

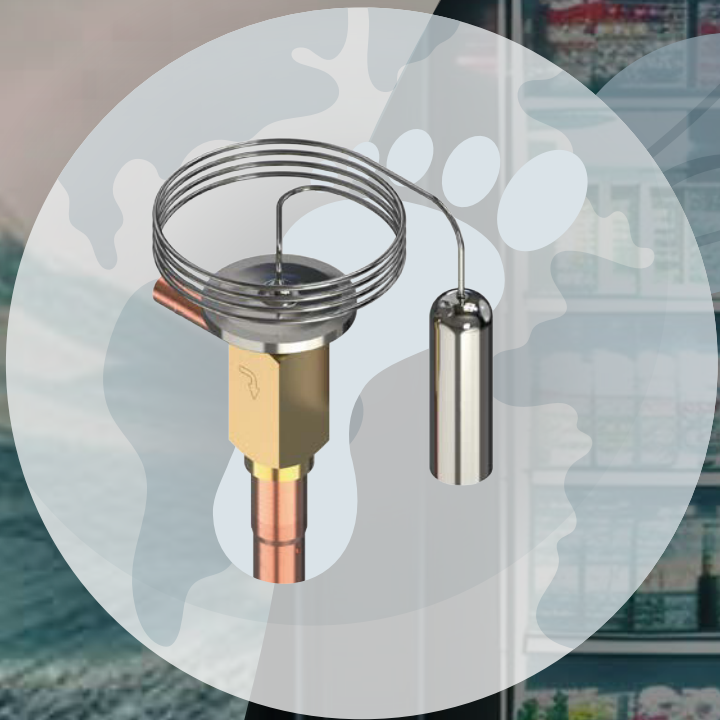
ENGINEERING
TOMORROW



Case Story | Carbon Emissions Reduction

Danfoss Achieves **74% Carbon Emissions Reduction** in Expansion Valve Production

In a step towards sustainability, Danfoss has significantly reduced carbon emissions in the production of thermostatic expansion valves (TXV). Using low-GWP refrigerants, Danfoss has cut emissions by 74% compared to 2019, with an ambitious goal of reaching an 85% reduction by 2030. This initiative not only supports Danfoss decarbonization targets but also aids customers in their own sustainability efforts.



Walking the talk: How we're accelerating our decarbonization journey with low-GWP refrigerants

In 2020, Danfoss took a significant step forward in our decarbonization journey. We committed to science-based targets, which the **Science Based Targets (SBT) Initiative validated and approved in 2022**. Those targets are to reduce our absolute scope 1 and 2 GHG emissions by 46.2% by 2030 from a 2019 base year, and our absolute scope 3 GHG emissions by 15% within the same timeframe. In addition to that, we've committed ourselves to decarbonizing our own operations by 2030 and reducing our scope 3 upstream emissions by 25% by the same year.

Reducing carbon emissions by 74% in expansion valve production

"In 2015, when the EU passed the F-gas regulation, we put together a team to identify low-GWP refrigerants that we could use in our TXV valves," explains Lasse Nicolai Langmaack, Product Director, Mechanical Expansion Valves. "Each TXV valve holds only a small amount of refrigerant gas. However, **as one of the largest players globally, producing in large quantities, even small reductions have a significant impact** on our overall CO₂ emissions." The team spent hundreds of lab hours to find the right low-GWP refrigerant mix, and that investment of time and resources has paid off.

Partnering with customers on their decarbonization journey

The strides Danfoss is making in decarbonizing its products benefits customers as well. "Decarbonization is really a joint initiative across the entire value chain," states Johanna.

"Danfoss wants to be our customers' preferred decarbonization partner, and by reducing the carbon footprint of our expansion valves, we help our customers on their journey towards a sustainable future."

Reaching these targets requires rethinking the way we operate across our entire value chain. We've developed a three-step approach to help us get there: reduce, re-use and re-source.

"At Danfoss, we believe the greenest energy is the energy we don't use," says Johanna Grant, Senior Director RAC Engineering & ESG. "That's why we work with our customers to help them improve energy efficiency. At the same time, we also want to optimize and decarbonize our own products, as we've been doing for some time with the production of our thermostatic expansion (TXV) valves."



In 2023, we have reduced carbon emissions by 74% on our TXV expansion valves compared to 2019, and our goal is to achieve an 85% reduction by 2030.

Lasse Nicolai Langmaack
Product Director
Mechanical Expansion Valves, Danfoss



Lasse agrees and points out that the use of low-GWP refrigerants is just one area where the TXV valves reduce customers' carbon footprint. "Our valves maintain a constant low superheat, which enables the refrigeration system to run at its most energy efficient way," he says. "With this transition to low-GWP refrigerants, we reduce our valves' overall carbon footprint even further."



For more information about Danfoss' decarbonization journey, visit the [Sustainability section](#) on our website.

Discover our [TXV valves](#) here.