

Case Study

Polar Cold Prevails at Vaddö Gårdsmejeri in Stockholm's Northern Archipelago – and it's just as it should be



When Vaddö Gårdsmejeri wanted to expand its ice cream production, it needed a refrigeration and freezing unit that was up to the task. Not only is the cold chain crucial for a product like ice cream, after production, ice cream must be shock frozen to avoid the formation of hard ice crystals.



- "We are a dairy farm in the archipelago that has lasted 100 years and must last at least another 100 years. So when we install something new, environmental considerations, sustainability and energy efficiency are a given," says Johan Edlund.

With the help of Mitsubishi Electric's products, the installer Elektro kyl in Roslagen created a solution that is both economical, sustainable and reliable.

The Edlund family's large farm, dating back to the end of the 19th century, stretches out among ancient remains and burial grounds from the Iron Age on the island of Väddö in the northern Stockholm archipelago. Here they run organic farming and restaurant operations, and the farm's own dairy produces KRAV-labelled products that are in demand by restaurants, caterers and consumers all over Sweden.

Sustainability is a keyword for the entire business. When Johan Fransson, who is the project manager and part of the owner family, wanted to expand ice cream production, it was important to find a freezing and refrigeration unit with a low environmental impact for the new blast freezer and cold store.

Being able to stand by the products is important

Elektro kyl, an installer in Roslagen, mainly works with commercial installations. With owner Stig Holmquist at the helm, they have been working on various projects at the Edlund family farm for many years. There were several reasons why Mitsubishi Electric's ECOV refrigeration and freezer units were chosen.



- "Precisely because reliability was crucial in this project, it felt safe to choose products from a brand that we trust and have extensive experience of. In total, we have five ECOV units in the system that work separately from each other. If one unit does stop, there are others in the same room that continue to run. When the farm has produced its ice cream, there are large values in those rooms. If the temperature is too low, it is business-critical," says Thomas Jaensson.

- Environmentally friendly refrigerant was very important. A plant that leaks with environmentally harmful refrigerant is not right for a sustainable EKO farm. Setting up an HFC plant with hydrofluorocarbons, which have high GWP values, would feel downright wrong. Therefore, ECOV was well placed with its natural refrigerant carbon dioxide, CO₂, says Thomas Jaensson, refrigeration technician and heat pump installer.

Elektrokyl in Roslagen has been working with Mitsubishi Electric products since the 1980s. The company therefore has extensive experience of various products from the Mitsubishi Electric range.

Challenges required reflection

However, the project had its challenges. The farm's main fuse was perhaps the biggest of them.

- We had to deal with the fact that the maximum load on the farm's main fuse is 250 amps. The whole industry has to run on that. This meant that we really had to think about how we designed the system based on the starting and maximum operating currents of the machines.



- "When I think of Mitsubishi Electric products, I think of reliability first and foremost. You can tell that they are well-built, solid machines of high quality. It feels safe as an installer to work with such products."

Thomas Jaensson

"The good thing about the ECOV is that it has low starting currents of just 8 amps, and in general it is a very energy-efficient machine," says Thomas Jaensson.

From Elektrokyl's side, they are very pleased with the result.

- "It has been great and the installation went smoothly. The units run smoothly. With inverter technology, the machines only work when needed. This saves money in terms of lower energy costs and less wear on the compressors. They are relatively quiet in operation for such large machines and the investment is reasonable based on the results. We have also prepared everything for heat recovery in the future when the farm wants to start using it, says Thomas Jaensson.

An energy-efficient result

So, back to Johan Edlund, the end customer out on Väddö. How does he think everything has worked out so far?

- "As we are quite limited out here with energy and power, it was important to choose energy-efficient units. ECOV is kind in that way, they start softly and with the inverter technology we manage within the limitations we have. The service we have received from Elektrokyl and Mitsubishi Electric has been smooth and fast. I am a satisfied customer. It has worked as well as I had hoped," says Johan Edlund.

If you ever pass Väddö, perhaps on your way to the Åland ferry in Grisslehamn, why not take the opportunity to drive by Väddö Gårdsmejeri and try the ice cream? As good as it is perfectly chilled!

Project: Väddö Gårdsmejeri

Installer: Elektrokyl i Roslagen AB

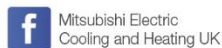
Installation Summary

Outdoor units:

5 x ECOV-X55VA



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Note: Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

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