



TOXIC AMMONIA BREWERY CHILLERS REPLACED WITH SAFE, LOW GWP, EFFICIENT SOLUTIONS



THE CHALLENGE

A leading multinational brewery from Burton-on-Trent was looking for a partner that could answer their unique needs for cold storage and replace the aging, ammonia-based process cooling system. ICS Cool Energy, was the partner they reached out to for a bespoke, long-term hire solution that could meet their requirements.

The brewery was looking for a way to install a flexible **cold storage solution in the middle of their craft beer pilot plant** to keep the kegs of beer and raw products cold and fresh. They needed to maintain specific temperatures to guarantee product consistency, while coping with a high ambient temperature caused by the central location of the pilot plant within the manufacturing facility.

Furthermore, the brewery was also **looking for a way to remove the ammonia (NH₃) refrigerated chillers from their site**. Further investments required to maintain the old system safe and operational exceeded the financial and safety benefits of installing a new and more efficient one.

Thanks to a customized long-term hire, a leading multinational brewery in Burton-on-Trent fulfilled their cold storage needs and replaced ammonia-based refrigeration system with high efficiency, low GWP chillers.

THE SOLUTION

On the cold storage front, ICS Cool Energy was able to meet the brewery's requirements customizing a 20-foot refrigerated container unit as part of the Cold Store hire solutions. Originally designed for global - often in high ambient temperatures - marine transport of temperature sensitive perishables, the Cold Store solution provides accurate and stable storage temperatures.

Instead of the ammonia (NH₃) refrigerated chillers, ICS Cool Energy was again able to provide the brewery with a hire solution, that met their process cooling needs and combined safety, high efficiency and performance with low environmental impact. Initially, the brewery was looking for localized chillers for every part of the brewing process. After analysing the options, the ICS Cool Energy team offered a more efficient solution that mimicked the old ammonia system.

ICS Cool Energy installed three large 1.4MW chillers in the same area where the ammonia was originally installed, which allowed to tap the new chillers into the existing pipework and power infrastructure.



THE RESULT

At the brewery, the Cold Store unit's temperature was set at down to minus 21 degrees Celsius to ensure the raw material and ingredients used in the brewery processes of the special craft beers were kept at the optimum conditions before they are used. Additionally, the portable Cold Store container, designed to be put on and off ships, gave the brewery the flexibility to move it around with the lift and shift as needed.

The new chillers provide the brewery with reliable temperature control and feature a variable volume index compressor that allows the equipment to operate at the most appropriate pressure ratio and achieve outstanding part load efficiencies.

For low environmental impact, the units feature ultra-low global warming potential (GWP) R-1234ze refrigerant, which in chillers can outperform ammonia even by 25% according to the energy efficiency ratio (EER) analysis. R-1234ze is mildly flammable and non-corrosive in comparison to ammonia, which is toxic and can pose serious risks to human health and food and beverage operations.

At ICS Cool Energy, we take pride in working hand in hand with our customers, listening closely to their needs and keeping their industries running. In the brewing industry, achieving a high-quality product consistency relies on having control of your process temperatures. With this project, our dedicated hire team fulfilled the customer's unique demand for cold storage and helped them address their safety concerns by replacing the ammonia system with a safer and environmentally friendly process cooling solution.

Dave Palmer, General Manager

Date code: 05/21

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