

Reference Aviko potato processor

Freezing 480 tons of French fries every day



Request by Aviko

Replace the former NH₃ refrigeration system with a tunnel for freezing French fries.

The town of Lomm in Limburg is home to the speciality company of potato processor Aviko. With the new freezing system from ENGIE Refrigeration, Aviko can now freeze 10 tons of French fries on each freezer line every hour. Whereas in the past only forced cooling was possible. The freezing tunnel prepares potato slices and cubes, thin and thick French fries so that they are ready to be fried golden brown by consumers at home.

Making choices

The construction of this freezing system involved a number of decision moments. Johan Verheij, Project Manager at Aviko, explains: "The system had to have enough capacity to force-cool the enormous number of potato products from 90°C to -12°C. Many other questions still had to be answered.



Do we install a partially new system at the location of the old system? Or do we build a completely new system somewhere else and recycle the components?"

As short as possible

Another point of focus was the conversion time. That had to be as short as possible, because zero production means zero income. Eric van Hees, Project Manager at ENGIE. "To gain time, we built a new prefab



refrigeration system at a new location in consultation with Aviko. It took three weeks to realise, at record speed.”

Unlinking two freezing lines

The two freezing lines in Aviko Lomm’s new tunnel now freeze the French fries incrementally to a temperature of -12°C, with ammonia as the refrigerant. Because the two lines operate separately, Aviko can now more effectively control the production process. It wasn’t always like that. In the past, when the refrigeration system of one line was switched off the refrigeration process on the other line was also disrupted. That meant that the production of French fries was temporarily halted. Unlinking the lines creates an uninterrupted production process, even when the refrigeration on one line is switched off.

New ideas

While ENGIE was working on the design of the 10-ton tunnel, it came up with a host of new ideas. Van Hees: “The production process would be halted for three weeks. That got us thinking. During that time, can we optimise

other cooling processes and spaces? Or dismantle existing systems and integrate them into new systems and spaces? We discussed these ideas with Aviko during the detailed engineering phase.”

Phasing out and looking forward

The brainstorming session led to multiple projects. From the replacement or adjustment of refrigeration systems in the intervening space and the weighing room to the recycling of an ammonia condenser and the installation of new refrigeration for the switch room. By not cooling with outside air in the switch room, ENGIE will prevent the polluted outside air from coming inside and polluting the electronics there. The new refrigeration system for the cold store means that Aviko has now phased out the refrigerant freon R22. Verheij: “ENGIE thought things through with us during every step of the project. That meant we were able to make the right choices, choices that will benefit us for years to come.”

Communication crucial

Multiple orders or not, the planning schedule

remained unchanged. Aviko wanted everything to be up and running again after three weeks. That meant a lot of activity on the construction site, sometimes with 200 people or 12 companies working at the same time. Verheij: “In a situation like that, good communication is crucial. The success or failure of a project depends on whether you have good people on the work floor. Project managers from both Aviko and ENGIE were authorised to make decisions and were accessible day and night to discuss challenges or changes. By holding daily discussions with all the foremen and weekly construction meetings with ENGIE, any risks were excluded and everything was kept under control at all times. With no incidents or other setbacks.”

Lower maintenance costs and energy consumption

Verheij continues: “I’m very pleased with all the work done by ENGIE, from the design up to and including the realisation. The result is really fantastic. Low-energy motors and frequency regulators limit our energy consumption. We’re also eligible for the Dutch Energy Investment Deduction and an innovation subsidy. The new machines produce less waste and the maintenance costs are lower. We can rely on the freezing system day in, day out. And with 2 freezing lines, we have enough capacity to force-cool 20 tons of French fries per hour. Thanks to this top performance and the excellent working relationship, we have asked ENGIE to realise a number of other projects at our main branch in Steenderen.”



The ENGIE solution

A 10-ton tunnel with a freezing capacity up to -12°C using ammonia.

Johan Verheij,
Project Manager at Aviko:

‘Always thinking with its customers, that’s ENGIE’



More information?

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