

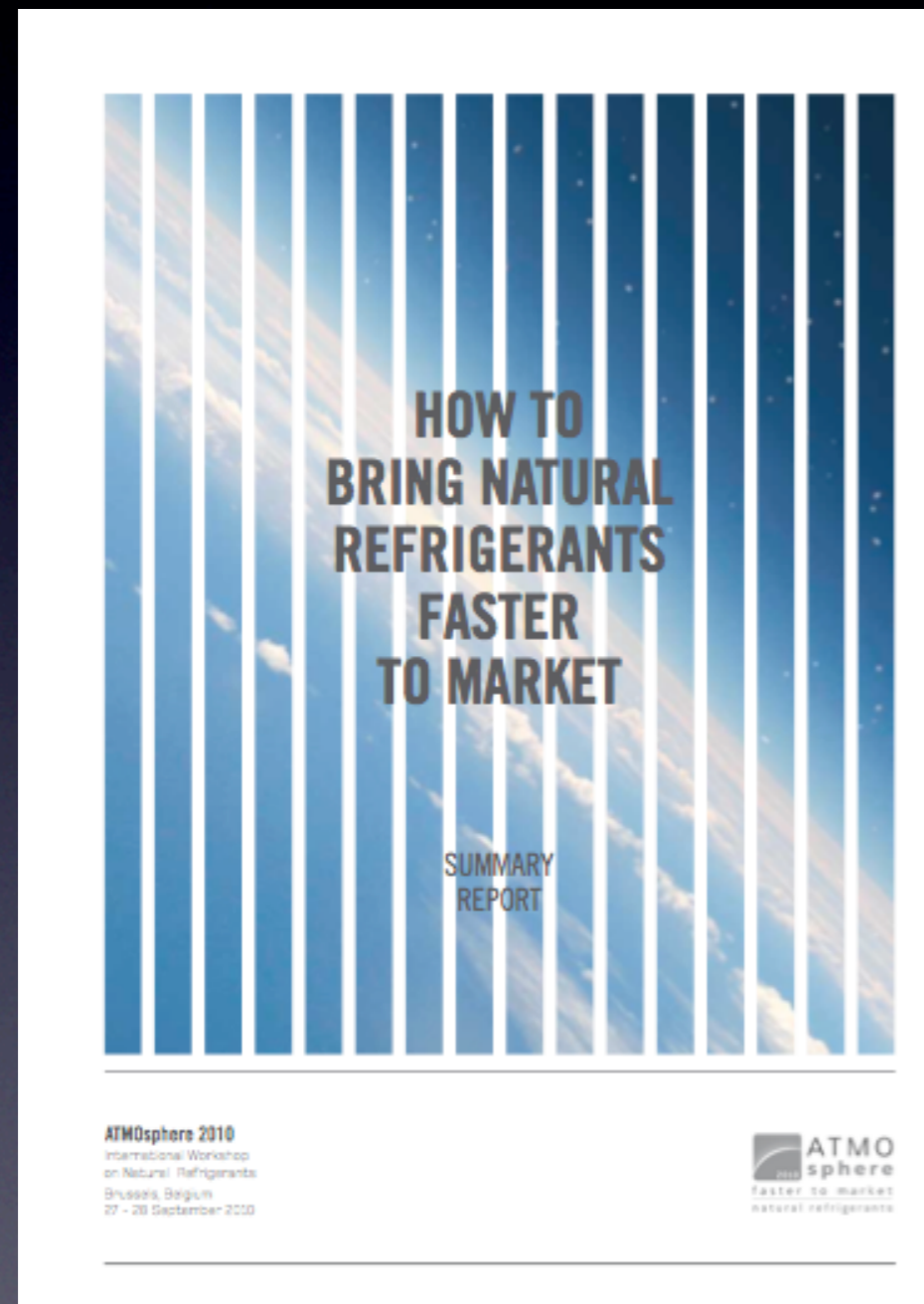
# Natural Refrigerants in the European HVAC&R industry: market & policy climate



**Brussels, 11 October 2011**

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# WHY: ATMOSphere 2010, UNEP ....



- ATMOSphere 2010 Report: summary of presentations and discussions + survey among 200
- UNEP survey: on barriers to low-GWP refrigerants worldwide
- **need for industry & policy to actively address existing barriers**

# HOW? - the industry survey 2011



- the **world's largest industry survey** to illustrate + quantify the market potential of natural working fluids
- inform industry, end-users and policy about:
  - market state, trends & drivers + industry expectations
  - adoption potential per world region
  - barriers & opportunities to the use of CO<sub>2</sub>, NH<sub>3</sub>, HC
  - more...

**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  Oceania/Pacifica  
 North America  Asia  
 South America  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):**

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

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

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

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

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

**7. Other (please specify):**

Other (please specify)  Other (please specify)  
 Other (please specify)  Other (please specify)  
 Other (please specify)  Other (please specify)  
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# HOW? - validity of data



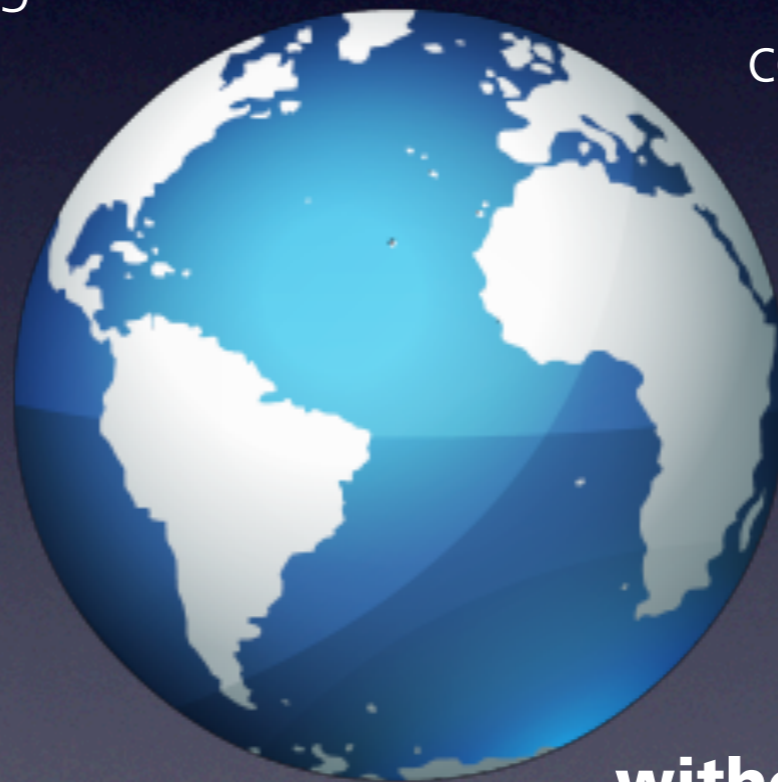
## **support from industry associations**

