**81%**
Reduced $CO_2$

**53%**
Reduced energy

**80%**
Reused energy

BALS supermarkets

# Serving customers and saving energy

PROJECT ZERO
SONDERBORG

# Shaping tomorrow's supermarkets

Supermarkets are a cornerstone of modern society, and in Sønderborg Municipality, they contribute far beyond providing food.

Around 30 supermarkets serve the local communities across the Sønderborg area. 12 of these are part of Brugsen for Als & Sundeved (BALS) – a consumer cooperative where customers are co-owners and share in the profits.

These 12 BALS stores are taking bold steps to reduce their climate footprint. Since 2012, $CO_2$ emissions have been reduced by 81% through initiatives such as reusing excess heat, replacing gas with district heating, and implementing energy-saving measures.

Ongoing innovation in partnership with local technology company Danfoss helps them push their energy efficiency even further.

## About BALS

Counting 12 supermarkets in the Sønderborg area and more than 21,000 members, Brugsen for Als & Sundeved (BALS) is Denmark's largest independent consumer association.

A consumer association is one or more grocery stores owned jointly by a group of members to ensure access to cheap goods through joint purchases. The association's profits benefit the members.

At BALS, climate-friendly and sustainable solutions are high on the agenda. This includes a close cooperation with local food producers.

**Watch the case video**

## Reducing energy while testing new solutions

Since 2015, BALS supermarkets have worked consistently to reduce their energy consumption. Initially, focus was on straightforward upgrades – such as switching to LED lighting and adopting $CO_2$-based cooling systems. But improving energy efficiency is a never-ending task.

The supermarkets run targeted energy efficiency programs, continuously monitoring and adjusting their consumption based on new insights and practices. For example, they discovered that even how meat is placed in cooling displays affects the energy needed to keep it cool.

In 2023, a major step was taken to advance this work. In collaboration with local technology company Danfoss, BALS built one of the most energy-efficient supermarkets in the world. 250 m² of the store has been designed as a training and test facility, equipped with cutting-edge technology to trial and monitor solutions before implementing them across all stores.

Real-time data helps store managers respond quickly to cooling system issues – reducing energy waste and preventing food waste.

### 81% $CO_2$ reduced

BALS has reduced $CO_2$ emissions by 81% across its stores since 2012.

### 53% reduced energy

BALS has reduced energy consumption by 53% across its stores since 2012.

### 80% reused energy

Excess heat reuse covers up to 80% of the stores' heating needs.

## Cooling keeps the neighborhood warm

If you have ever held your hand behind your fridge, you have probably noticed that it feels warm. This is heat generated by the cooling process. In most supermarkets, this valuable energy simply vanishes into the air.

But not in the BALS supermarkets. Each one is equipped with a heat recovery unit that captures excess heat from the cooling displays and freezers. This heat is reused to heat the store, the offices, and even the tap water.

By reusing the excess heat, they cover up to 80% of their own heating needs – cutting their energy bills in half.

Most of the supermarkets are also connected to the local district heating network. So, when they produce more heat than they need, the surplus is fed into the grid and used to heat nearby homes and businesses. This innovative approach not only reduces energy costs but also lowers the supermarkets' carbon footprint.

## Solar panels lower external risks

Supermarkets account for around 3% of total electricity consumption in industrialized countries, making them significant energy users with a key role to play in the green transition.

To reduce their dependence on the grid, several BALS supermarkets have already installed solar panels on their rooftops – generating green power directly on-site. More installations are on the way, and the next step is battery storage, allowing stores to save excess energy and use it when demand is highest.

The energy crisis in 2022 highlighted a crucial point: producing your own renewable energy doesn't just help the climate – it also increases resilience. By generating and managing their own energy, the supermarkets are better prepared for global fluctuations in energy prices.

## About ProjectZero

**ProjectZero is a public-private partnership between Sønderborg Municipality and the Bitten & Mads Clausen's Foundation dedicated to making Sønderborg's energy system carbon-neutral by 2029. We also aim to inspire other cities to take on their green transition for a stronger positive impact on our climate.**

In Sønderborg, citizens, organizations, businesses, utility companies and the municipality work strategically together in a public-private partnership to find local solutions to the global climate challenge.

Since 2007, energy-related carbon emissions have been reduced by 79% and the municipality is on track to deliver on their 2029 target of a carbon neutral energy system.

ProjectZero is anchored in the ProjectZero office, where a small team of employees coordinates and monitors the journey towards zero and brings together the right people, ideas and projects.

Our recipe for a green transition not only has the potential to solve the climate challenge in Sønderborg. It can be used all over the world. We want to show other cities the way and inspire them to create their own transformation. Every year, we welcome decision makers and journalists from all over the world, who want to know more about our road to carbon neutrality.

**Do you want to know more or plan for a visit?**
Visit our website or contact us at
**visit@projectzero.dk.**

PROJECT ZERO
SONDERBORG

Nørre Havnegade 43
DK-6400 Sønderborg
Phone: +45 31 68 30 90
Email: info@projectzero.dk