



New World becomes New Zealand's first CO₂ transcritical store

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New World in Devonport, part of the Foodstuffs supermarket chain has become the first store in New Zealand operating with CO₂ transcritical technology. Designed by Arneg New Zealand, the natural refrigerant-based installation has not only made the store more energy efficient but will also help avoid increased costs resulting from upcoming changes to New Zealand's emission trading scheme. (+VIDEO)

John Ashton, the owner and operator of Devonport New World, said in a statement that being the first supermarket to take up the technology was "gratifying".

The first-state-of-art CO₂ system, originally coming from Europe, has been adapted to the country's conditions and installed by Arneg New Zealand, the country's only fully owned and operated supermarket refrigeration business.

Key store features

The project is a full upgrade of a 26-year-old supermarket with new cabinets throughout. At the heart of the store are two newly designed and constructed CO₂ racks. A booster system provides cooling to the Low Temperature (LT) and some Medium Temperature (MT) fixtures, with the remainder of the MT load being cooled by the second CO₂ rack. A specially designed recovery system draws energy from both racks to heat the retail area of the store as well as the hot water supply for the entire store's hot water requirements.



The air conditioning system has also been completely upgraded and has its control system integrated with the refrigeration controller to maximise use of free heating in winter and cold air recirculation for free cooling in summer.

In addition to the refrigeration and air-conditioning system, the supermarket has improved its energy efficiency and reduced its carbon footprint thanks to other features including:

- LED case lighting
- EC fan motors
- Electric night blinds
- Twin air curtain on the dairy and meat cabinets
- Sliding glass lids on the trough freezers

Future-proofed against NZ ETS

Recently, the government of New Zealand announced changes to the New Zealand Emissions Trading Scheme (ETS). The government has decided to introduce a carbon equivalent levy on synthetic greenhouse gases as of 2013, instead of the ETS obligation on the importation of synthetic greenhouse gases in goods. Provided this proposal is approved in the Parliament it would result in increased price of air conditioning and refrigeration equipment using HFCs.

When the law comes into effect in 2013, the New World supermarket in Devonport will avoid the impact of the legislation thanks to its innovative new refrigeration technology.

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