Australia: AIRAH, Green Cooling Association

Europe: AREA, EHPA, REHVA

USA: GreenChill program

UK: B.R.A



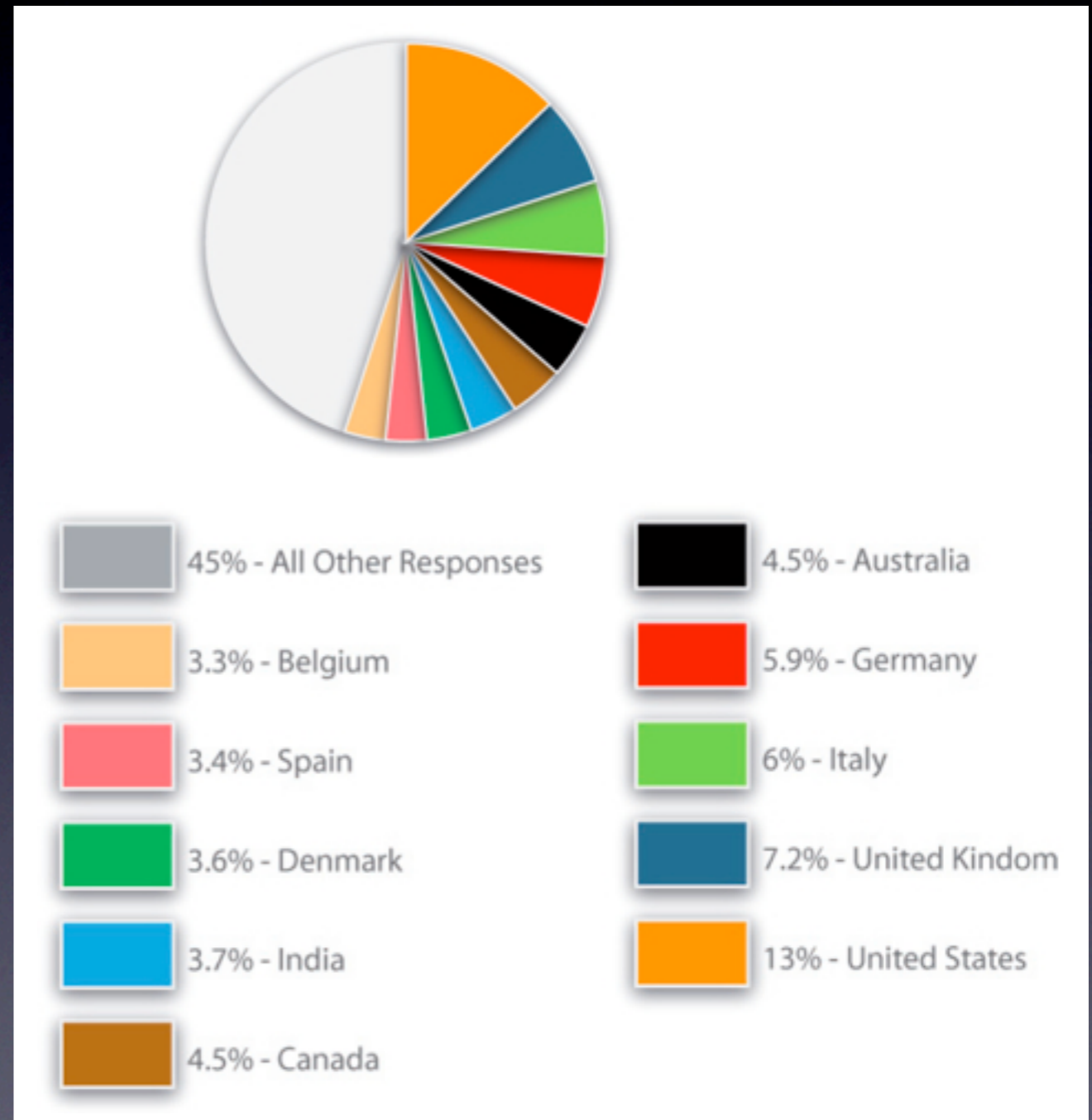
## **open access & various communication channels**

