Optimize energy and resource usage

Energy and water conservation plan results in 9 month return on $1 million investment

Benefits at a glance

- Energy and water conservation plan results in 9 month return on $1 million investment
- Water usage costs were reduced by 28% - from $1 million/year to $720K/year - as well as a reduction in waste water released to the municipality
- Reduced carbon footprint and reported savings of $2 million/year from CO_2 recovery
- Compressed air reduced by more than 15% allowing cycling of three compressors verses all three constantly running at full
- Fuel oil costs were reduced by $2800/month equally approximately $34K/year

Through consulting with Endress+Hauser for advice regarding best practices and best-fit measurement solutions, brewery was able to realize a 9 month return on $1 million investment. Endress+Hauser was able to help brewery implement an energy and water conservation plan to help identify and optimize energy and resource usage wherever possible. This allowed brewery to meet their overall goal to boost production capacity and expand in the USA.

The Challenge Leading brewery set forth expansion and resource conservation plan to boost production capacity to meet demands and to also expand in the USA. Recognizing cost control's criticality in today's market, the brewery needed a plan to identify and optimize energy and resource usage where possible.

Our solution Daily monitoring and assessing of brewery's water, compressor usage, CO_2 recovery, fuel oil and electrical power allowed the management team to detect anomalies in order to investigate and determine the corrective action to take. By breaking down the resource conservation initiative into sections, the brewery was able to gain a more transparent overview of their entire process while still identifying individual conservation opportunities. Endress+Hauser recommended a full Energy Management Resource Conservation Plan to monitor usage of **W**ater, **A**ir, **G**as, **E**lectricity and **S**team (**WAGES** monitoring).

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Solution details Measurement solutions ranged from simple temperature and pressure to more advanced flow computers calculating usage of boilers and steam in real-time.

Water conservation - Promag electromagnetic flowmeter

- Monitor water usage
- Identify water/beer loss
- Applied at strategic points throughout the brewing process
- Achieve clear mass balance of the plant
- Monitor and reduce waste water released to the municipality

Promass S
Coriolis masss
flowmeter

Promag H
Electromagnetic
flowmeter

Promag H: Electromagnetic flowmeter

Compressed air conservation - Additional instrumentation and equipment to monitor pressure and temperature

- Capture the CO_2 generated during the brewing process
- Reduce carbon footprint
- Reduce compressor usage allowing cycling of three compressors
- Monitor leaks and usage through measuring pressure
- Measure temperature to identify losses

Fuel oil conservation - Promass Coriolis mass flowmeter

- Installed on the incoming fuel oil line
- Higher accuracy in readings resulting in reduced fuel oil costs

Electricity and Steam conservation - Advanced flow computers – RMC621

- Compares measured values from electricity and compressed air flow rates and usage
- Calculate energy usage of boilers
- Calculate steam in real-time BTU's
- Ensures leaks are immediately identified and sealed

Energy manager RMC621 flow and energy computer

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