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.
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**
- CO2: 98%
- HFC: 2%

**Green house emission by type of emission**
- Emissions of Gas: 16%
- Energy consumption: 84%

**Energy consumption in a Supermarket**
- Refrigeration: 55%
- Lighting: 22%
- Ventilation: 18%
- Other: 5%

**Refrigeration energy consumption**
- Compressors Normal Temp: 0%
- Compressors Low Temp: 5%
- Ventilation: 10%
- Defrosting: 5%
- Cabinet heating: 18%
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

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

Affiliate relationship
Pat Maughan
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Thank you