articles, newsletters, direct communication, phone calls, presentations

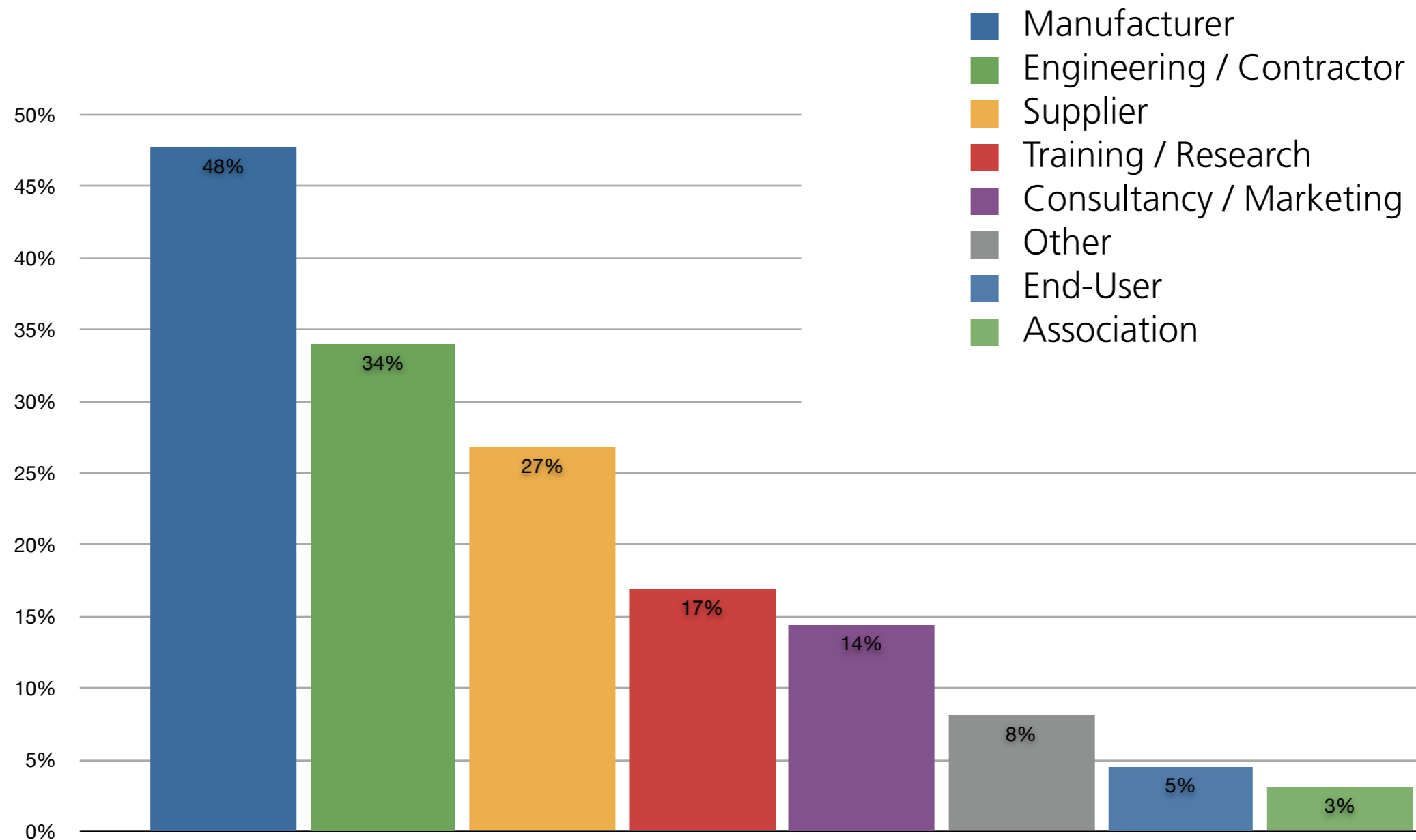
**30% of respondents without natural refrigerant products & services**

# HOW? - methodology

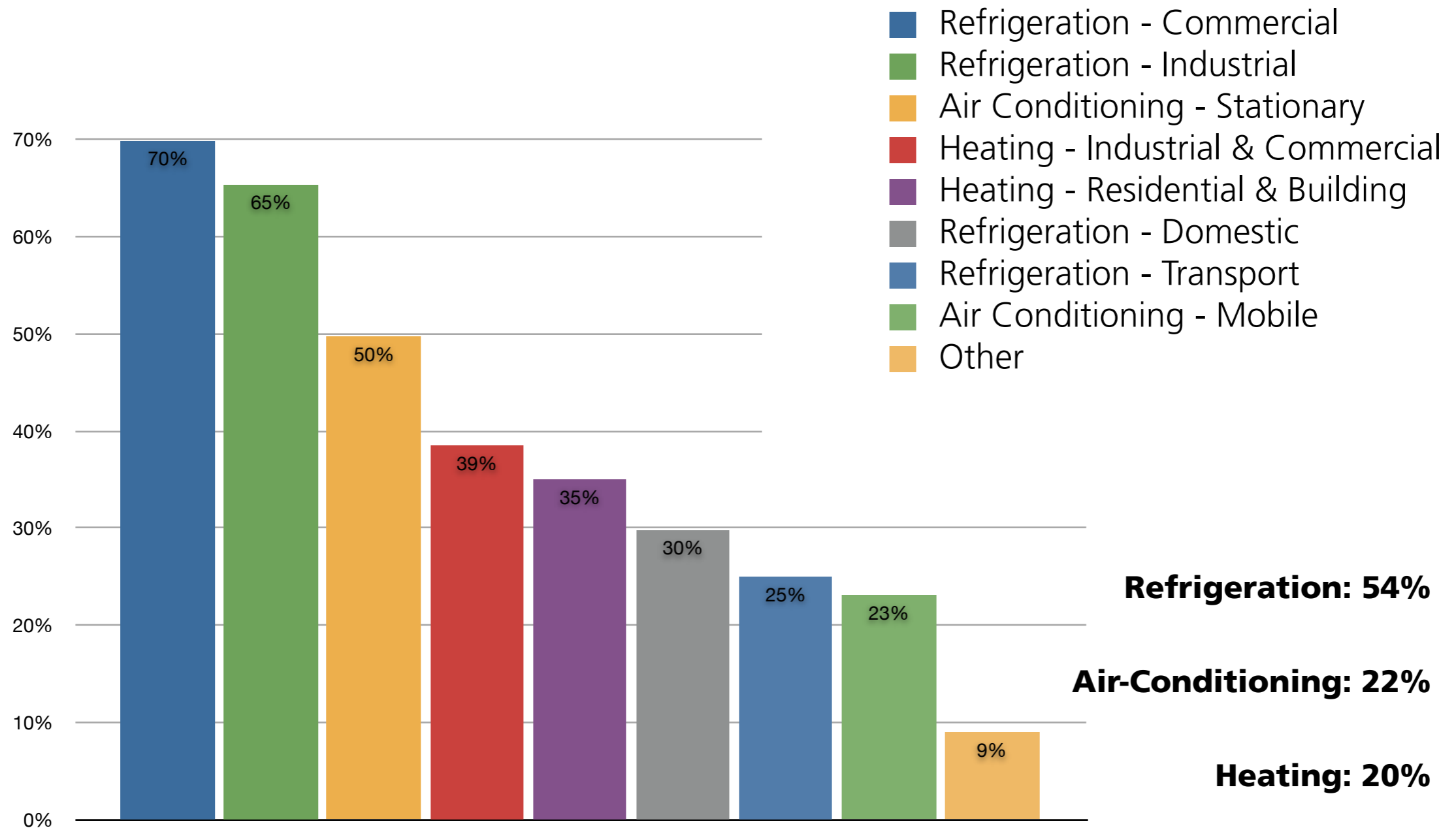
- online survey with up to 28 closed and open-type questions
- March - July 2011
- invitations sent + calls made to 6,500 HVAC&R professionals & associations
- total number of responses (July 2011): 1,136 individuals
- 92 countries represented
  - 53.9% EU
  - 18.2% North America
  - 14.6% Asia



