



Creating more – using less

Proven ways to minimize your brewery's environmental footprint



How big is your environmental FOOTPRINT?

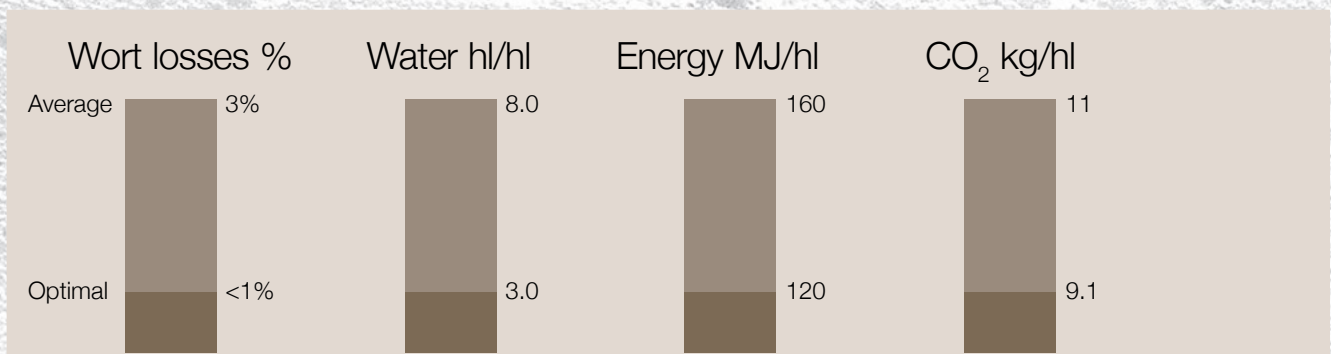
Brewing beer uses simple, natural ingredients and inputs to produce remarkable results. Different breweries have different ways of doing it, of course. And they use a vast range of different equipment.

Alfa Laval systems and technologies enable you to tweak these delicate

production balances to make it possible to boost yields by as much as 4% while using less water, less energy and fewer resources of all kinds.

We help you produce more beer – sometimes even better – at the same time as cutting back on your environmental footprint.

The Alfa Laval sustainable brewery concept is a whole palette of resource-efficient capabilities designed to help make your brewing set-up cleaner and more sustainable – because sustainability and profitability go hand in hand.



Have you considered the following solutions?

To fill the form electronically please press [here](#)

- Energy recovery in the brewhouse
- Energy recovery in beer pasteurization, water deaeration or yeast thermolization processes
- Waste water treatment
- Waste water recycling

- Spent grains dewatering
- Spent yeast dewatering
- Recovering beer from surplus yeast
- Wort recovery
- Kieselguhr dewatering
- Water reduction in the cold block

- Improved tank cleaning
- Sterile filtration of beer
- Low-energy pumps and agitators
- Valves reducing product loss
- Emission-reduction measures
- Iso-Mix fermentation technology

** Benchmark figures are mainly for production facilities only in breweries with capacities above 1 million hl/year*



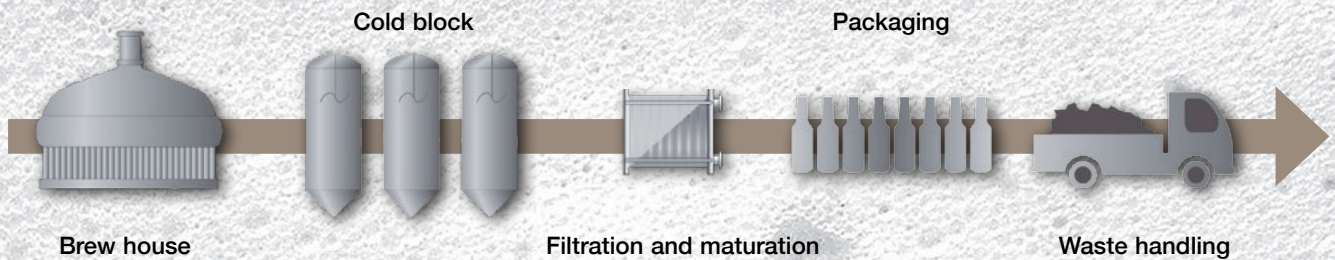
...or you can fill the form in this PDF and mail it to: brewerysales.copenhagen@alfalaval.com

