



From left, Ignacio Chaparro from Kysor Warren, Michael Dellecave from The Kroger Co. and Peter Dee from Energy Recovery, presenting at ATMO America 2024.

## ATMO America: Kroger Will Use CO<sub>2</sub> Refrigeration in New Stores Starting in 2025

The company is also testing Kysor Warren Epta US's XTE technology, which features Energy Recovery's PX G1300 pressure exchanger.

Saroj Thapa    July 2, 2024    Commercial Refrigeration, North America



U.S. supermarket chain Kroger will install CO<sub>2</sub> (R744) transcritical units in all of its new stores starting in 2025, according to Michael Dellecave, Manager of Mechanical Services at Kroger, who made the announcement during a presentation at the [ATMOsphere \(ATMO\) America Summit 2024](#).

ATMOsphere is the publisher of [NaturalRefrigerants.com](#), and the ATMO America Summit 2024 was held June 10–11 in Washington, D.C.

Kroger currently has 12 CO<sub>2</sub> stores, and its decision to use the natural refrigerant in all new ones represents a major change from just three years ago [when it faced pressure](#) by shareholders and consumers to curb its HFC use.

"Kroger is making a significant step in its CO<sub>2</sub> adoption," said Dellecave. "We have five new CO<sub>2</sub> stores opening this fiscal year, and in 2025, all of Kroger's new stores will be CO<sub>2</sub> transcritical systems. This move is part of a larger ESG strategy to phase out HFCs and transition to more sustainable refrigeration solutions."

"Kroger has been committed to reducing our emissions for quite some time," added Dellecave, who highlighted the company's initiatives to replace old equipment and improve refrigerant leak detection systems during his presentation.

Dellecave presented at ATMO America alongside Peter Dee, Director of Sales Services, CO<sub>2</sub>, at [Energy Recovery](#), and Ignacio Chaparro, Sustainability and New Technologies Manager at [Kysor Warren Epta US](#).

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Dellecave compared the energy usage and cost of four similarly sized Kroger stores in the Cincinnati area, with three of the stores using HFO blend air-cooled systems and one using transcritical CO<sub>2</sub>. Data from the four stores showed that the CO<sub>2</sub> system was comparable to the HFO blend stores in terms of energy cost and kWh use per square foot.

"The CO<sub>2</sub> booster systems are not the hurdle we feared them to be, and our technicians are learning them thanks to training available in the industry," said Dellecave.

Dellecave noted that the one in Cincinnati will be its first to experiment with Kysor Warren Epta US's XTE technology.

### **XTE in action**

XTE consists of Energy Recovery's PX G1300 pressure exchanger and a transcritical CO<sub>2</sub> booster system. The PX G1300 recovers energy from the high-pressure side at the gas cooler discharge instead of allowing it to dissipate through the expansion valve. This recovered energy, which comes from the pressurized CO<sub>2</sub>, is then used to compress low-pressure CO<sub>2</sub> vapor from the receiver into high-pressure gas. The high-pressure gas is then fed back into the gas cooler, completing the pressure exchange cycle.

Combining the PX G1300 with a transcritical CO<sub>2</sub> booster system has led to significant energy savings, according to Chaparro.

"We do have some installations in Europe, and the data we have seen shows that we can improve the system efficiency [from] 15 to 25% compared to a standard transcritical CO<sub>2</sub> refrigeration system depending on the ambient conditions," Chaparro stated.

Dee said Energy Recovery currently has four PX G1300 installations in the U.S. and "multiple" across Europe, with "another few coming" with an unnamed end user. He noted that the PX G1300 is a bolt-on solution, enabling end users to conduct independent tests of its performance.

"They don't need to rely on energy recovery to prove the technology," he remarked. "We know it works."

Energy Recovery's focus on working with OEMs was a major focus for Dee, who stressed the importance of collaboration in driving CO<sub>2</sub> refrigeration forward in the U.S.

"We all have to come together and work on these new technologies because in the U.S., when we look at new technologies, there's kind of a fear," said Dee. "We shouldn't step back. We should embrace it."

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**Michael Dellecave, Manager of Mechanical Services at Kroger**

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 CO2 Refrigeration Systems, Kroger