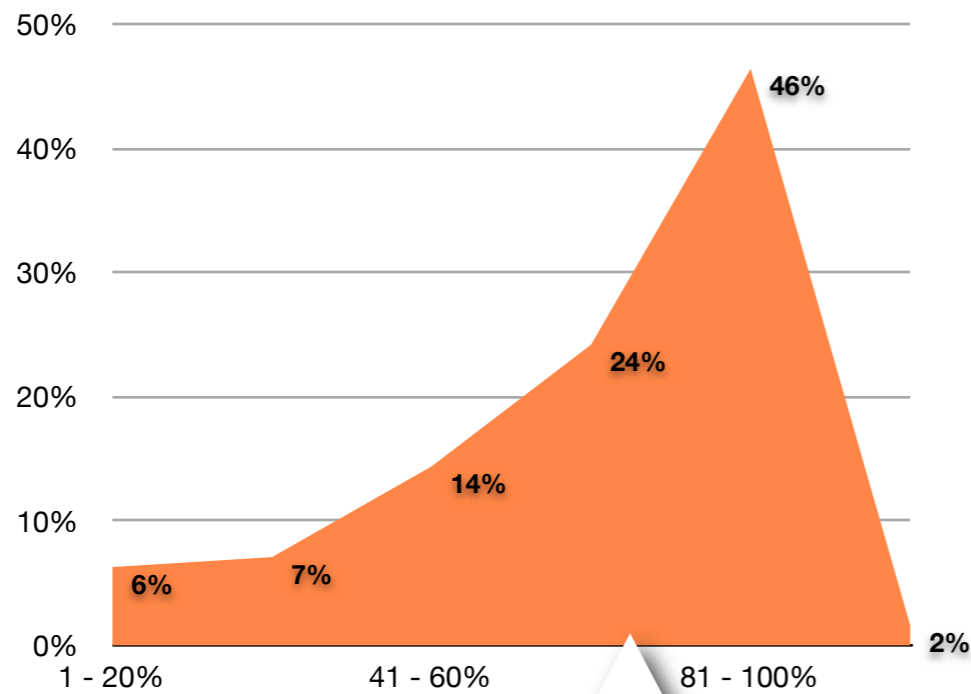
# WHO? - respondents Europe



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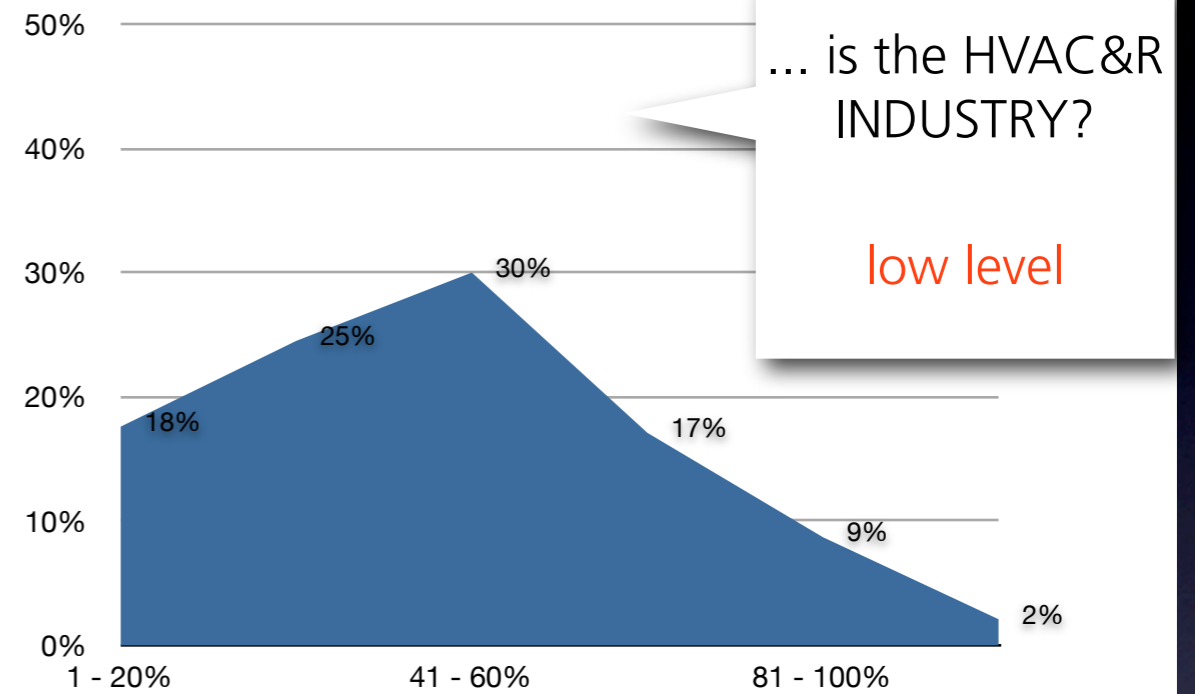


