



# APPLICATION REPORT

Food & Beverage

## Energy management for a sustainable beer production

- Flow measurement of steam, compressed air, CO<sub>2</sub> and water
- Detecting measurement deviations to avoid losses
- Managing energy to reduce consumption
- A tailored technical proposal



### 1. Background

Established in France since the 70s, Heineken chose a unique business model as both brewer and distributor.

Heineken has sold 5.7 million hectolitres of beer, including the brands Heineken, Desperados, Pelforth, Affligem and many others such as Fisher and Edelweiss. More than 4000 employees working all over France and the 1.66 billion euros in revenue generated in 2014 illustrate the success of the company's strategic positioning.

To maintain its market position and become the most sustainable brewery in the world, the company invested in the BABW programme (Brewing A Better World) in 2008. The goal is a 40% reduction in CO<sub>2</sub> emissions by 2020.



Vortex flowmeters measuring compressed air

### 2. Measurement requirements

The group faced the facts and started replacing old equipment such as water heaters and air compressors. In order to move on with the BABW approach and to make further progress, it was necessary to retrofit the process instrumentation used for operating their EMS (Energy Monitoring System). The company focused on 3 priorities: electricity, heating and water. The heating part involved the distribution of compressed air, cold and steam. There were some orifice plates and thermal mass flowmeters installed which, however, dated back to the 1980s and were completely obsolete.

**KROHNE**

## 3. KROHNE solution

Measurements are done on utility fluids: steam, compressed air, CO<sub>2</sub> and water. Having taken an inventory of the key points of measurement, specifications were established and sent to different suppliers on the market. After the analysis of the various technical proposals it was the KROHNE solution that was chosen. It came closest to meeting Heineken's needs in terms of standardising measurements so that they can be compared to one another, the dynamics of the broadest measuring ranges and considerable accuracy when detecting anomalies. The customer chose the OPTIFLUX 4300 W electromagnetic flowmeter for water networks, alcoholised water (the alcohol is an antifreeze that retains the food properties) and chilled water. The OPTISWIRL 4070 vortex flowmeter was selected for compressed air and steam and the OPTIMASS 6400 Coriolis mass flowmeter for measuring CO<sub>2</sub>. A total of 28 KROHNE sensors were installed. Heineken recognised that KROHNE proposed the best technological solution at the best price.



Electromagnetic flowmeters on water circuits

## 4. Customer benefits

"Energy is everybody's business" states Heineken's project manager for energy and utilities. Today, these measures help manage investments, e.g. to implement regulations. All employees are to be involved in energy monitoring because it's the best way to reach objectives. When it comes to energy consumption, all relevant information is visualised on a dash board in the control room. The site consists of approximately 250 flowmeters and these new points of measurement generate alerts at the earliest sign of deviation in consumption, enabling immediate intervention to resolve the problem. The French sites have the same equipment and that applies to Eastern Europe as well. Heineken's internal procedure is 90% identical to the ISO 50001 standard and the company has decided to go for this certification.

## 5. Products used

### OPTIFLUX 4300

- Electromagnetic flowmeter for highly accurate bi-directional flow measurement of liquids
- Wide measuring range DN2.5...3000 / 1/10...120"

### OPTISWIRL 4070

- Vortex flowmeter for measurement of saturated steam, superheated steam, gases and wet gases with varying process conditions
- Available with integrated pressure/temperature compensation and flow calculation

### OPTIMASS 6400

- Coriolis mass flowmeter for liquids and gases with V-shaped twin measuring tube
- Wide measuring range (DN 10...300 / ½...12")



## Contact

Would you like further information about these or other applications?  
Do you require technical advice for your application?  
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