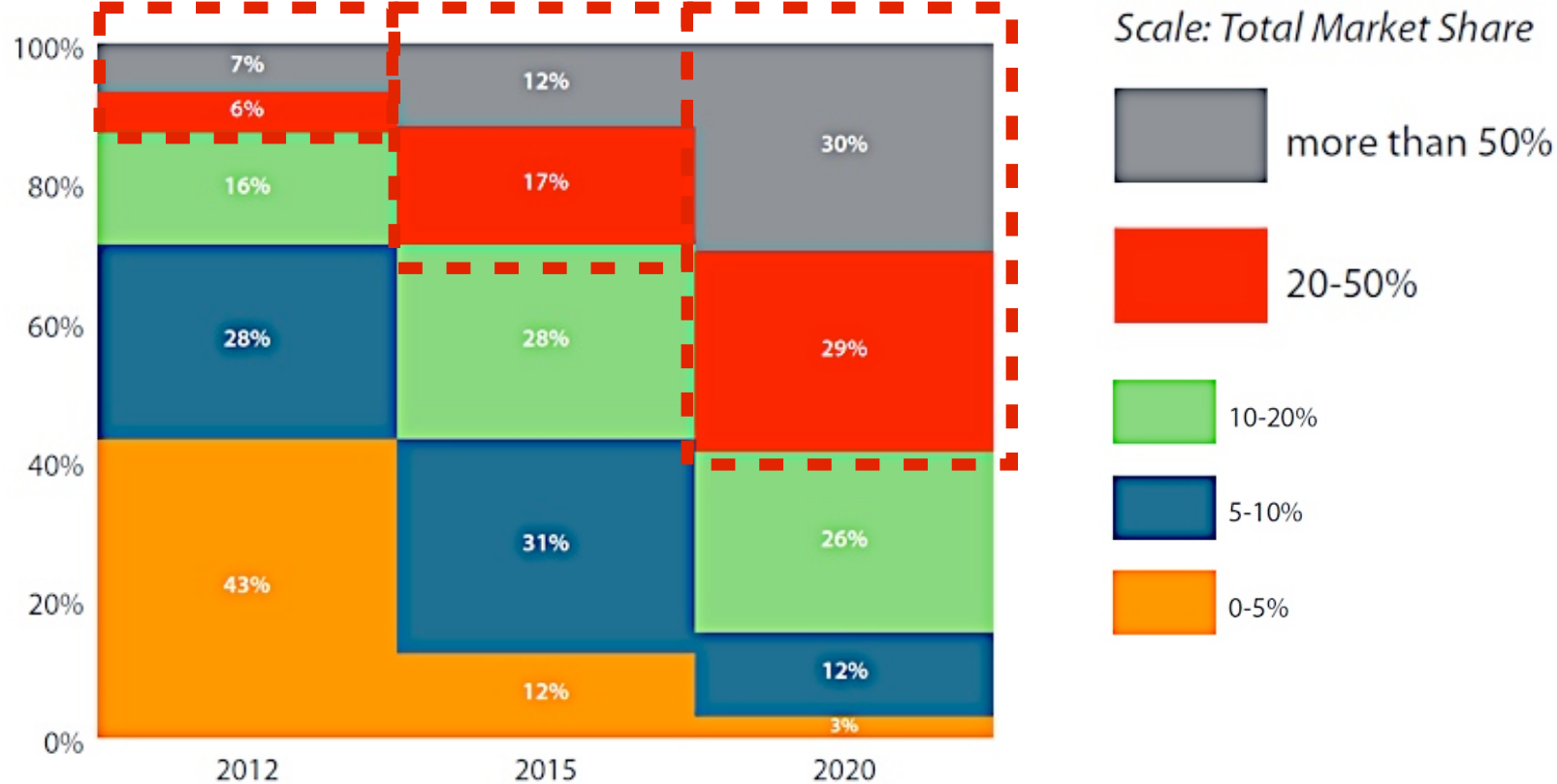
**estimated: 3000+
supermarkets using CO₂,
ammonia and/or
hydrocarbons
refrigeration**



market: "natural" in commercial refrigeration



59% of industry says: by 2020 the market share of natural refrigerants in commercial refrigeration can be 20% and more



