

# HONEYWELL AND KMW EQUIP EDEKA WITH COST-EFFECTIVE AND SUSTAINABLE SOLUTION

## Case Study

When KONSUM Optimal-Kauf eG, the owner and operator of an all-new Edeka supermarket in the German town of Erxleben, required an environmentally-compliant cooling and heating system for the store, it called on the expertise of Limburg-based refrigeration specialist KMW. Powered by ultra-low global warming potential (GWP) Honeywell Solstice® L40X (R-455A) refrigerant, the advanced hybrid system delivers maximum performance and efficiency at minimal cost, setting a new sustainability benchmark for Edeka supermarkets.

### BACKGROUND

Sustainability is a key focus for Edeka, the largest supermarket group in Germany. Founded in 1898, the retailer has long been a pioneer and innovator in its sector, and today it invests in environmentally-friendly technologies that benefit both its business and the planet – and meet the all-important expectations of its customers.

Opened in November 2020, Edeka's state-of-the-art store in Erxleben exemplifies how the company is breaking new ground. To minimize energy consumption and related costs at the site, KONSUM Optimal-Kauf eG, the owner and operator of the store, decided to implement a KMW-designed, state-of-the-art hybrid refrigeration system powered by Honeywell Solstice L40X (R-455A) refrigerant.

KONSUM selected KMW and Honeywell because the companies met its requirements for a flexible, environment-friendly, and above all energy and cost-efficient cooling and heating system. Another factor was the companies' longstanding track record of success in food retailing.

*Reflecting on the success of the deployment, KMW Sales and Service Director Goran Simic says: "Our hybrid system, in conjunction with Honeywell Solstice L40X, demonstrates that it's possible to implement a refrigeration system that minimizes investment, operating and maintenance costs while also meeting an operator's climate goals. We're proud that this collaboration has resulted in a sustainability milestone for KONSUM and Edeka."*



Inside the Edeka Supermarket.  
Photo courtesy of KMW.

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## SOLUTION

KMW developed its R-455A hybrid refrigeration system in 2017 and since then has deployed it at Edeka and NP stores throughout Germany where it has demonstrated electricity and heating cost savings of 30% compared to conventional central refrigeration systems. The system's efficiency is boosted by recycling waste heat from the cooling and freezer units which is fed into a store's heat recovery system and used to heat the sales floor as required. In fact, the system's energy consumption is approximately 40% lower than plug-in refrigeration units without heat recovery.

The 1,000 m<sup>2</sup> implementation at Edeka Erxleben features 30 meters of display cabinets, 20 plug-in hybrid freezers, a cold room and a freezer room. All cooling and freezer cabinets are operated via decentralized hybrid modules that are installed on each of the refrigerated cabinets, meaning

that a central refrigeration system is not necessary. Moreover, it results in the high reliability of the refrigeration supply since there can never be a failure of the entire system.

Due to the short piping lines, the store can be operated on just 20 kg of refrigerant. The system's operating costs are 35% lower costs than a comparable CO<sub>2</sub> system and the unit can be expanded and flexibly adapted to merchandizing needs. Furthermore, it offers easy maintenance and implementation.

The Solstice L40X (R-455A) refrigerant, meanwhile, maximizes the efficiency of the low- and medium-temperature cooling and the waste heat processing. With its low GWP of 148, this safe Honeywell solution enables KONSUM to meet forthcoming European F-Gas requirements which mandate the use of refrigerants with GWP of less than 150 in new systems as of January 1<sup>st</sup>, 2022.

## BENEFITS OF THE KMW 455A SYSTEM WITH HEAT RECOVERY

### Financial Benefits

- Saves 30% on electricity and heating costs compared to central refrigeration systems.
- Offers 40% lower energy consumption than plug-in systems without heat recovery.
- Delivers 35% lower investment costs than comparable CO<sub>2</sub> systems.
- Saves on construction or refurbishment time.

### Reliability and Flexibility Benefits

- Takes up less space than conventional systems thanks to compact footprint.
- Yields a reliable refrigeration supply.
- Can be flexibly used in everything from all-new store designs to shop re-arrangements or extensions.
- Simplifies system maintenance.



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## For more information

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