

Projective delivers £425,000 annual savings and reduced water consumption

Scottish & Newcastle engaged Projective to carry out a major overhaul of the CO₂ recovery plant at a large brewery. We applied our Process Energy approach to realise efficient CO₂ recovery with a reduction to water consumption of 80,000 m³ per annum.

The Challenge

The existing CO₂ recovery plant was no longer performing to specification. Both recovery volume and plant availability fell below that expected. The challenge was to maximise recovery and upgrade the existing plant.

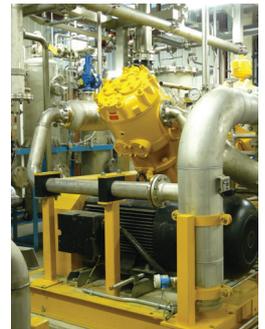
“CO₂ Recovery is a sustainable way of saving energy and costs. Water savings were an additional bonus welcomed by the client”

Tim Jones, Director, Projective

Methodology

We conducted a Process Energy review and determined the amount of CO₂ available for recovery. We then evaluated the effectiveness of the existing plant and identified several areas for improvement.

To reduce water consumption and loading of the existing carbon filters, we re-designed the entire low-pressure end of the plant to include more efficient gas cleaning vessels. We sized new variable-speed compressors to enable the plant to meet the fluctuating loads of the recovered CO₂ with the lowest possible specific power consumption.



CO₂ recovery compressor

The outdated control hardware and software was replaced and a new control philosophy written to provide greater visibility of plant performance.

The Result

The new plant was successfully engineered, managed and commissioned by Projective as principal contractor. We delivered the complete project with no disruption to day-to-day site activities. Operational data proved water consumption was reduced by 80,000 m³ and CO₂ import reduced by 5,500 tonnes per annum. Further energy savings were obtained by re-commissioning the liquefaction system which had previously relied on manual control.

Benefits

- ▶ Combined annual cost **savings of £425,000**
- ▶ CO₂ import reduced by **5,500 tonnes** per annum
- ▶ Water consumption **reduced by 80,000 m³**



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