



Natural refrigerants for commercial freezers

Practical experience

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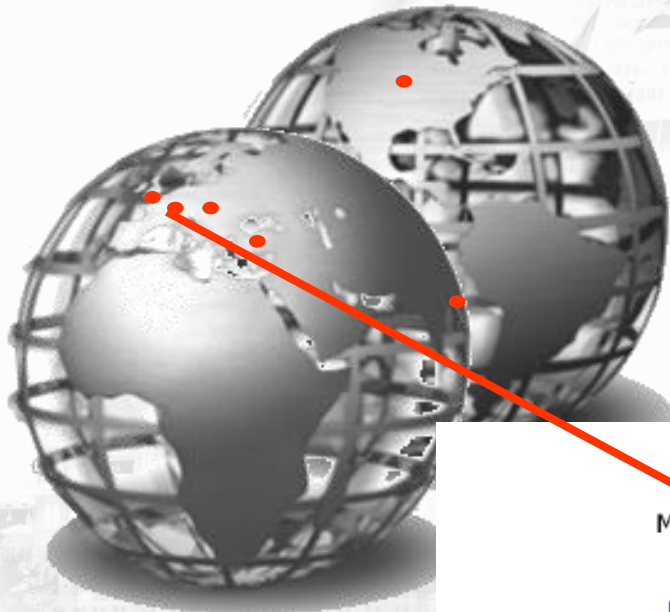
ATMO
UN **sphere**
technology summit
natural solutions

green.freshness.worldwide **AHT**

AHT Rottenmann AHT Group

AHT

奥特 AHT



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





Factories in Austria and China

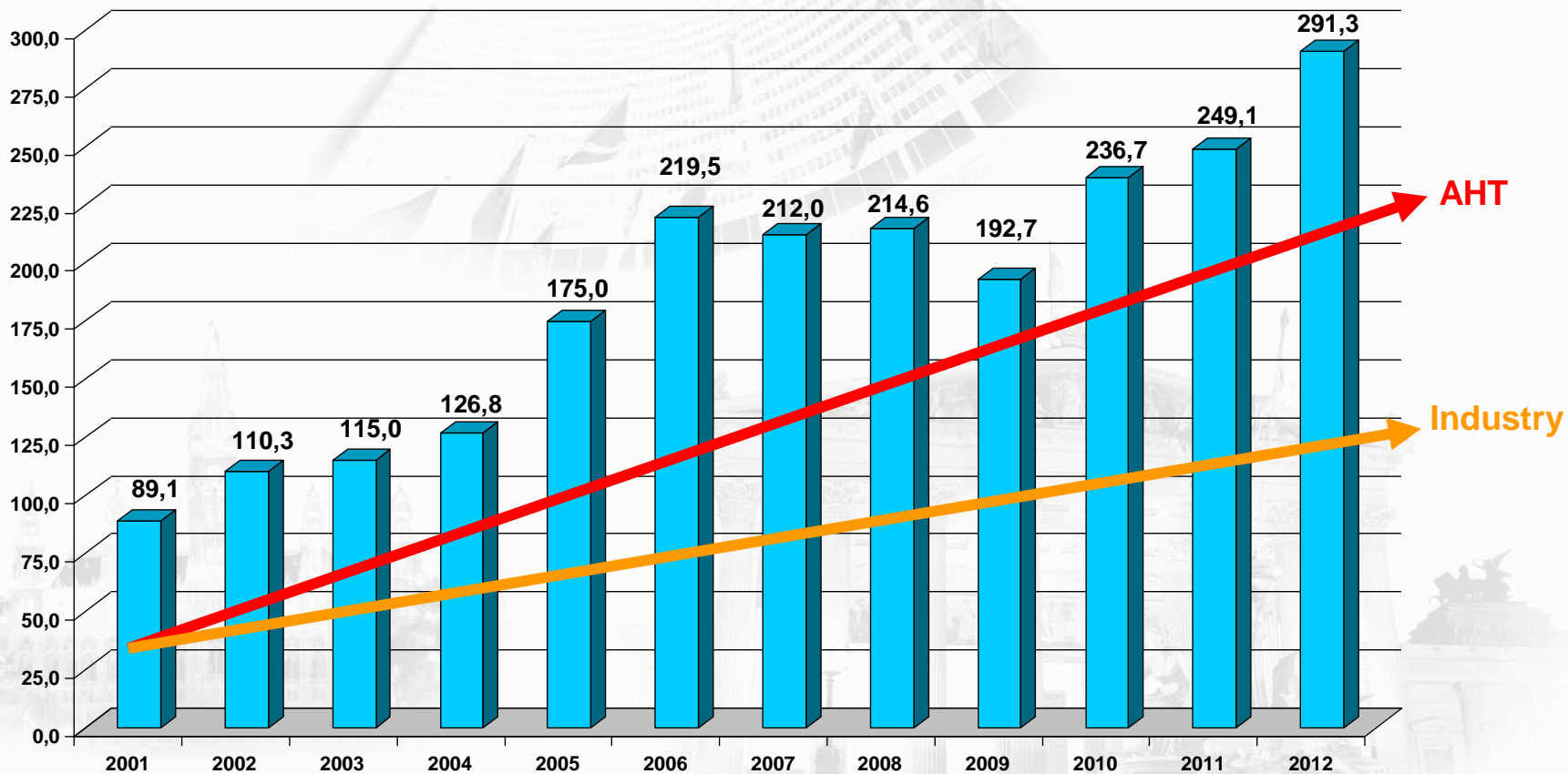


Quality management
according ISO 9001:2008

Environment management
according ISO 14001:2004



Turnover





Athen XL



Manhattan

Supermarket

NEW



Miami **ECO**



Athen XL **ECO**



Salzburg

R 290



Paris



Supermarket installations worldwide



Korea



Germany



Fresh & Easy, USA

More than
530.000 cabinets with R290
supplied to all over the
world



Key features in general

- stand-alone cabinets or banked together in an isle each with an independent refrigeration circuit
- environmental friendly
 - **natural** refrigerant and low energy consumption
- significant energy savings compared to remote systems
- products are kept in perfect temperature
- large volume capacity
- best visibility due to curved lids and lowered front edges
- flexibility in the store (plug in solution)
- 60% reduction in running costs compared to open top freezers
- available with internal light
- low capital costs