# WHAT? - awareness level



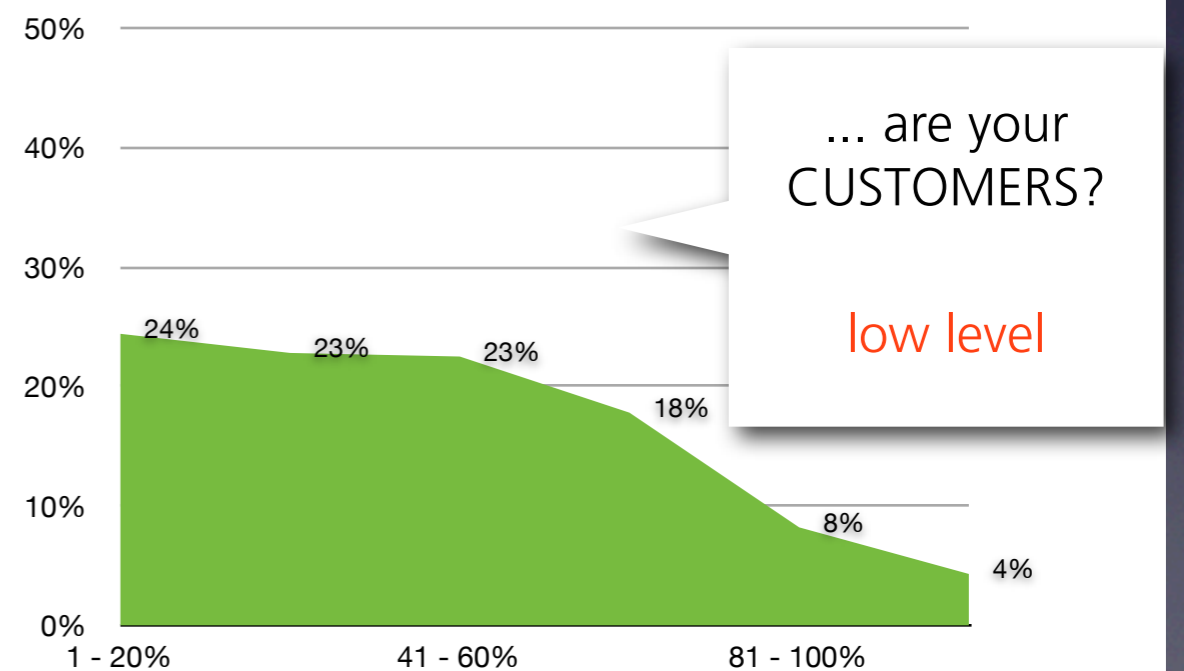
How informed ... are YOU about Natural Refrigerants (100% = highly informed)?

medium level



... is the HVAC&R INDUSTRY?

low level



... are your CUSTOMERS?

