

Super-sub N₂ replaces CO₂ to Deliver Large Cost Savings for Brewery

The Challenge

Founded at a pub in 1995, for this independent brewery, sustainability is key and they are constantly looking for ways to reduce carbon footprint and improve the site's environmental credentials.

Many breweries use Carbon Dioxide (CO₂) to create the fizz (carbonation) in their drinks. This is usually held as a liquid in large insulated external storage vessels at very low temperatures and turned into the usable gas required through evaporation with the introduction of heat and expansion. The liquid in the storage vessel is replenished, sometimes several times a week, by diesel road tanker deliveries.

Breweries also require an inert gas for a wide variety of other applications and have habitually used CO₂ for these too, as it was already at site and available to them.

In recent years the supply chain for this source of CO₂ has been unreliable and rising energy costs have seen the cost of CO₂ rising uncontrollably. It was time for this brewery to seek alternatives to reduce cost and secure their future supply.

Maziak's Solution

Nitrogen gas is a viable alternative for all applications other than making the beer fizzy.

For this brewery to maximise the use of N₂ gas and minimise CO₂ use, Maziak proposed an on-site Nitrogen gas generation system with a high purity package at 50ppm. Comprising a Parker NITROsource gas generator delivering 34.4m³/hr of Food Grade High Purity Nitrogen gas, that in turn feeds into a 1,000 litre storage tank with a ready to use volume at 7.8bar pressure, regulated down to the required working pressure of 2bar.

The whole package is housed within a 20' shipping container, fully mechanically and electrically connected with a distribution board, lighting, ventilation, domestic electrics, cold weather protection and ambient oxygen level monitoring for personnel safety.

Driven by an ultra reliable HPC compressor plant and backed by a Maziak service plan, all this equipment is covered for 5 years with comprehensive warranty cover provided free of charge. The complete assembly is fully UKCA compliant and was provided with EIGA Food Quality Validation and Certification for the gas supply tested at point of use during commissioning.

Results

Our customer's objectives have been fully met and the site has full control of their N₂ gas supply. These are just some of the benefits of the package:

1. **Long term cost control** with on site nitrogen gas generation
2. **No more delivery vehicles** and the time and effort required to manage can be put to more productive use
3. **Continuous availability of supply** with on-demand High Purity Nitrogen gas
4. **Minimise CO₂ use** to save money and the worry of unreliable supplies
5. **Maximise space** as the whole package is housed in a fully integrated container that sits outside the brewery

