

Building & Industry

NOVENCO 

SCHAKO Group

CS grupperen – NOVENCO[®] ZerAx[®] fan delivers reliable energy savings at $-30\text{ }^{\circ}\text{C}$

About the project

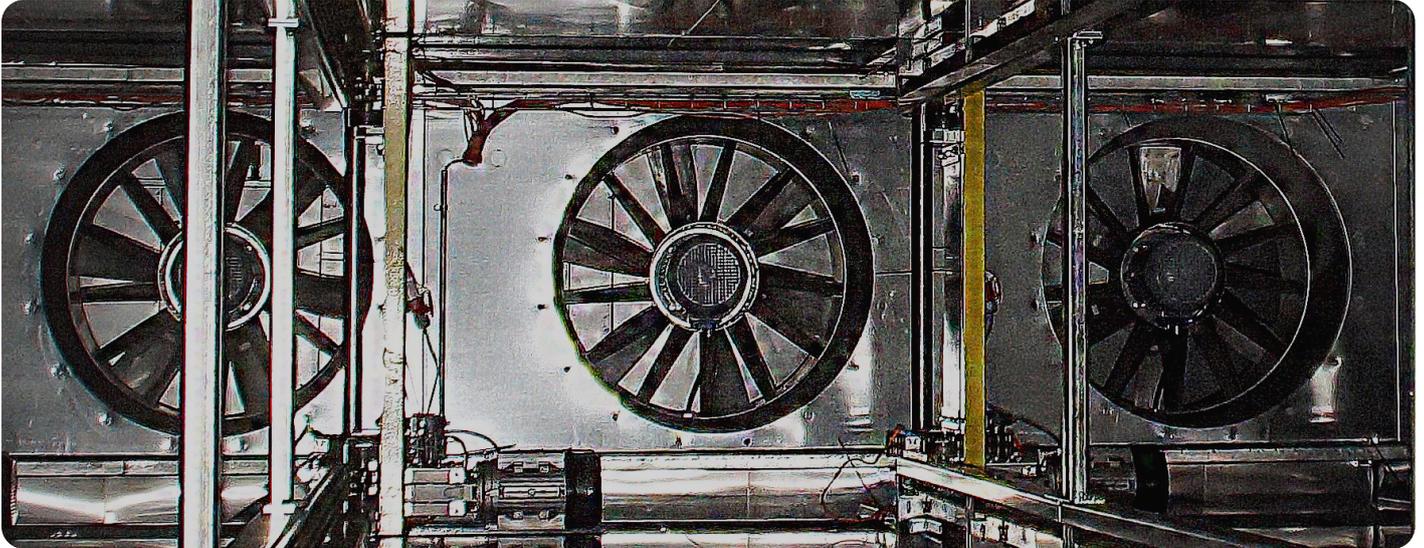
CS Gruppen A/S manages daily logistics for the Danish food industry and operates freezer plants across Denmark. From its Padborg facility alone, the company ships 250 – 300 tons of food per day — equal to 200,000 pallets a year.

The business freezes up to 1,800 tons of fresh meat per day. Meat is frozen at $-30\text{ }^{\circ}\text{C}$ and stored at $-18\text{ }^{\circ}\text{C}$ before it is transported worldwide in freezer trucks and containers. These extreme duty conditions require large energy inputs to maintain performance and product quality.

To expand capacity and meet modern environmental and technological requirements, CS Gruppen A/S reviewed the entire plant for energy optimisation. The aging 25 – 30-year-old fans in the freezing tower accounted for a significant share of the facility's power consumption and were therefore prioritised for replacement.



ZerAx fans operating at $-30\text{ }^{\circ}\text{C}$ installed in the freeze tower



Freezing tunnel at CS Gruppe, equipped with ZerAx fans for ultra-low temperature operation

The solution

Freezing fresh meat demands stable performance under extreme cold and uncompromising reliability. After a detailed dialogue with three suppliers, each offering different technical approaches, the company chose NOVENCO's ZerAx axial flow fans.

Although the ZerAx solution had the highest upfront cost, the calculated return on investment was only 23 months. The short payback period is driven by the fan efficiency of up to 90%. The ROI is based on 5,000 operating hours per year; reduced running hours extend the payback time.

Equipment delivery

The freezing tunnel consists of four sections, each with an air volume of 100,000 m³/h. Fresh meat is placed in layers on gratings so air can circulate freely between the products and ensure rapid freezing.

Each section is equipped with a ZerAx AZL-900 fan delivering 25,000 m³/h. The AZL-900 reaches 90% efficiency and is supplied with high-efficiency IE3 motors designed for ambient temperatures down to -30 °C. The fans are delivered with a short outlet diffuser and silicone thermo cables that protect the casing against frost.



All fans are delivered with frost-protecting silicone thermo cables

Facts:

- Efficiency up to 90%
- ROI of only 23 months
- Saves approx. 365 tons of CO₂ per year