Name

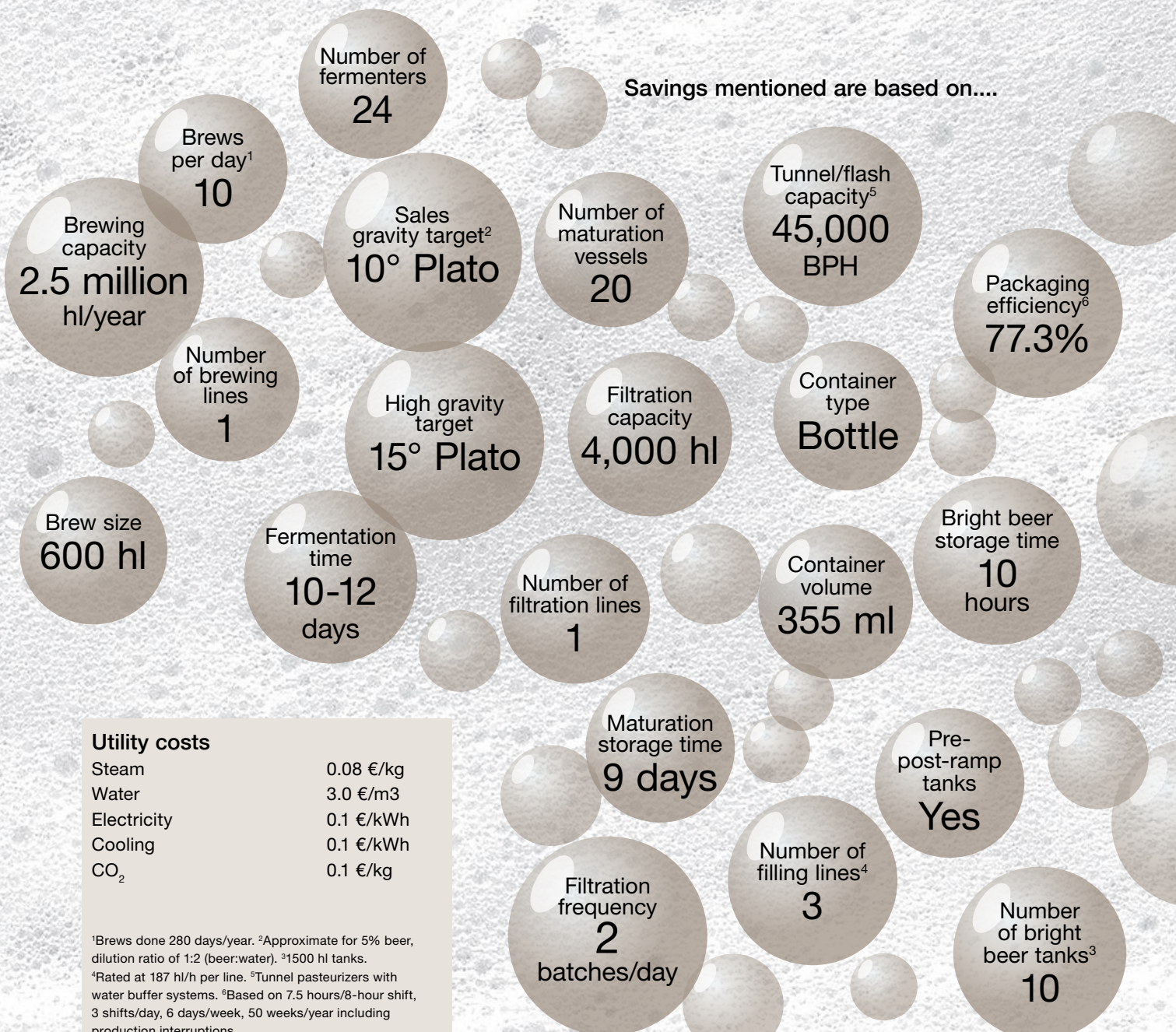
Company

Email

How do you handle your PROCESS?



Savings mentioned are based on...



Utility costs

Steam	0.08 €/kg
Water	3.0 €/m ³
Electricity	0.1 €/kWh
Cooling	0.1 €/kWh
CO ₂	0.1 €/kg

¹Brews done 280 days/year. ²Approximate for 5% beer, dilution ratio of 1:2 (beer:water). ³1500 hl tanks.

⁴Rated at 187 hl/h per line. ⁵Tunnel pasteurizers with water buffer systems. ⁶Based on 7.5 hours/8-hour shift, 3 shifts/day, 6 days/week, 50 weeks/year including production interruptions.

Yield

+2-4%
more beer

Intelligent Whirlpool System decanter

Using an Intelligent Whirlpool System decanter to clarify wort from whirlpool tanks means the entire wort volume can be sent to cooling without any loss.

