Solstice

MD IS FIRST SUPERMARKET IN ITALY TO USE SOLSTICE® L40X (R-455A)

CASE STUDY



When MD S.p.A., one of the fastest-growing Italian supermarket chains decided to accelerate the conversion of its in-store refrigeration systems to a long-term and eco-efficient solution it turned to Solstice. Following a comprehensive analysis based on Solstice's independently validated Eco-Efficiency simulation model, the retailer is implementing low GWP Solstice® L40X (R-455A) refrigerant at its San Giovanni in Persiceto supermarket near Bologna – and the results look promising.

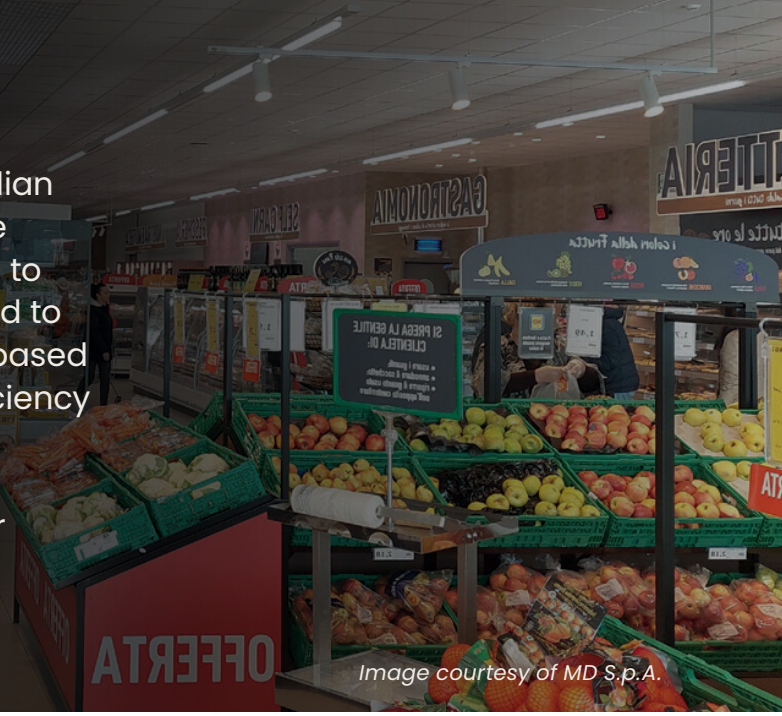


Image courtesy of MD S.p.A.

BACKGROUND

Consumers across Italy know that when they see the distinctive yellow, red and blue MD supermarket logo, they'll be able to get whatever type of food they're looking for, from everyday supplies such as pasta, milk, cheese, meats, fruit and vegetables, to celebratory treats such as prosecco and cakes – all at affordable prices. So compelling is the brand's value proposition that MD is now the second-fastest growing supermarket chain in Italy, with 15% year-on-year growth and €3.4 billion in annual turnover.

Part of Lillo Group S.p.A., a privately-owned holding company encompassing homeware, electronics, food and beauty, MD S.p.A. operates more than 800 supermarkets across Italy. Of these, 45% are classed as small (less than 1,000 sq m); 32% are medium-sized (between 1,000 and 1,500 sq m); and 23% are large (more than 1,500 sq m).

The stores are served by 8,000 employees and eight logistics centers. To keep pace with market demand, MD plans to open 30 greenfield new stores and remodel a further 25 every year.

In line with regulatory requirements and the expectations of its customers, MD has introduced efficiency and sustainability guidelines for all of its stores, mandating the use of LED lighting, remotely-controlled refrigeration systems, electricity monitoring, and photovoltaic systems – powering the company's logistics centers are three 2.3 MWp, 1 MWp and 0.8 MWp photovoltaic plants. Meanwhile, the company's refrigerated truck fleet is now propelled by 100% clean energy.

One of the key questions MD considered when developing its sustainability plan, was what type of refrigerant should it use at its new and renovated sites?

CHALLENGE

MD sought a low globalwarming- potential (GWP) refrigerant that would allow it to move to a long-term, sustainable technology for new stores and remodelings.

Criteria for new refrigerant:

- Comply with long-term regulatory requirements at national and European level.
- Contain lifecycle costs including investment, electricity and maintenance.
- Lower overall emissions of both Scope 1 and Scope 2.
- Reduce carbon footprint.

SOLUTION

MD was already familiar with Solstice refrigerant brand. Several years ago, the retailer decided to retrofit its existing stores with Solstice N40 (R-448A), extending the lifetime of its refrigeration assets while reducing their carbon footprint. For new stores and remodelings, it continued to use R-744 and glycol chilling systems.

Given the short timescale however in which to implement its growth and new store opening plans, MD decided to contact Solstice for advice. Using its Eco-Efficiency model, validated by the independent technology consultant Cemafroid, Solstice undertook a detailed analysis of MD's sustainability requirements to identify a refrigerant solution that would meet its criteria.

After reviewing and discussing the options available, MD selected Solstice L40X (R-455A) refrigerant. Why? The analysis revealed that when used in the appropriate refrigeration system architecture, Furthermore, the Solstice solution was safe, reliable, flexible, and could be easily installed and serviced by refrigeration contractors.

As a next step, MD, Solstice and ARNEG – a technology and turnkey solution provider to the food retail industry – decided to implement this refrigerant solution in a 1,500 sq m new MD supermarket in San Giovanni in Persiceto, near Bologna in northern Italy.

Solstice L40X provided the lowest total cost of ownership and lowest overall environmental impact among the alternatives considered.

EXPECTED RESULTS

At the MD store in Giovanni in Persiceto, Solstice L40X is projected to support a lifetime cost savings of approximately €260,000 and 25% lower lifetime emission scompared with carbon dioxide as a refrigerant for that store alone[1].

MD and Solstice plan to monitor electricity consumption and other performance metrics at the store as part of a university PhD research project. If the results meet expectations, MD will roll out Solstice L40X to most newly-built and remodeled supermarkets over the years ahead.



Image courtesy of MD S.p.A.

[1] Results are based on data input from MD and specific analyses using Solstice's Eco-Efficiency model, which has been independently validated by Cemafroid.

For More Information Visit
https://www.solstice.com/us/en

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