# Shecco Sustaining our atmosphere



### Natural Refrigerants in Article 5 countries

MOP 23 Side Event, 25 Nov 2011, Bali 7 September 2010





### agenda



- awareness & information sources: Marc Chasserot, shecco
- article 5 examples: Alexandra Maratou, shecco
- HC refrigerant supplier perspective: John Clark, HyChill
- HC retrofits in SE Asia : Brent Hoare, Green Cooling
- information services : Linda Ederberg, GIZ Proklima

### about shecco



- Innovative \_ industry marketing specialist
- focus \_ natural refrigerants
- expertise \_ HVAC&R & transport sectors
- mission \_ climate-friendly technologies faster to market

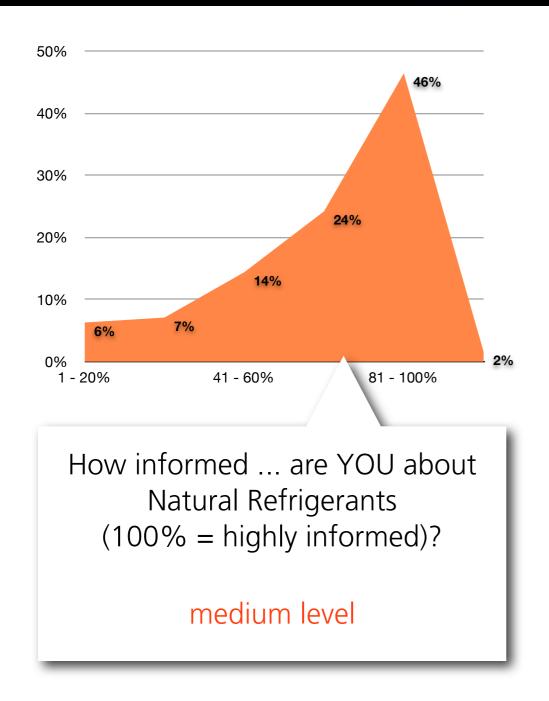
#### 100+ partners worldwide

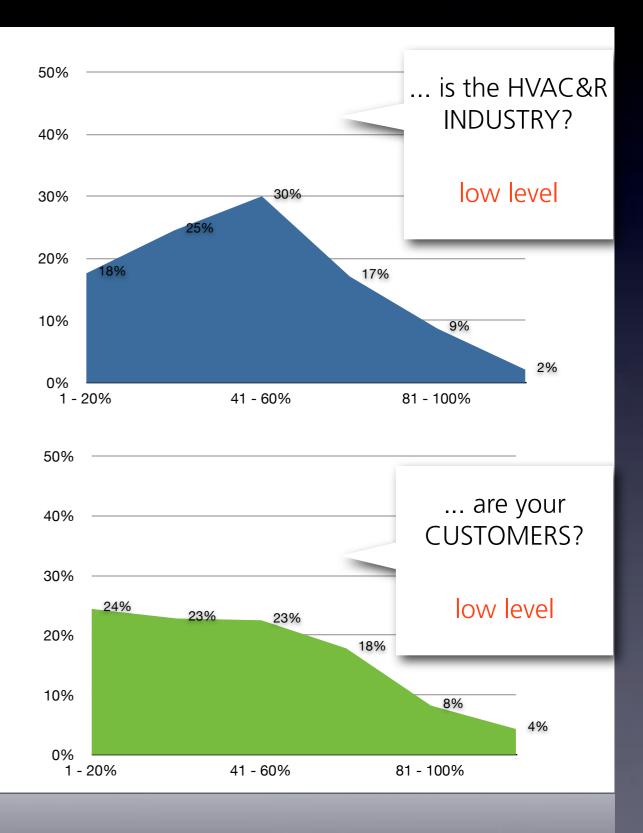




#### natural refrigerants awareness level

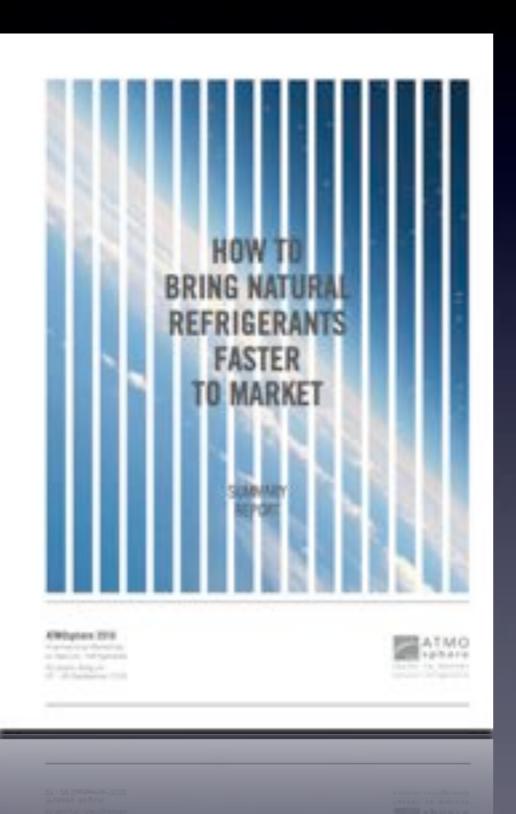






#### natural refrigerants faster to market 2010





- barriers & solutions
- special chapter on India
- downloaded '000s times

### industry platforms

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patents

NOW

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#### ammonia21.com

### industry platforms









- 2000 + articles about Natural Refrigerants
- 1.5 million + pages views/ year
- 500 + papers & presentations
- 200 + products (worldwide)
- 8000 +/- experts (incl. policy), 150 + countries

## global community



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- the first global professional network for natural refrigerants
- exchange knowledge, connect with partners, customers
