

# Food Technologies and Practices to Reduce the Energy Inputs into the Refrigeration of Food

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A decorative graphic at the bottom of the slide consisting of three overlapping, wavy bands of blue, ranging from a light sky blue to a dark navy blue.

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# UK Food Production Overview



- UK Food Production Industry generated £54.2bn revenue in 2006 (2.7% inc on 2005). Projections for 2011 are £61.9bn
- Consumed 34,173 GWh in 2006; 14% of total energy consumption across all industries, producing 9.1 MTCO<sub>2</sub>
- ~ 10% of all industrial use of the public water supply
- ~ 10% of the industrial and commercial waste stream
- ~ 25% of all HGV vehicle kilometres in the UK
- ~ 12.5% of the UK's workforce
- Recent moves towards an integrated approach in supply chain (field to plate), driven by retailers
- Heavily regulated sector
  - Production
  - Safety
  - Emissions Trading (EUETS)
  - Pollution (IPPC)
  - Health & Nutrition

# UK Food Retail Overview



- The UK industry generated £122.8 billion in revenue in 2006, (3.4% inc from previous year. This growth can be attributed to the growing demand for luxury items, supermarket premium brands and sales of typically higher priced organic and health products.
- The industry is expected to continue with a similar growth pattern over the next 5 years, with an expected industry value of £143.3 billion by the end of 2011. Supermarkets generate 66.5% of the UK food retail industry revenue.
- In terms of energy use, the UK food retail industry is estimated to emit 9.2 MtCO<sub>2</sub> annually. Refrigeration accounts for some 60% of electricity consumption.
- Regulation
  - The Food Safety Act 1990;
  - The General Food Law (EC) 178/2002;
  - The General Food Regulation 2004;
  - Hazard Analysis Critical Control Point;
  - The Food Hygiene Regulation;
  - The Food Standards Act 1999;

# Energy use in refrigeration

- Refrigeration is one of the largest electricity users in UK (15% to 20% of all electricity)
- In many organisations it is the largest single energy user
- Direct GHG emissions from refrigerants
- Refrigeration used widely across the sector
  - Agriculture (e.g. milk cooling)
  - Production (e.g. chilled & frozen products)
  - Retail (e.g. refrigerated storage, air-conditioning)
  - Buildings (e.g. air-conditioning)
  - Transport (e.g. refrigerated lorries; mobile air-conditioning)

# Government initiatives

- Regulation
  - ODS (2000)
  - F-Gas (2007) Revised (2009)
  - [www.defra.gov.uk/fgas](http://www.defra.gov.uk/fgas)
- Kyoto Protocol (HFCs)
- Montreal Protocol (HCFCs phase out)
- R22 phase out imminent
- F-Gas Support
- Opportunity for companies and refrigeration industry to influence future regulatory drafts by acting now
- Introduction of CRC

# The Carbon Trust is making business sense of climate change



Our mission is to accelerate the move to a low carbon economy by helping organisations reduce their carbon emissions and develop commercial low carbon technologies

We do this by being a catalyst for low carbon enterprise:

## Insights

Explaining the low-carbon economy



## Solutions

Delivering carbon savings for organisations



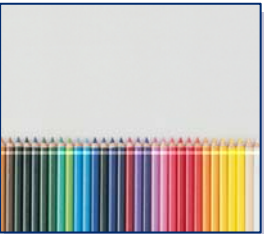
## Innovations

Developing new low-carbon technologies



## Enterprises

Creating new low-carbon businesses



## Investments

Financing low-carbon businesses



# Carbon Trust involvement in refrigeration sector



- IoR – Real ZERO leakage reduction
- BFFF – Carbon Savings in the Cold Chain
- BSRIA – Cold Cabinets
- FDF – Refrigeration Emissions Reduction in the Food Industry
- IoR – Refrigeration System Efficiency Toolkit
- CSDF – Reducing Carbon Emission in Cold Storage



# Carbon Trust Services / support for businesses



- Low Carbon Collaboration
- Carbon Management
- Energy Efficiency / Site Surveys
- Carbon Label
- Carbon Trust Standard
- Customer Centre Helpline (0800 085 2005)
- Interest Free Loans for SMEs
- Enhanced Capital Allowances
- Ongoing workshops on specific topics
- Web / Publications

**Thank you**