This yields as much as 4% more wort per brew, as well as giving you better wort quality.



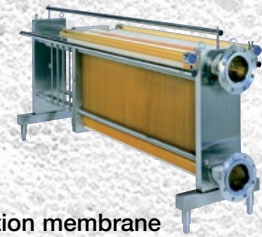
1-4%
wort
recovered

BRUX nozzle separator

Separating yeast from the bottom of fermentation and maturation vessels using a BRUX high-speed separator means you can recover additional beer.



This boosts yields by as much as 2%.



M39 microfiltration membrane

With the M39 microfiltration module, breweries can recover most of the beer normally trapped in fermenter bottoms.

This high-quality beer has less than 1 EBC in turbidity*, which increases the yield per brew by up to 2%.



Iso-Mix rotary jet mixer

Using an Iso-Mix system in fermentation vessels boosts attenuation and extract utilization, particularly in high-gravity brewing.

This improves ethanol yields by as much as 5% during each fermentation sequence.

*certified by VLB Berlin

Flexitherm flash pasteurizer

A Flexitherm flash pasteurizer reduces water consumption by over 95% compared with a traditional tunnel pasteurizer – mostly due to lower effluent levels and zero carry-over from containers.



This improves overall water consumption by up to 0.42 hectolitres for every hectolitre of beer produced.

Intelligent Whirlpool System decanter

Using an Intelligent Whirlpool System decanter precludes the need to flush trub between brews, since the trub is already separated.

Combined with the benefits of wort recovery, overall water usage for the same level of production is reduced by 0.06 hl/hl (water usage/beer produced).

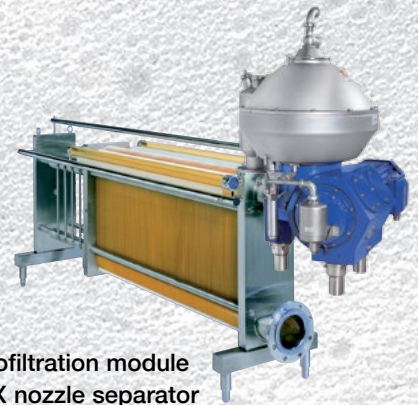


Water

Up to
95%
water saved

Foodec decanter centrifuge

With spent grain dewatering decanters, the water recovered from spent grains can be re-used in many different places in the brewing process, cutting back on water consumption by up to 0.05 hl/hl.



M39 microfiltration module and BRUX nozzle separator

The yield improvement of beer recovery using a BRUX nozzle separator and the M39 microfiltration module also reduces water usage per brew.

This improves the overall water usage ration by 0.06 hl/hl.

Toftejorg tank cleaning machines

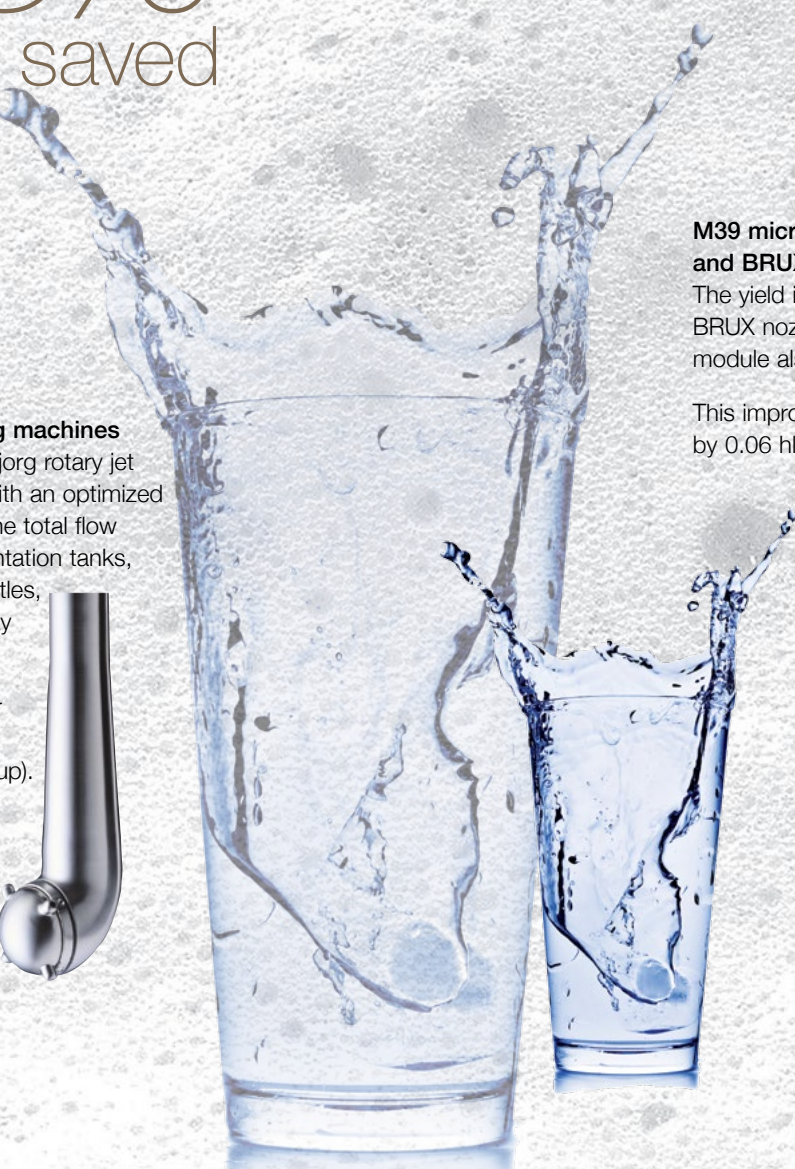
Using high-impact Toftejorg rotary jet heads, in conjunction with an optimized CIP regimen, reduces the total flow required to clean fermentation tanks, lauter tuns and wort kettles, compared to static spray ball cleaning systems.

