

Changing the cold-chain partnership



DAIKIN



with practical solutions

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The Cold Chain challenges



Regulatory – Global requirements

Kigali

Global implementation of the Kigali Amendment would prevent up to 80 billion tonnes CO₂ equivalent of emissions by 2050.

- The global phasedown of hydrofluorocarbons (HFCs) - powerful greenhouse gases – to combat ozone depletion.
- Need to reduce GWP
- Increasing efficiency demands and environmental legislation is driving an intensification in the use of CO₂ refrigeration.

Regulatory – Regional requirements

No single standard

USA

ANSI / ASHRAE 15 / UL471 standards

Europe

EN-378 / EN60335 standards

Asia

ISHRAE / ESMA standards

Far east

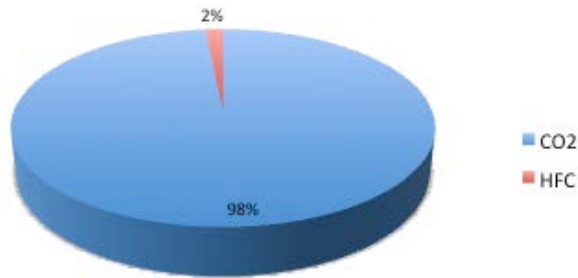
JRIARA / GB-T 36160 standards

Australasia

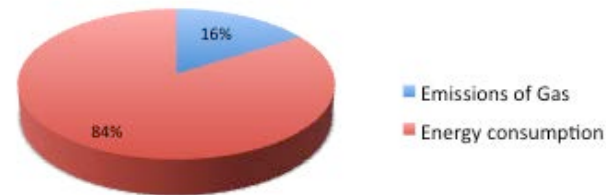
AIRAH / AS/NZS 5149 standards

Losing sight of the problem

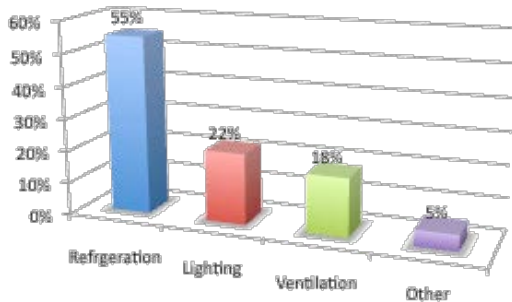
Green House contribution by Gas



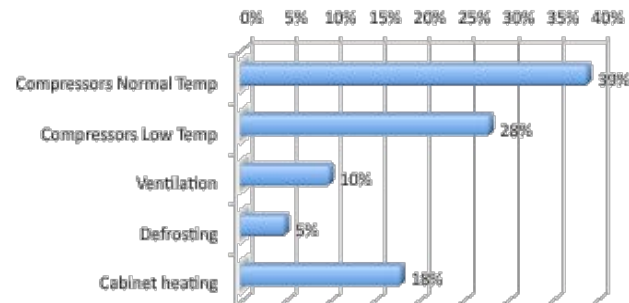
Green house emission by type of emission



Energy consumption in a Supermarket



Refrigeration energy consumption



Solutions - that enable communities

From subsistence fishing -
high level of waste



through beach front
ice plant

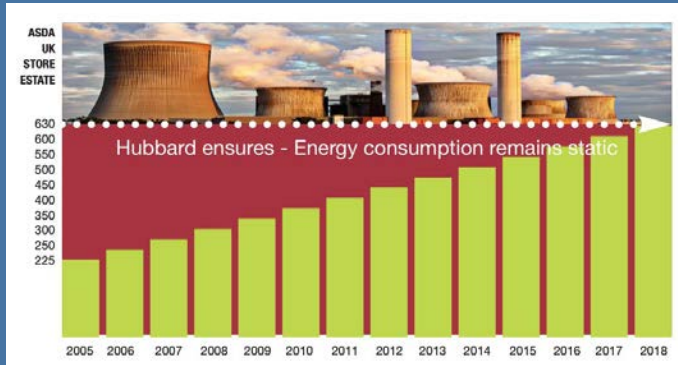


and low cost local distribution



To sustainable - commercial fishery

Solutions - bespoke partnerships



Affiliate relationship



The ASDA Hubbard story

- Increased cooling capacity
- Doubles size of estate for lower GWP
- Minimises leakage at 5%
 - *European average traditionally up to 22%
 - • Non-European average traditionally up to 50%
- Superior load balancing
- Reduced energy consumption

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Thank you

