



# ALDI turns to water-loop CO<sub>2</sub> in Melbourne

ALDI Australia has installed the world's first 'EptaBlue Natural' CO<sub>2</sub> water-loop refrigeration system. The system, in a central Melbourne supermarket, was commissioned last September.

**S**ince ALDI opened its first store in Australia in 2001, the company has been growing steadily, claiming an increasing share of Australia's supermarket sector.

By spring 2018, ALDI Australia had opened over 500 stores, along with eight distribution centres, spanning every state (see '*ALDI banking on natural refrigerants in Australia*,' *Accelerate Australia & NZ*, autumn 2018).

And on 12 September 2018, it reached another milestone in this journey with the commissioning of a CO<sub>2</sub>-based water-loop system in a Melbourne CBD location.

Originally opened 12 years ago, the refurbished store – located in a multi-storey high-rise building in Melbourne's central business district – puts the natural refrigerant-based system at its heart.

AJ Baker & Sons Pty Ltd. installed and commissioned the 'EptaBlue Natural' refrigeration system from Italian multinational manufacturer Epta.

"This is the world's first installation of the EptaBlue CO<sub>2</sub> units," Claus Mecklinger, director, AJ Baker & Sons, told *Accelerate Australia & NZ*.

"The challenge for a full refrigeration refurbishment was to find a system able to respond to ALDI's need for a

self-contained solution, equipped with a small machine room, without having to compromise in terms of performance, efficiency or sustainability," Mecklinger said.

Variable-speed CO<sub>2</sub> compressors modify the refrigerating capacity distributed to the load of the refrigerated unit according to external conditions, such as the number of customers in the store, the season, and whether it is day or night.

Asserting that the 'EptaBlue Natural' is, "the ideal water-loop system to meet these needs," Epta reports that it "reduces the complexity of installing the refrigeration system while limiting energy consumption and noise level".

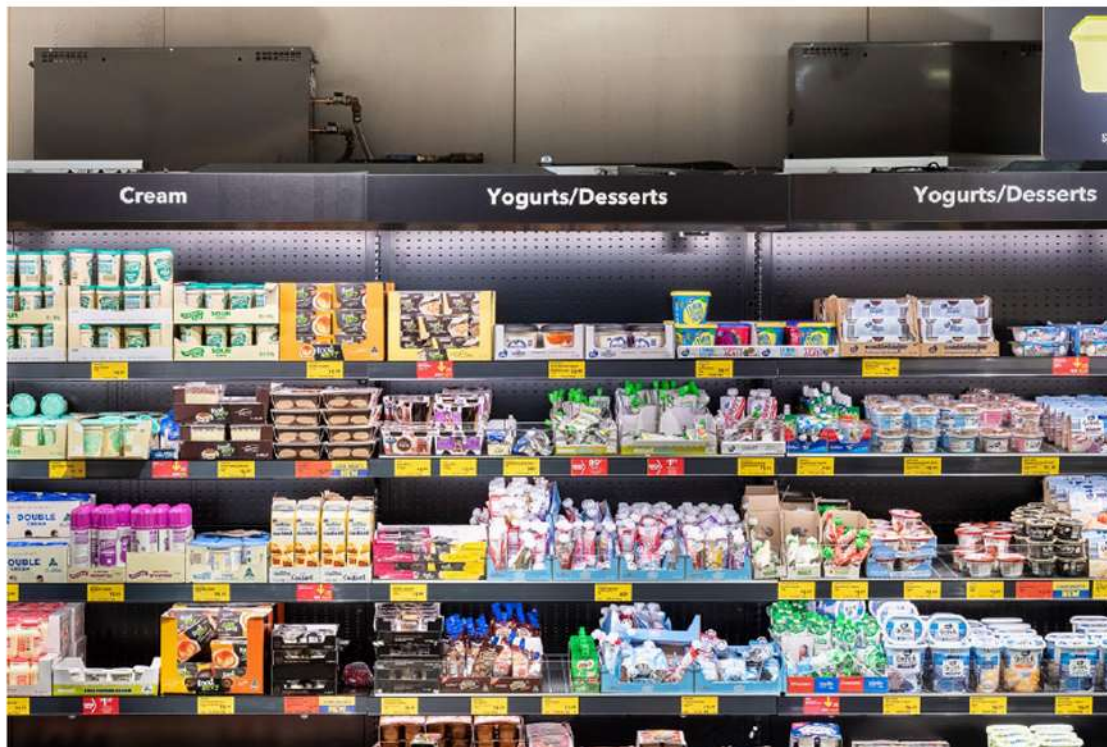
"With EptaBlue Natural, the 40m run of Epta brand Bonnet Névé's Strateo chilled open vertical cabinets are equipped with their own on-board refrigeration unit that transforms them from remote cabinets to integral cabinets, thanks to a water loop," said Epta.

The system allows the store to accommodate up to 60 metres of vertical cabinets, granting ALDI the flexibility to expand the refrigerated area in future if necessary. "This could not have been done using a traditional system due to lack of space in the machine room," Epta said.

"The cabinets used are the standard ALDI specification Strateo model with

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a CO<sub>2</sub> evaporator," says Mecklinger. "Each cabinet has an EptaBlue water-loop unit installed on top of the cabinet."

ALDI Australia is part of Germany-headquartered ALDI Süd (South), which is a leading adopter of natural refrigerant technology in Europe and the United States.

In addition to Australia and the U.S., ALDI South operates in China, and eight countries in Europe (Germany, Austria, the United Kingdom, Ireland, Hungary, Switzerland, Italy and Slovenia).

The use of natural refrigerants plays a key role in delivering ALDI Süd's worldwide target of reducing greenhouse gas emissions by 30% by 2020 (compared to a 2012 baseline).

In Germany, the company is now installing CO<sub>2</sub> transcritical refrigeration systems in all its new stores. It is currently the number one

user of CO<sub>2</sub> transcritical systems in the U.S. supermarket industry – counting over 130 stores, with more on the way.

Marcus Meier, who is responsible for ALDI Australia's refrigeration development activities, explains that investing in new technologies – including CO<sub>2</sub>-based refrigeration systems to phase out the use of R404A from stores – is central to achieving the firm's sustainability goals. ALDI Australia made its first CO<sub>2</sub> transcritical installation in Victoria in 2015.

"We've already achieved a 10-15% energy reduction and are expecting more," says Meier.

The firm's target is to achieve the highest possible energy efficiency and reliability for transcritical refrigeration systems, and to minimise the use of water – a particularly important issue in Australia, a drought-prone country.

In its 2017 sustainability report published in July 2018, ALDI Süd said it had installed transcritical CO<sub>2</sub> systems in 1,496 stores worldwide, 1,324 of which were in Germany, by the end of 2017.

2018 was marked by another first for ALDI Australia, which also installed its first Advansor CO<sub>2</sub> rack – in Melbourne suburb Gladstone Park.

Meier cites cost as an ongoing barrier for CO<sub>2</sub> transcritical in Australia, bearing in mind the extra capital costs of adding the parallel compression and adiabatic pads required to perform efficiently in the country's warm climate.

"We're currently working on a concept which might be able to avoid adiabatic pads altogether," he says, adding: "We're hopeful with these changes to reduce the cost for transcritical systems for Australia, which would mean we might be able to go 100% transcritical for all future stores."

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LEFT  
Machine room,  
Melbourne store.

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