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Natural refrigerants for commercial freezers

Practical experience

Brussels, 16.10.2013

Reinhold Resch
AHT Cooling Systems, R&D Manager



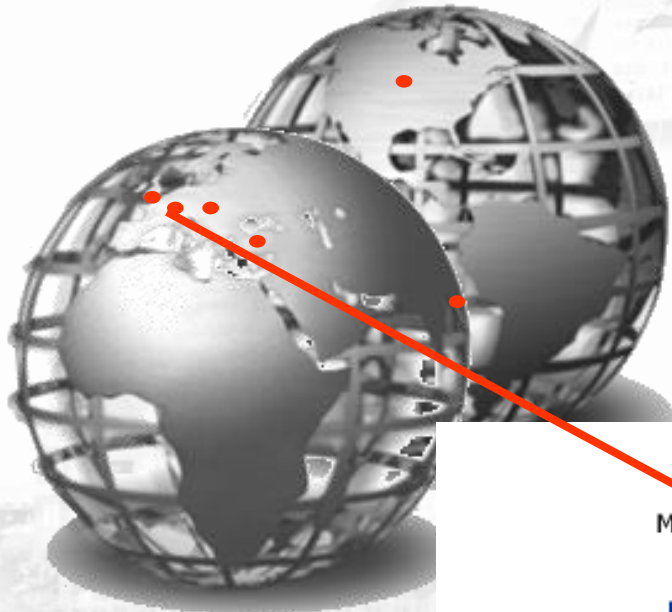
solutions for europe

natural refrigerants

15-16 October 2013, Brussels



AHT Rottenmann AHT Group



- AUSTRIA (Headquarter)
- Germany
- Great Britain
- USA
- Turkey
- Hong Kong
- China
- Spain
- Brazil
- India





Quality management
according ISO 9001:2008

Environment management
according ISO 14001:2004



Ice cream cabinets

**since 2004
with R290**



Bottle cooling

**Available
with R20**



AC W



AC S



AC M

Athen XL

Manhattan

Miami ECO

Athen XL ECO

Salzburg

Paris

NEW

R 290

Supermarket

AHT e-co
ENERGIE-SPAR-PLUS

LED



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green . freshness . worldwide **AHT** Supermarket installations worldwide



We already did it!

France

KOREA

Sweden

AHT's cabinets supplied with R290
600.000 worldwide
3.000 Thailand
480.000 in Europe's supermarkets

Key features

Key features in general

- stand-alone cabinets or banked together in an isle
 - environmental friendly
 - low energy consumption
 - blowing agent for insulation: Pentane
 - **future proof technology**
 - natural refrigerant
 - variable speed compressor
 - connectable to store management systems
 - for small, medium and big supermarkets suitable
- ✓ **available now**

Key features in Europe

Hydrocarbon installations started in 2006

- ECO and LED version since 2011
- numbers of cabinets increasing by 50.000 units each year
- in average 28 units per store (e.g. LIDL up to 36/store)

Store information / feed back

- significant savings due to reduced energy consumption
- product temperature -18° to -22° (@ 25° C, 60%)
- very low failure-rate and no regular maintenance
- used in many stores without AC
- **future proof** due to natural refrigerants (R290)