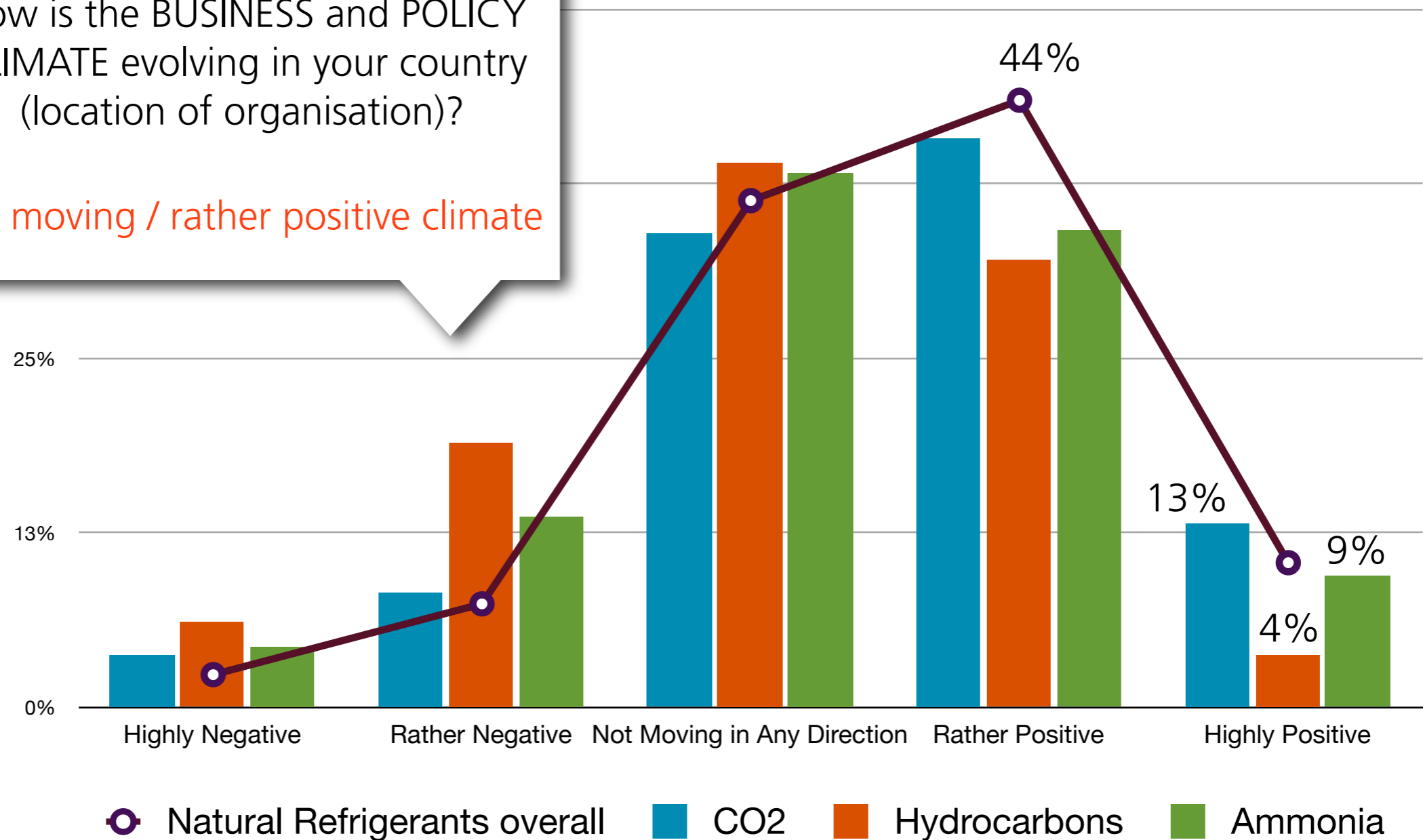
low level



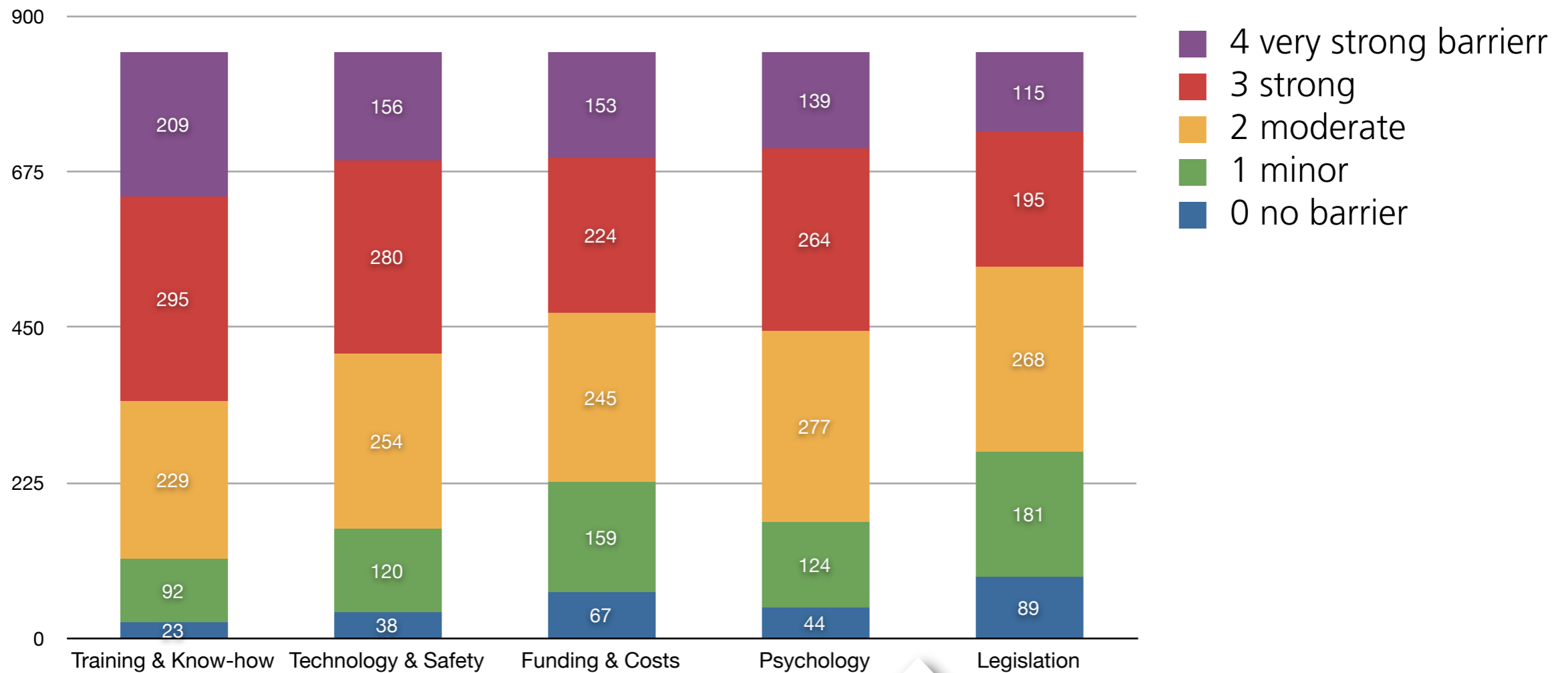
# WHAT? - policy & business climate

How is the BUSINESS and POLICY CLIMATE evolving in your country (location of organisation)?