market potential for Europe



a minimum of
34 food retailers
use natural
refrigerants



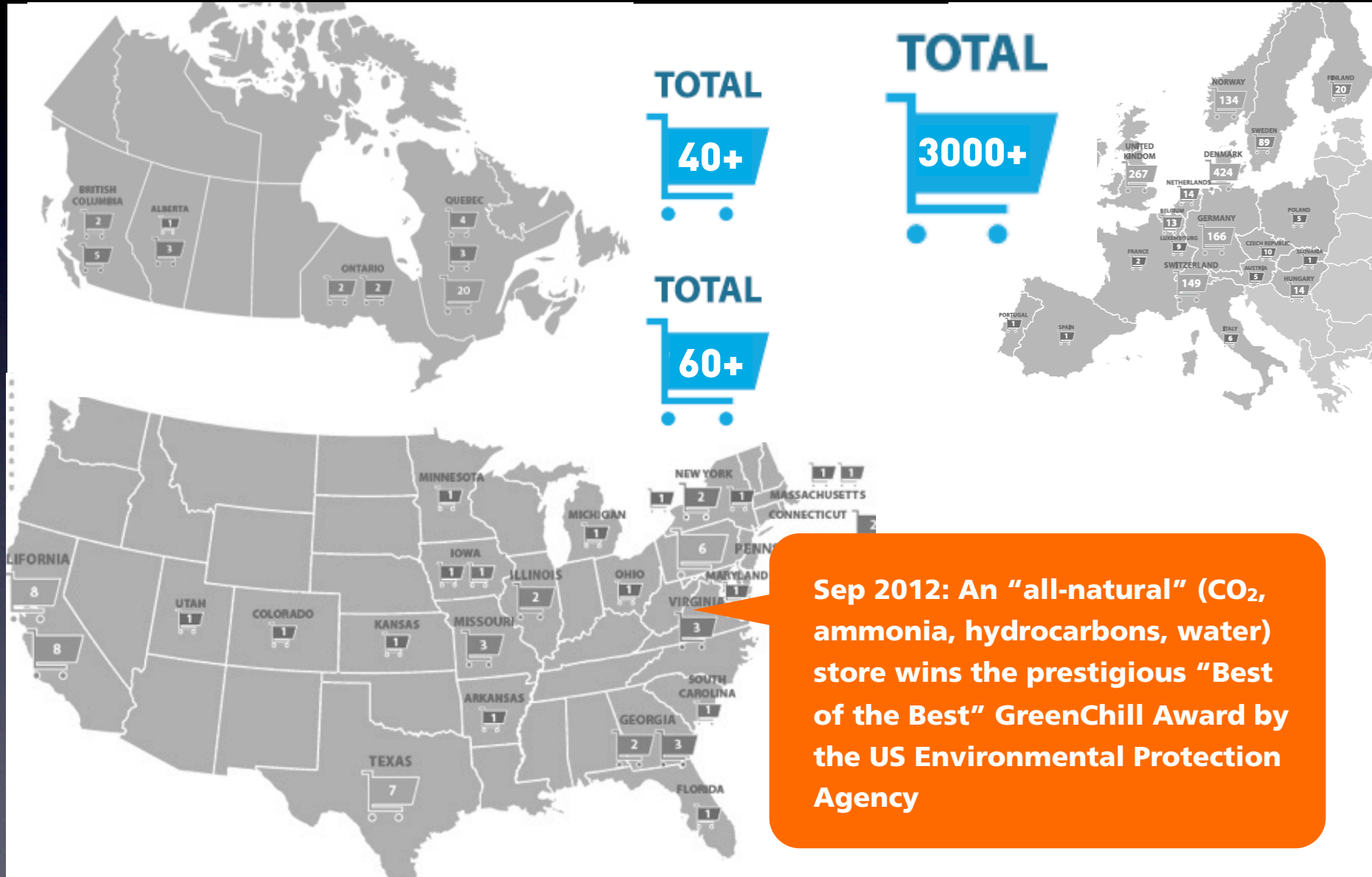
market potential for Europe



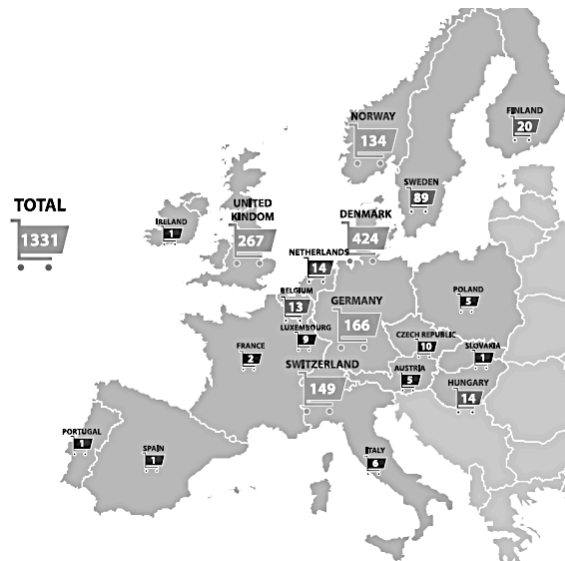
... with the potential of introducing the technology EU-wide