- share best practice about CO<sub>2</sub>, NH<sub>3</sub> and HCs without any barriers

### mobile APPs





- Free APPs: Apple, Android, Blackberry
- hydrocarbons21, ammonia21, R744.com
- o daily updates
- connect from anywhere

#### ATMOsphere workshops





- interactive workshop series with industry & policy experts
- ATMOsphere Europe (sept 2012)
- ATMOsphere America (June 2012)
- ATMOsphere Asia
- ATMOsphere Montreal Protocol

#### Natural Voice (2012)



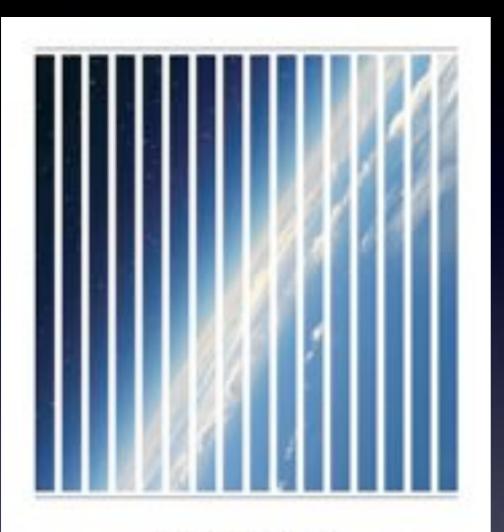


- news service (to be launched 2012)
- inform Ozone & Climate experts about natural refrigerants
- new website
- email alerts
- regular newsletters



#### natural refrigerant examples in Article 5 countries





40 EXAMPLES OF NATURAL REFRIGERANT STORIES IN ARTICLE 5 COUNTRIES IN 2011

- 40 examples of natural refrigerant stories in Article 5 countries published in 2011
- They highlight opportunities
  & challenges in adopting
  CO2, NH3 and HCs
- 1 report\* for Montreal Protocol delegates

#### HC ACs in China & beyond





- Lessons from Gree's AC facility convesion to R290
- help others set up similar projects
- 18 AC production lines in China to be converted to R290

#### HC ACs in China & beyond



a step-by-step approach was key:

- globally recognised testing, inspection and certification of facility(TUEV), CE certification
- service training, preparation of manual & development of working procedures
- pilot installation

18 of the 32 air conditioning production lines in China will be converted to R290 as part of China's HPMP.