not moving / rather positive climate



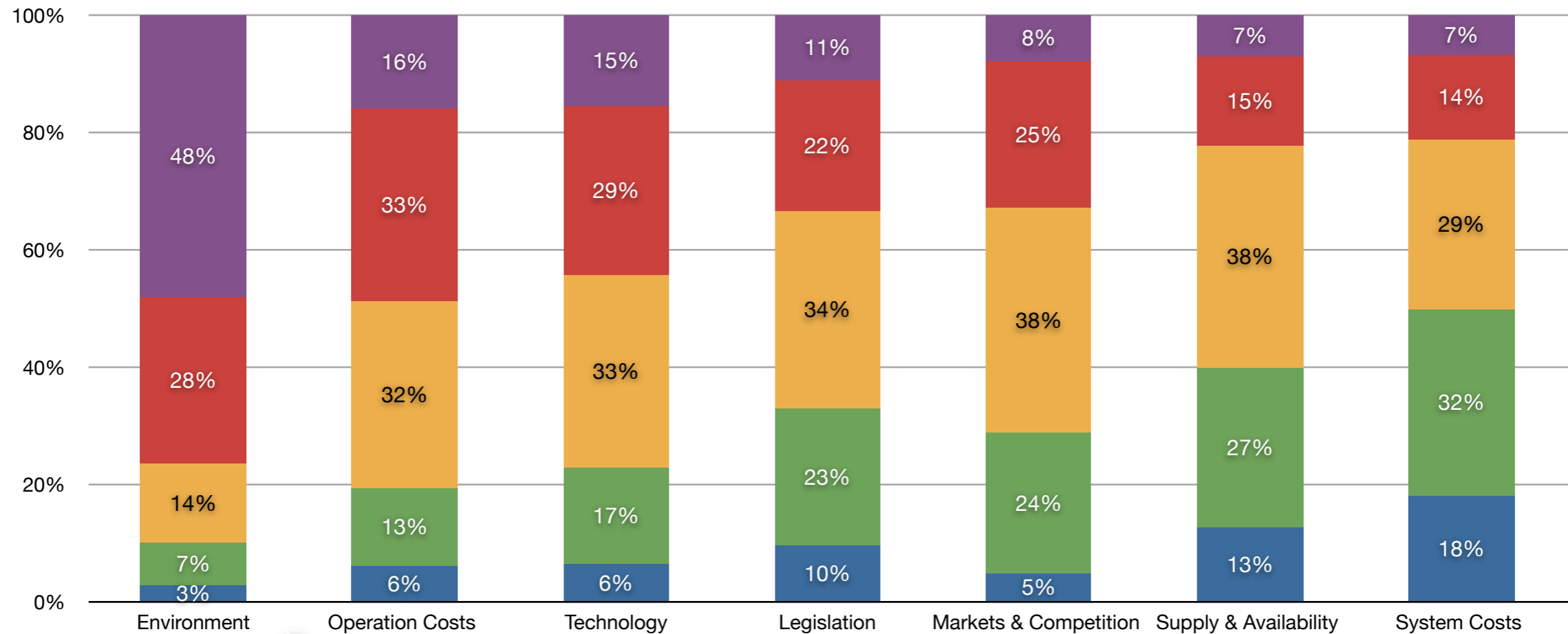
# WHAT? - barriers



What are the biggest BARRIERS in adopting Natural Refrigerants?

training, technology, costs

# WHAT? - strengths

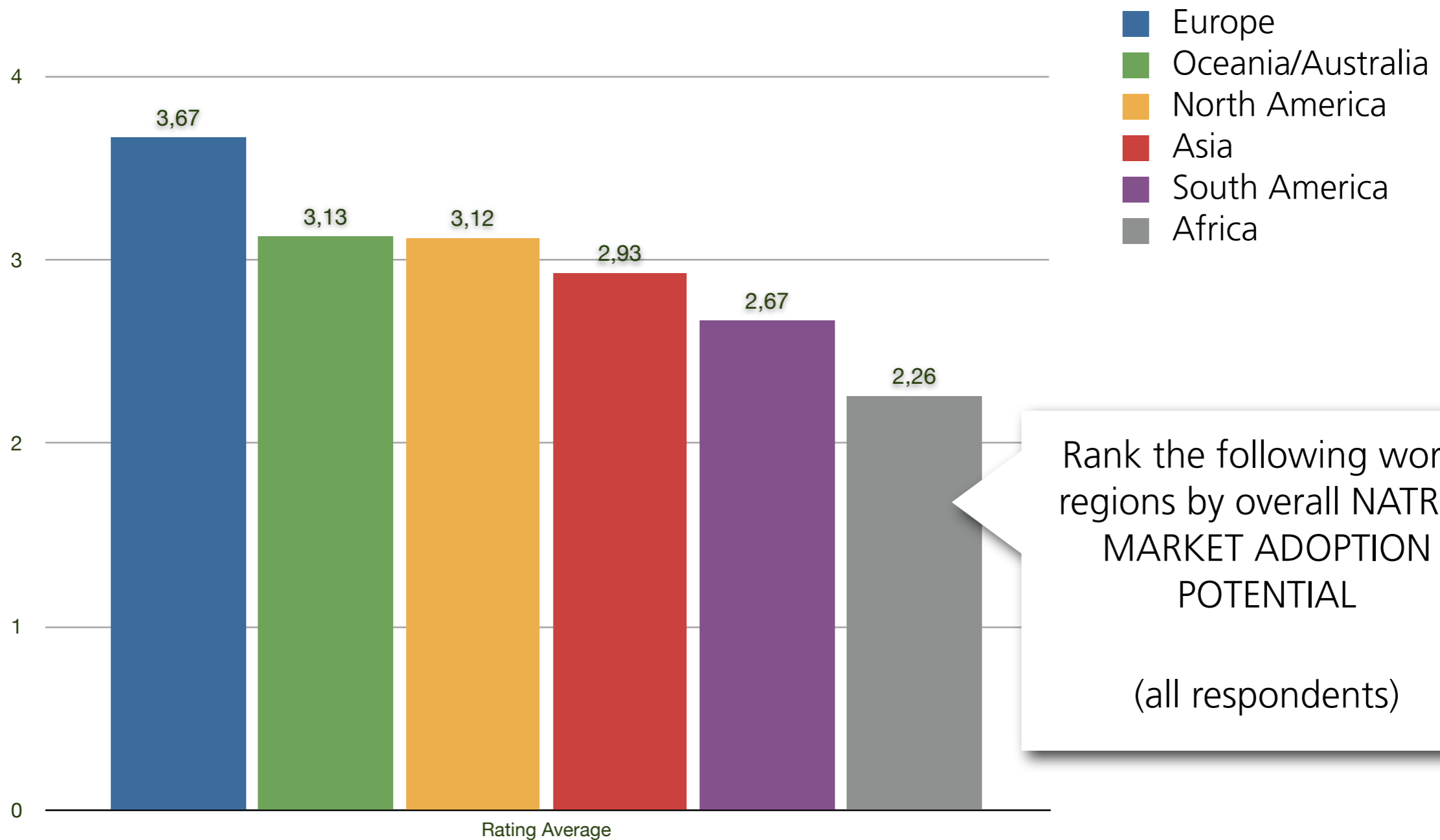


What are the biggest STRENGTHS of Natural Refrigerants?

