



High energy consumption at a small grocery store is solved

With the help of Combitherm, a small group of first-year students from the Bachelor of Engineering programme in Aarhus, Denmark, reduced a small village grocery shop's runaway electricity bills.

Refrigerated counters and display freezers in shops are large and expensive to run, and it became a financial problem for shopkeeper Marianne Helboe, who runs the Min Købmand grocery shop in the village of Laurbjerg, 40 kilometres from Aarhus.

Marianne Helboe had activated local residents, which resulted in a collection of solar cells, among other things. However, help was actually closer than the shopkeeper ever imagined, as a small group of young engineering students suddenly approached her.

The skyrocketing energy prices were also a topic of discussion among the small study group of first-year Bachelor of Engineering students from Aarhus University. They were sent out on a field project assignment in the area to find places with a high energy consumption and at the same time suggest a way to solve it.

Cold surfaces on the freezer

One of the participants from the small group of students from Aarhus University is Søren Andersen, and he explains:

"It was a bit of a coincidence because we were looking around the area and heard about the small grocery shop with high energy costs.

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In one month, "Min Købmand" can save approx. 1,000 kWh. on a single freezer, engineering student Søren Andersen tells about the solution.

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We looked at the shop, and one thing struck us; it was very cold in there, and in the centre of the shop was a freezer with lids on top, but all the external surfaces were freezing cold. We decided to investigate this and borrowed some sophisticated measuring instruments from the university. We could see that all the sides of the freezer were made of glass and was very cold. The freezer really cooled a lot. The measurements also showed that there was a high energy consumption. But how do we solve it? We asked each other. We came up with the idea of wrapping the display freezer in an insulating material to prevent it from losing so much energy through the sides," he says.

Sustainable insulation

This is where Combitherm comes in as it turned out one of the young people knew about the company. Combitherm produces thermal solutions for the air cargo, pharmaceutical, retail and construction industries, among others. The company produces customised mats and covers in sustainable materials.

Combitherm welcomed the request:

"They gave us a helping hand, probably because we are students," says Søren Andersen with a smile.

Combitherm does have a product for covering open refrigeration and freezer units but did not immediately have a product for this solution.

"However, we measured the freezer, and then the sewing machines started running at Combitherm. Here, an insulation material, which is made from 78% recycled fibers from granules of soft drink and water bottles, is used. That means that it is also a sustainable solution," he continues.

Cash saving

Subsequent measurements have shown that this simple initiative can save a lot of money:

"By measuring the consumption of electricity before and after, we have found out that in a month Min Købmand saves about 1,000 kWh on a single freezer, - that will be quite an amount of money, depending on the electricity costs," he says, adding that if you calculate it with an average price of DKK 1.57 per kWh, it quickly becomes a few thousand Danish kroner in monthly savings, and more if the price of electricity is high.

"A large part of the products we deliver are adapted to the customers' needs, and we are used to tailoring thermal solutions to individual measurements. That ensures that the product fits perfectly, and the investment is recouped in a matter of months," says Product Manager at Combitherm, Charlotte Qvist Jørgensen, and she adds that a solution like this is also a nod to sustainability.



Marianne Helboe, a shopkeeper in a small grocery store reduced her electricity bill when a group of engineering students dropped by. With the help of Combitherm, she significantly reduced the electricity consumption at the display freezer.

World-class temperature control

Combitherm is amongst the leading European manufacturers of flexible, tailor-made and energy-saving thermal solutions for a wide range of industries working with temperature-sensitive products and processes and where temperature fluctuations must be kept to a minimum.

Our products include thermal covers, truck partitions, insulating mats, winter, concrete and asphalt mats as well as composite covers, all of which are important elements in the cooling chain in the transport and storage of e.g., foods and medicine or in relation to companies wishing to stabilise casting and curing processes within concrete and composite.

All development and production take place in Denmark, and with more than 40 years of experience, Combitherm offers advice and sparring thereby ensuring that our customers get an optimal, customized solution with long durability and consideration for the environment.