

AirLiquide chose GOLD

April 2016



In the middle of Norfolk County, surrounded only by fields and the beautiful River Wissey, lies Wissington, British Sugar's largest refinery in the UK – and in Europe. When the factory was built in 1925, there was no road access to it; only the river and Wissington Light Railway. Today, the site in Wissington is the largest beet sugar factory in the world. A GOLD service programme is supporting the CO₂ plant.

Extreme resource utilisation

The 91-year-old production facility produces much more than sugar: aggregate, animal feed, LimeX liming material, tomatoes, electricity and bioethanol are all products on the sales list, and all the different manufacturing processes are related to utilise any resource in the name of recycling.

At the heart of the Wissington factory's operations is the combined heat and power (CHP) plant. It produces steam and electricity using gas turbine technology. Over 50 MW can be exported into the local electricity grid, which is enough for approximately 120,000 people. The installation has achieved the best CHP rating under the government CHP environmental quality assurance scheme. The flue gas which traditionally goes to the chimney is diverted to the adjacent glasshouse. This provides heating and CO₂ which is essential to promote plant growth.

The flue gas which traditionally goes to the chimney is diverted to the adjacent glasshouse.

Reduced footprint

In 2011, British Sugar decided to expand the CHP plant further to include a carbon dioxide recovery and liquefaction plant recovering up to 70,000 tonnes of carbon dioxide per year from the bioethanol fermentation processes. The plant was ordered from Union Engineering in Denmark, and taken into operation in the beginning of 2012. The CO₂, which would otherwise be vented into the atmosphere, is now

captured and purified to the highest food grade standard and used for other applications.

Like all parts of the CPH plant, the main focus is threefold: environment, efficiency and reliability. The CO₂ plant is owned and operated by Air Liquide, who decided to sign a service contract with Union. This has proven to be a wise decision.

"The reliability of the plant improved by 23%."

Right service improves efficiency

A GOLD programme is a superior offering for operators who require that their CO₂ plant perform at the highest level without any unplanned stoppages and breakdowns typically choose this solution. The GOLD programme offers 24/7 hotline service, including direct contact with highly experienced specialists.



It also offers online access to your plant via remote process management (RPM), which makes it possible to connect to and solve any problems with the system directly.



In the event that our engineers are unable to solve your problem online, a service engineer will be dispatched within 24 hours of notification.

Paul Talbot is in charge of the CO₂ plant at Wissington and a GOLD customer. He experienced some problems with the CO₂ purification, prompting a service inspection.

Mr Talbot explains: "After the service inspection and PLC upgrade, the reliability of the plant improved by 23%. Despite an unstable raw gas flow and pressure fluctuations from the fermenters, it was possible to make additional changes to the PLC to cope with this unstable source. After the optimisation and improved stability, the resources to the night and weekend shifts have also been reduced significantly and are now replaced by an on-call operator." -/BBA