Sustainable cooling solutions:

EMISSION REDUCTION IN FOOD FACTORY WITH PANASONIC CO_2 COMMERCIAL REFRIGERATION

CATEGORY:
Commercial Refrigeration

THE CONTEXT:
To achieve ambitious climate goals and comply with the EU F-Gas Regulation, small and medium scale refrigeration installations across Europe, in convenience stores, supermarkets, gas stations and cold stores will need to transition away from high global warming potential (GWP) refrigerants to alternative solutions. In this context, Tanpopo Japanese Food, a food wholesaler based in the UK, recently equipped its warehouse in Feltham, West London, with condensing units from the Panasonic CO_2 Cold Chain range, replacing old R404A units and thus improving its environmental impact and increasing the energy efficiency of the warehouse.

SUSTAINABLE COOLING SOLUTION:

- Panasonic CO_2 Cold Chain commercial refrigeration range for frozen and chilled food storage, specifically developed for small to medium capacity applications within the retail and food service sectors.
- Reliability, compact size, unique two-stage Panasonic compressor, easy installation and use of the natural refrigerant CO_2.
- Compatible with a range of different control systems.
- Xavier Debray, Managing Director of Versan Ltd, installer of the solution, commented, “One of the pre-requisites for many supermarket chains now is to review their supply chain and their green credentials, such as the use of renewable technology during their processes. The Panasonic units use CO_2, a very attractive natural alternative to conventional refrigerant gases. CO_2 has a zero ODP (Ozone Depletion Potential) and a GWP (Global Warming Potential) equal to 1 (compared to a refrigerant like R404A with a GWP of 3922).”

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BENEFITS:

- Environmental friendliness: Operating with CO_2 as refrigerant
- Easy-to-install and compatible: reliability (already proven its value on the Asian markets for more than 10 years), compatibility with a range of control systems. Due to the low charge of CO_2 required by the units, no additional leak detection equipment is necessary for this application.
- Energy efficiency: The cooking and manufacturing process in the factory results in ambient temperatures of up to 43°C, so any refrigeration units chosen must be able to operate efficiently even in these extreme conditions.
- The technology allows to reduce the CO_2 emissions by 67% compared to an equivalent R404A system, thanks to energy savings (25,4% energy consumption reduction in freezing mode and 16,2% in refrigeration mode) and reduced GWP.
- This system can be coupled with heat recovery function for heating.

Comparison of CO2 emissions.

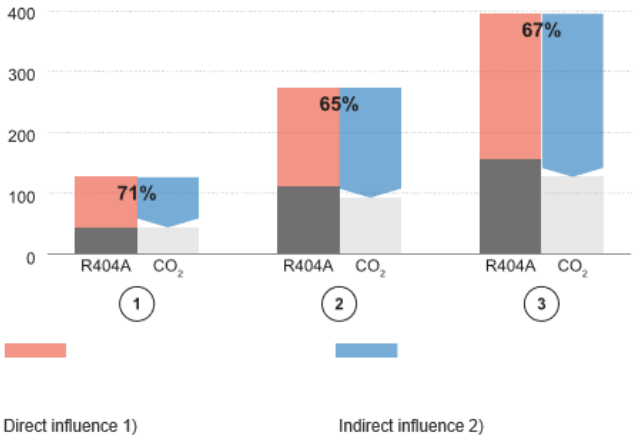
ENERGY SAVING: 25,4% Freezer / 16,2% Refrigeration

CO2 EMISSION: 67% Reduction

Unit: t/year
1. Freezer temperature. **2.** Refrigerator temperature. **3.** Total (Our own research in Japan).

1) Direct influence presents the effect of refrigerant leakage comparing R744 (CO2) with R404A. 2) Indirect influence presents CO2 emissions linked to power consumption of CO2 unit and conventional units.

By Panasonic research in Japan. Comparing 6 shops average for R404A inverter multi condensing unit.



TOPIC:
Energy Efficiency

GENERAL INFORMATION

NAME OF THE COMPANY:
Panasonic, Panasonic Heating & Cooling Solutions

CONTACT PERSON:
Tony Nielsen

HYPERLINK TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION: \
Link to the technology page:
https://www.aircon.panasonic.eu/GB_en/happening/panasonic-condensing-units-with-natural-refrigerant/
Link to the case study:
https://www.aircon.panasonic.eu/GB_en/cases/case/uk-based-food-factory-installs-panasonic-co2-commercial-refrigeration-to-cool-and-freeze-sushi/