# solar water heating project with CO2 as working fluid in Pakistan





- project will develop and demonstrate hybrid system at Gilgit-Baltistan area
- joint collaboration between the Pakistan-US Science and Technology Programme and the Higher Education Commission
- planned for completion end 2012

# solar water heating project with CO2 as working fluid in Pakistan



- combines a direct expansion heat pump with a solar collector
- demonstration at Gilgit-Baltistan area, where it can be very hot during the day, and very cold at night
- CO2 selected for its low-freezing point compared to water
- hybrid system ensures continuous operation and a reliable heat supply

# world's 1st OEM using HCs in production line (Australia)



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hydrocarbonada.com.wrate Ungernau Initially Reymer's decision to test, develop and employ hydrocarbon mobile air- conditioning (MAC) for the OKA special purpose on/off road vehicle?	RETURNE INTERVIEW WITH A. GAANGER, RETURNE OF NE MAC			

- First OEM in the world to use hydrocarbon refrigerant in its production line
- 4+ years of safe use
- high performance

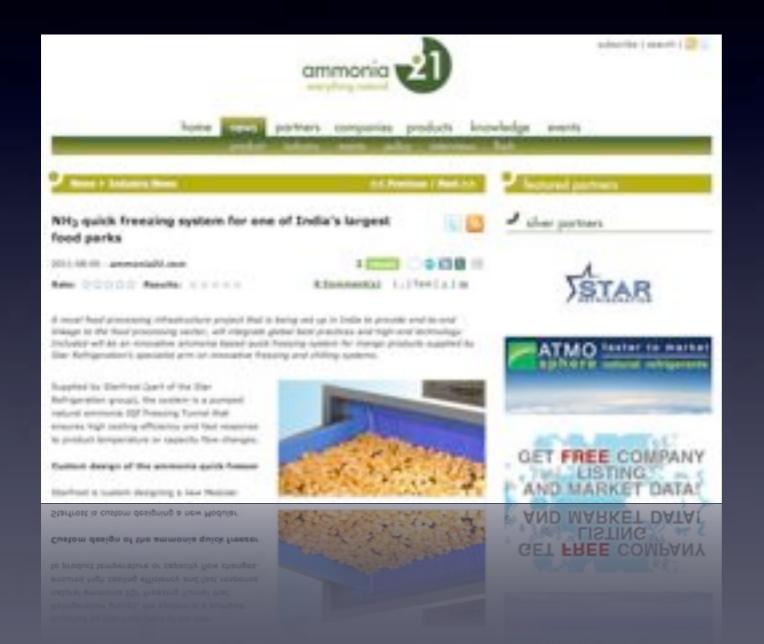
# world's 1st OEM using HCs in production line (Australia)



- 4+ years of safe use of hydrocarbons in vehicle production
- adds to 20 years of experience with the safe use in the service market
- Our packaging space is very limited and HCs give us a highly efficient solution whereby we can get more cold air out of the system for the same energy input and by using the same standard sized compressor", Andy Granger, General Manager of Reymer Pty Ltd.

# NH3 quick freezing system for one of India's largest food parks





- first-of-its-kind Mega Food
  Park
- located at the Chittoor district, Andhra Pradesh
- high-end technology
- ammonia based quick freezing system

# NH3 quick freezing system for one of India's largest food parks



- provides end-to-end linkage to food processing sector
- Integrates global best practices and high-end technology
- includes ammonia quick freezing system for mango products
- The mango product will first pass through an initial crust freezing zone with cascade and variable control agitation, then be transferred to a deep fluidised bed for final freezing, ready to be sold on the domestic retail market and get packaged for export.

#### Ghana delegation receives hydrocarbons training in Italy



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- training on HC safe handling
- theoretical & hands-on training

Ghana delegation receives hydrocarbons training in Italy



- Theoretical and practical training by Centro Studi Galileo
- Safe handling and design of equipment
- Part of Ghana's efforts to establish a safe hydrocarbon and natural refrigerant use culture
- "The technicians we have trained will now go back to Africa to spread this message, and to allow African contractors to start working correctly, in the most effective way", Marco Buoni, technical director of Centro Studi Galileo