Benefits of natural refrigerants

TEWI = total equivalent of warming impact

- TEWI – influences**

- direct influences

TEWI =

Natural refrigerants

- indirect influences

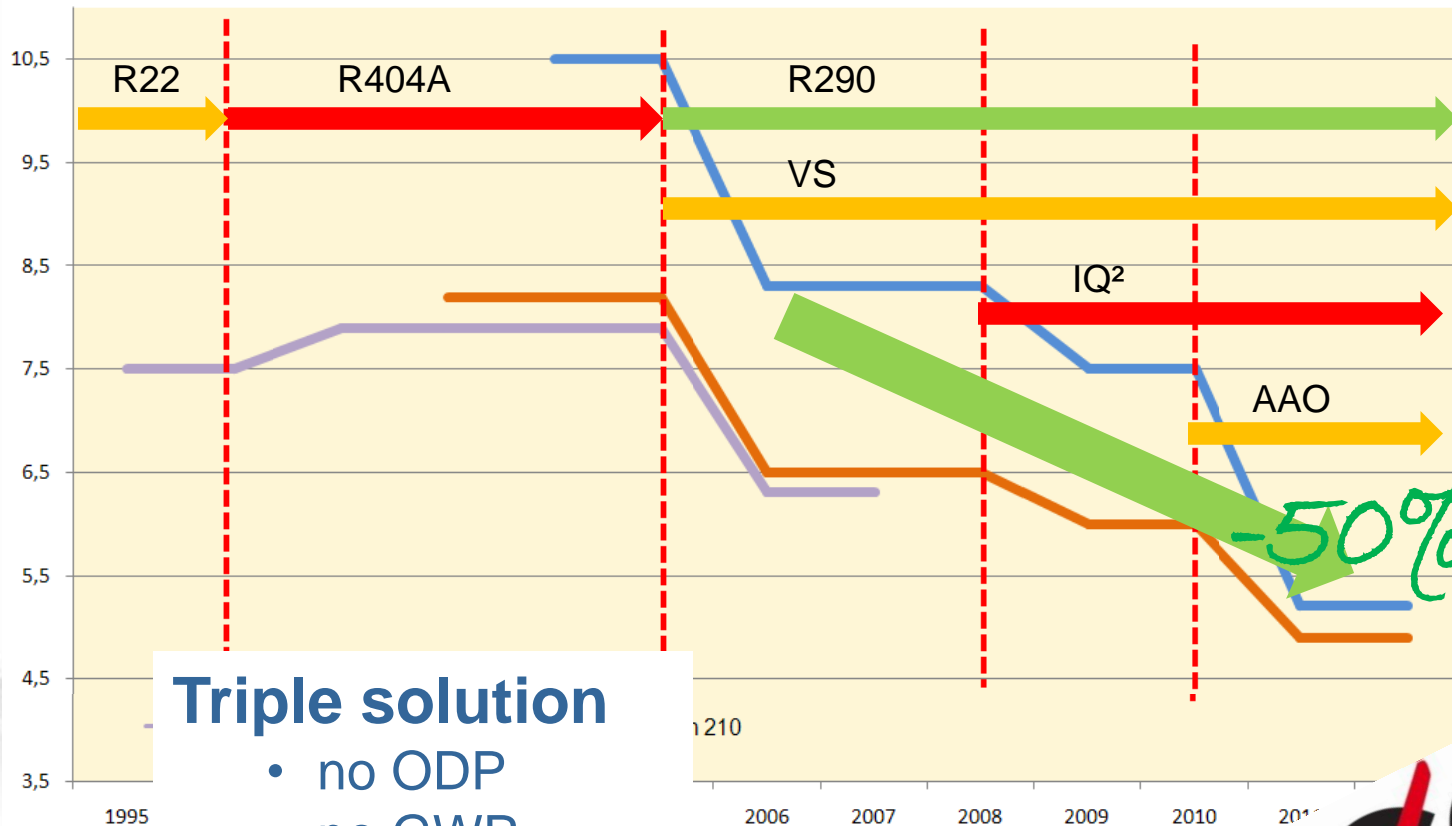
→ (n x E x beta)

- energy consumption



Reduction of the energy consumption

Energy consumption in kWh/24h



Triple solution

- no ODP
- no GWP
- minimal TEWI



Conclusion

technology and equipment is available now
natural refrigerants (R290, R600a) are future proof
R290 and R600a are the preferable refrigerants

R290 is the **best alternative refrigerant**

for the use in

- ice cream cabinets
- bottle coolers
- commercial freezers



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Thank you



your “freshness partner” worldwide