

# TENNENT'S BREWERY EMBRACES INNOVATION

## APPLICATION DETAILS

- Spent grain dry matter at 24% DS
- Elevation: 20 m
- Pipeline length: 64 m
- Conveying capacity: 14 m<sup>3</sup>/h
- Pressure: 3 bar

## KEY SPECIFICATIONS

- Reduce air use to improve energy efficiency
- Upgrade to modern technology

## BACKGROUND

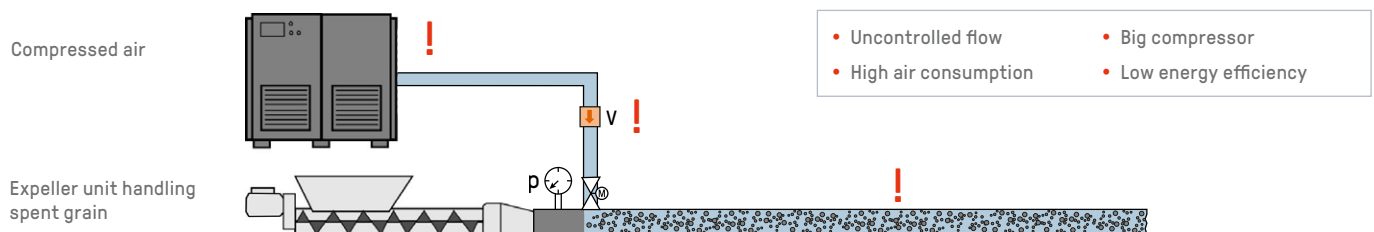
Tennent's Wellpark Brewery is Scotland's oldest brewery. Since its establishment in 1885, it has consistently produced award-winning brews. The brewery's fascinating story revolves around Hugh Tennent, who defied skeptics in 1885 to create Tennent's Lager, initially dubbed a 'madman's dream'. Today, Tennent's Lager dominates the Scottish market, accounting for every second pint of lager consumed in the country.

## TASK

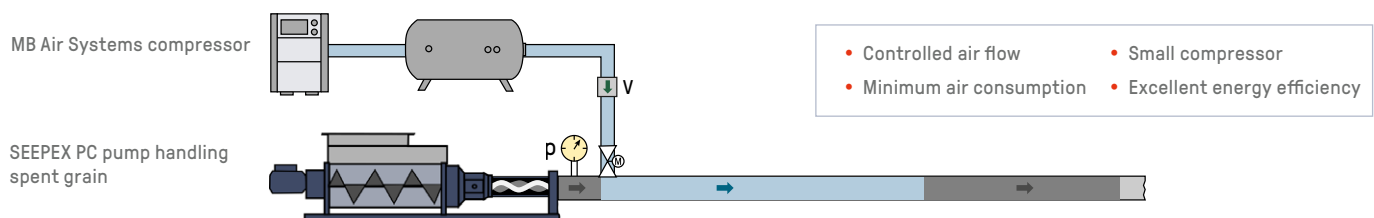
At the brewery, spent grain is transferred from two mash filters that drain the spent grain to 24% DS. Originally, the spent grain fell from the mash filters into an expeller unit, where it was then conveyed over 64 m with a 20 m elevation to the silo. With the expeller, the grain transfer took ~90 minutes after each brew and used 1,125 Nm<sup>3</sup> of air.

Tennent's Lager, part of leading drinks manufacturer and distributor C&C Group, is dedicated to a robust sustainability strategy that includes investing in carbon reduction projects. In line with this commitment, Tennent's has partnered with SEEPEX to improve energy efficiency in their spent grain transfer process, which is the most air intensive process on site.

## CONVENTIONAL: Pneumatic expeller unit using lean phase conveying (e.g. Ponndorf, Vetter unit)



## SMART AIR INJECTION: SEEPEX progressive cavity (PC) pump and compressor using dense phase conveying





Tennent's Brewery embraces innovation with SEEPEX Smart Air Injection, revolutionising spent grain transfer efficiency.

#### COST SAVINGS

**56% REDUCED AIR CONSUMPTION**

**FASTER SPENT GRAIN TRANSFER TIMES**

#### SEEPEX PRODUCTS

- 2x Smart Air Injection (SAI)
  - BT 70-12 pump
  - SAI control unit
- SEEPEX PlannedCare

#### SOLUTION

Tennent's explored the benefits of SEEPEX's Smart Air Injection (SAI) technology. This solution combines an open hopper progressive cavity pump and pneumatic dense-phase conveying to efficiently transfer 15-40% DS spent grain, draff and hops in plugs over long distances.

The demonstrated energy efficiency from SAI enabled Tennent's to access the Scottish Industrial Energy Transformation Fund (SIETF), securing a portion of funding for the project.

As Tennent's embraces the future of brewing, it fully benefits from SEEPEX's PlannedCare package. This comprehensive service ensures proactive, on-time planned pump maintenance, guaranteeing uninterrupted operation. This includes diagnostics to identify potential issues, enabling planned proactive maintenance for increased uptime and lower total cost of ownership.

Tennent's commitment to innovation, efficiency, and sustainability shines through its partnership with SEEPEX. With enhanced efficiency, substantial energy savings, and a focus on seamless maintenance, Tennent's continues to set the benchmark for excellence in the brewing industry.

#### BENEFITS

- 56% reduction in air consumption, from ~1,125Nm<sup>3</sup> to 500-700Nm<sup>3</sup> per brew
- Faster spent grain transfer times
- Carbon reduction by decreasing on-site electricity usage through reduced air consumption
- Energy-efficiency of SAI unlocked government funding covering 30% of the project costs
- Uninterrupted operation, lowering the total cost of ownership through proactive, planned maintenance with the additional PlannedCare package