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## Romania: more CO<sub>2</sub> transcritical stores planned following success of first installation

19 November 2014

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One year on since the first CO<sub>2</sub> transcritical installation in Romania, R744.com talked to the key companies involved in the Galati store installation to find out how the system was performing. So far the system, which uses parallel compression, has achieved better energy efficiency than first predicted. As a result, another four new CO<sub>2</sub> systems are being planned in Carrefour hyperstores in Romania. Overall, the number of transcritical CO<sub>2</sub> stores in warm climates is expected to grow and reach 100 installation in two to five years time.

With over 2,800 stores equipped with CO<sub>2</sub> transcritical systems Europe remains the CO<sub>2</sub> transcritical leader worldwide in terms of number of installations. Romania is the latest EU member state to trial the technology, completing its first installation in November 2013. Frigo-Consulting Ltd engineered, designed and executed the project, Frigotechnica commissioned, installed and will provide maintenance of the system, and Advansor supplied the system. The CO<sub>2</sub> transcritical Carrefour store in Galati, has performed reliably, according to Torben Hansen, Commercial Product Director of Advansor,



“The service technicians have been truly excellent. My colleagues returned back being amazed with the skill level, probably amongst the best in Europe, they report,” said Torben Hansen.

**New stores to use system identical to the first installation, which is “perfect solution for warm climates”**

Following the success of the first installation, four new CO<sub>2</sub> TC stores are being engineered, implemented and commissioned for Carrefour hyperstores in Romania. Each new store will feature an identical CO<sub>2</sub> refrigeration system to the first store, in combination with parallel compression and an external hydrocarbon subcooler, designed to improve efficiency in the warm climate. Only one store, in the Transylvania area (Carrefour Brasov), does not rely on a hydrocarbon subcooler.

Marcus Hoepfl, Head of International Projects at Frigo-Consulting AG, explained that the first installation has performed better than what was projected in the initial theoretical feasibility study, saying that “the concept of the first store (Carrefour Galati) is a perfect solution for warm climates.”

“Razvan Voicu, Operation Manager at Frigotechnica Srl. said, “we have experienced how important parallel compression and gas subcooling is for our region. The Bucharest-Vulcan project relies on subcooling, without which the plant works in very high load conditions. As soon as the chiller is working we can observe a clear difference and improvement in operation.”

### 30% energy efficiency increase using CO<sub>2</sub> transcritical system

Among the four new stores planned, a CO<sub>2</sub> system in the hypermarket in Brasov is being remodeled from an original R404A system, and a 30% energy efficiency improvement is expected.

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## 100 new transcritical stores expected in warm climates in the next five years

According to Advansor approximately 10 CO<sub>2</sub> transcritical installations in warm climates have already been completed, a number expected to increase to 100 in two-five year's time. Several of these will be Carrefour stores.

“Probably Carrefour will continue with transcritical projects next year. Other retailers are developing hybrid solutions,” said Razvan Voicu from S.C. Frigotechnica SRL.

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