natural refrigerant supermarkets



natural refrigerant supermarkets



TOTAL
1331

TOTAL



TOTAL



TOTAL



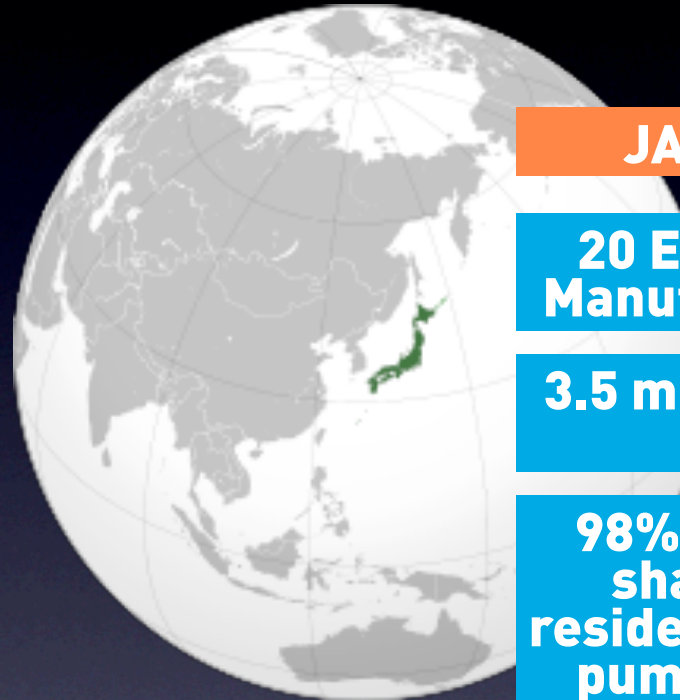
CO₂ heat pumps in the world



EUROPE

**16
Manufacturers**

**max 3% market
share for
residential heat
pumps**



JAPAN

**20 Eco-Cute
Manufacturers**

**3.5 million CO₂
HP**

**98% market
share for
residential heat
pump water
heaters**

**500,000 units
production /
year**



CHINA

**100,000 units
production
capacity / year**

GUIDEs: published & upcoming



**GUIDE
Europe**

Feb 2012



**GUIDE North
America**

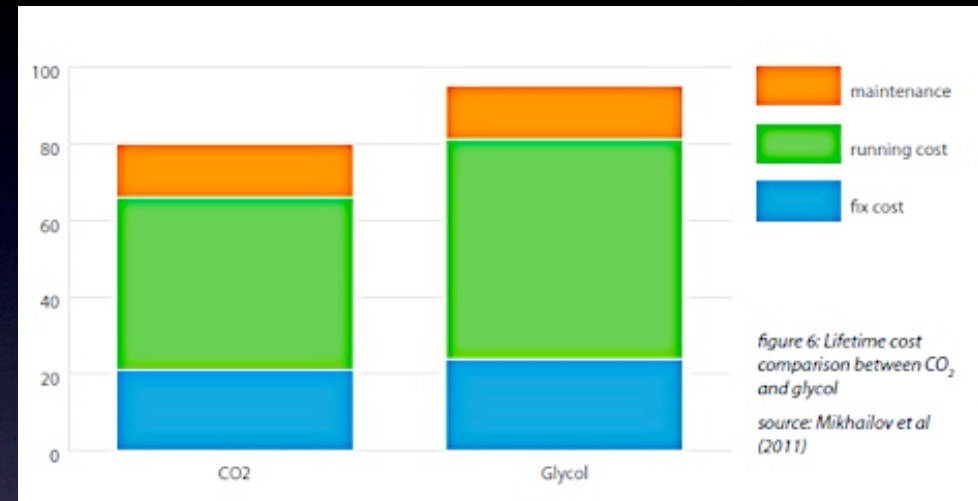
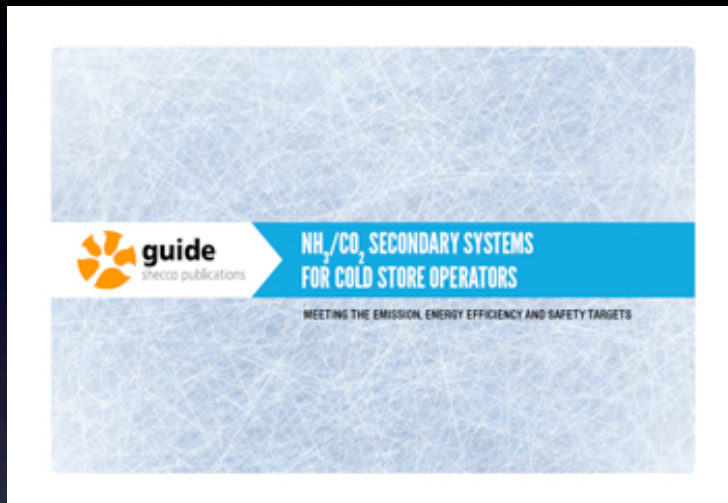
**launch:
Dec 2012**



GUIDEs 2013:

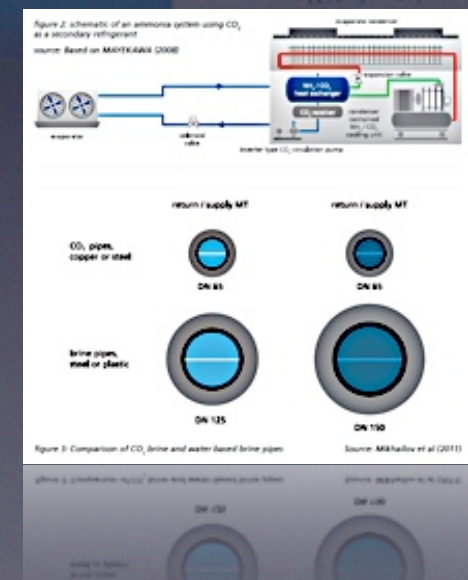
- ◎ **Europe 2nd edition**
- ◎ **Japan**
- ◎ **China**

GUIDE to NH₃-CO₂ Secondary Systems for Cold Storage Operators



Content:

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



shecco market research



GUIDEs:

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guide
shecco publications

shecco's market research department publishes an easy-to-access online reference series for the global market for natural refrigerants known as "GUIDEs", which include the following:

- » Market outlook based on industry survey
- » CO₂ supermarket maps
- » End-user views and case studies

The GUIDE "Market Growth for Europe" is freely available as a download, and will soon be followed by "North America's Market Potential", and "China's Market Potential".

shecco's market research department offers:

- » Tailor-made market studies depending on your budget and needs
- » Multi-client market research for industry, trade, and NGOs
- » News monitoring & continuous market tracking
- » Policy audits & issue tracking
- » Funding audits & grant project management
- » Consultancy services, partner assessment, customer search

We provide quantitative and qualitative marketing research to ensure the most appropriate and cost effective methodologies are used on each project. Market research services include:

- » Research design and set-up
- » Online & telephone surveys, in-depth interviews
- » Data processing & analysis
- » SWOT analysis & trend forecasting

Whilst shecco's multidisciplinary team has a wealth of knowledge across the range of "green technologies", we have special access to a global network of industry and policy decision makers in the following areas:

- » Natural refrigerants
- » Heating, ventilation, air conditioning and refrigeration (HVAC&R)
- » Electric Vehicles (four wheelers, scooters / bikes etc.)