Key features in Thailand (SIAM MAKRO Thailand)

- installations since 2007, ECO and LED version since 2013
- total numbers of installed cabinets 2750 units
- in average 64 units per store

Store information / feed back

- significant electricity savings
- product temperature -18° to -22° (@ 25° C; 60%)
- no AC during the night time
- performance is very well
- very low failure-rate and no maintenance
- **Carbon reduction per year: 404 tons**





TEWI = total equivalent of warming impact

- **TEWI – influences**

- direct influences

TEWI =

Natural refrigerants

- indirect influences

- energy consumption

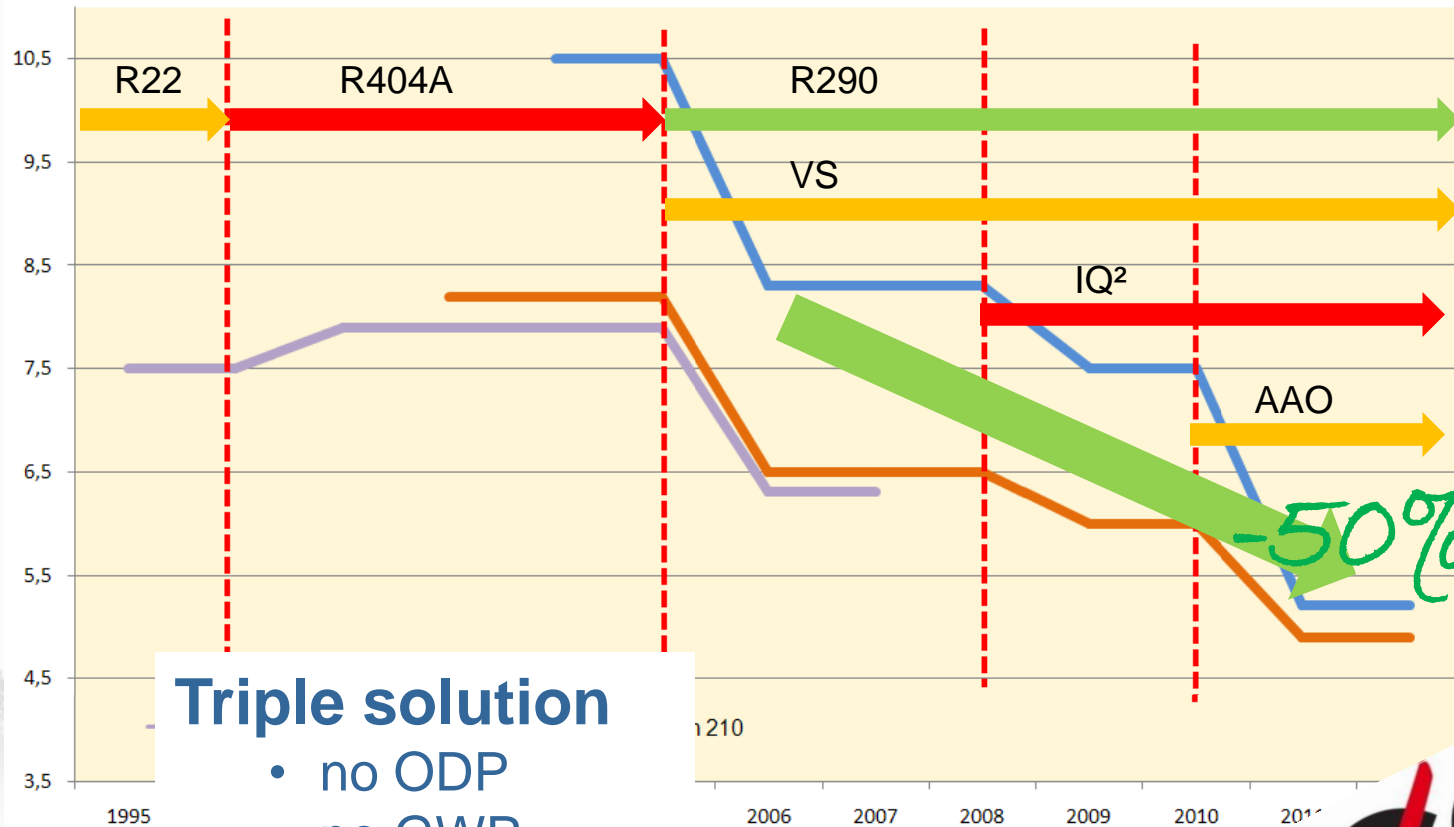
→ (n x E x beta)



Reduction of the energy consumption



Energy consumption in kWh/24h



Triple solution

- no ODP
- no GWP
- minimal TEWI





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3 - 4 June 2013 in Vienna

Thank you



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