environment, cost savings, technology

- 4 very high strength
- 3 high
- 2 moderate
- 1 minor
- 0 no strength

# WHAT? - market adoption potential



# main messages + vision



- ◎ **largest industry survey on natural refrigerants**
- ◎ **information is key! .... but awareness is still low**
- ◎ **clear strengths exist! ... but are not yet realised in the market**



## NEXT STEPS

- ◎ projected market share (in units and %age of total market) for the period 2012-2020
- ◎ vision: update regularly for EU + focus on specific topics



# THE GUIDE'11



- easy-to-access and concise **reference guide to the global market for CO<sub>2</sub>, NH<sub>3</sub> & HCs**
- first edition: European Union
- illustrate + quantify the **market potential**
- **open source concept:** distributed FREE of charge to industry, end-users, policy

# THE GUIDE'11 - content



- ◎ **global user's guide**
- ◎ **Europe - market trends**
- ◎ **CO<sub>2</sub> supermarket map**
- ◎ **EU policy analysis**
- ◎ **Case studies**
- ◎ **Company directory**



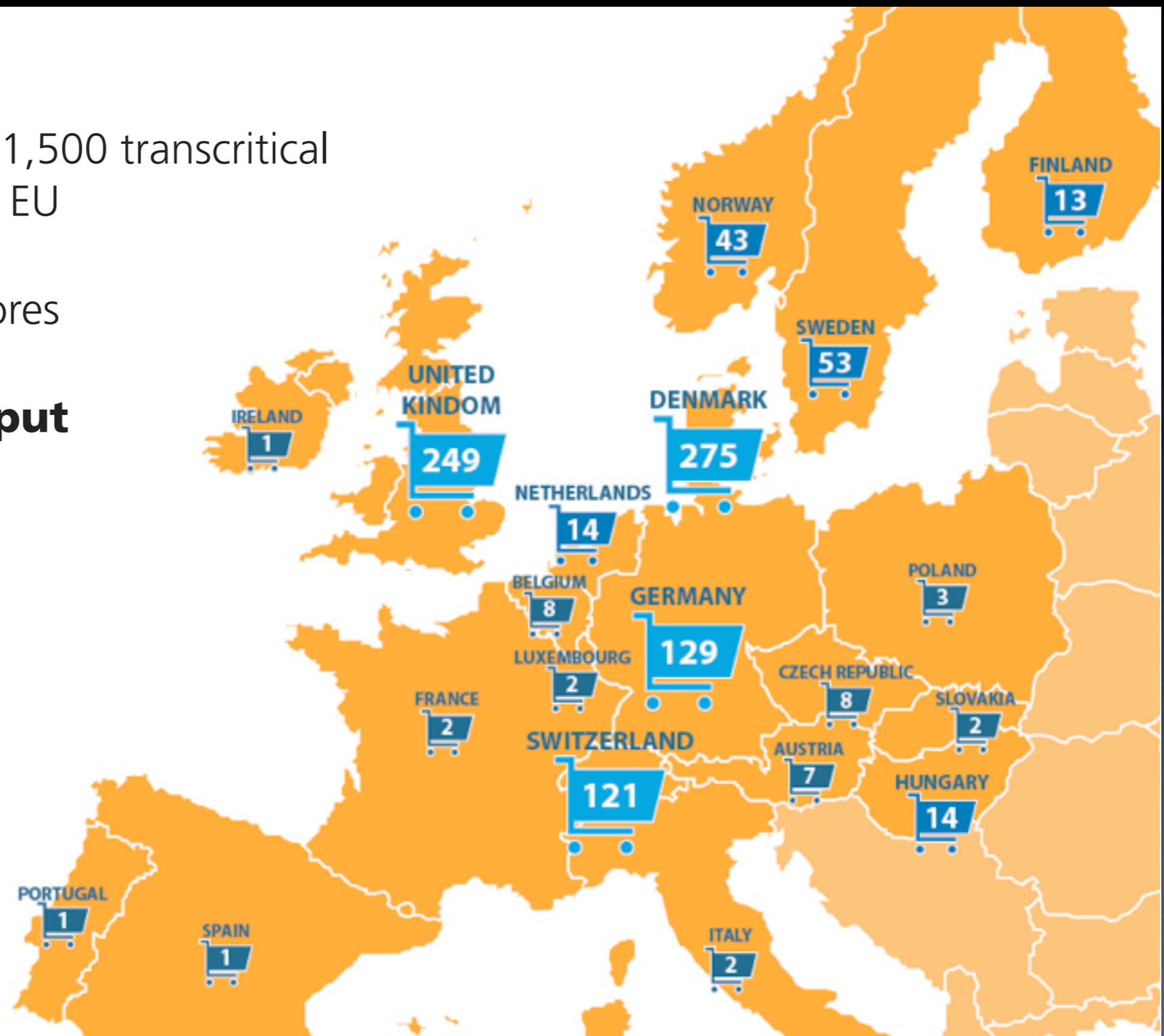
**launch: November 2011**

# CO<sub>2</sub> supermarket map EU

**estimate:** 1,200 - 1,500 transcritical supermarkets in the EU

**verified:** 1,000 stores

**missing: your input**





# CO<sub>2</sub> supermarket map - direct data



**MIGROS**



**KESKO**

**BOOTHS**



**ADVANSOR**  
ENERGYSYSTEMER



*Danfoss*

**GREEN  
& COOL**  
Green Refrigeration Systems



**HUURRE**

# "Ecosystems" - applications

a visual overview of where CO<sub>2</sub>, NH<sub>3</sub> and HC can be used today and where they are currently developed as viable solutions

## CITY & BUILDINGS

EATE VOLORUN TIANDIT, VOLUPTATUR APELIS DEBIS



# EU policy section - analysis & rating

- ⦿ **a rating of European policy** according to its impact in the following categories:

- ⦿ **natural refrigerants**

- ⦿ technology / safety
- ⦿ training / know-how
- ⦿ economy / costs

- ⦿ **enforceability**

- ⦿ **sustainability & vision**



# THE GUIDE - current supporters



# contact



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