This cuts back on water usage by 0.07 hl/hl (depending on your set-up).



BREW centrifugal separator

Using bottom-fed BREW separators reduces the frequency and flow of stand-by water, cutting water consumption during stand-by mode by over half – equivalent to 0.01 hl/hl.



Flexitherm flash pasteurizer

Compared to a tunnel pasteurizer with the same capacity, a Flexitherm flash pasteurizer cuts operating costs related to steam, cooling and electricity by more than 80% (though less if you use a post-fill warmer).

This improves the energy usage ratio by 5 MJ/hl (energy usage/beer produced).



BREW centrifugal separator

Compared to a top-fed separator with equivalent capacity, a bottom-fed BREW separator uses almost 50% less energy to clarify or polish beer.

This cuts back energy consumption by up to 0.57 MJ/hl.



Energy

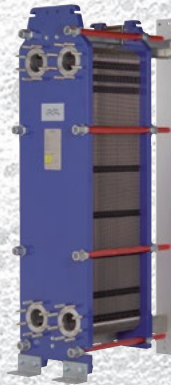
LKH centrifugal pump

Using correctly configured LKH centrifugal pumps can minimize the energy used for fluid routing by as much as 50%, reducing the energy used for such pumping by up to 1.02 MJ/hl (depending on your set-up).



Gasketed plate heat exchanger

Installing an energy recovery system based on a gasketed plate heat exchanger to transfer energy from condensing wort vapour from the brew kettle to pre-heat subsequent wort brews cuts heating demand by more than 40% per brew, equivalent to over 7 MJ/hl (depending on brewing conditions).



50-80%

energy saved

Combined yield improvements

The combined wort and beer recovery yield improvements from the Intelligent Whirlpool System decanter, M39 microfiltration module and BRUX nozzle separator also reduce the heating and cooling energy required to produce up to 4% of the wort and 2% of the beer per brew, corresponding to 0.48 MJ/hl.



Toftejorg tank cleaning machines

Toftejorg rotary jet heads make it possible to cut back on the energy used in the CIP cycle by as much as 70% for hot CIP and up to 50% for cold CIP for fermenter applications, and up to 60% for hot CIP and up to 35% for cold CIP for brew kettle applications.

This results in energy savings of as much as 0.2 MJ/hl.



Waste & effluent

Intelligent Whirlpool System decanter

This decanter makes it possible to eject trub solids with 35% dry matter to disposal silos, thus rolling back transport fees and effluent treatment costs.

The dry trub can also be added to spent grains and sold off as feed, eliminating all costs related to trub disposal.

Kieselguhr dewatering Foodec decanter

Dewatering decanters for reducing the water content in *Kieselguhr* (diatomaceous earth) make it possible to concentrate spent slurries by up to 80%.

This significantly reducing their volume, making slurry easier and cheaper to deal with and dispose of.

80%
less slurry

35%
dry matter



Foodec decanter centrifuge

With yeast dewatering decanters, the dry matter content of spent yeast can be increased from 8% to 28%.

This minimizes the yeast load in waste water treatment plants as well as rolling back the thermal inputs required to autolyze spent yeast by as much as 28%.



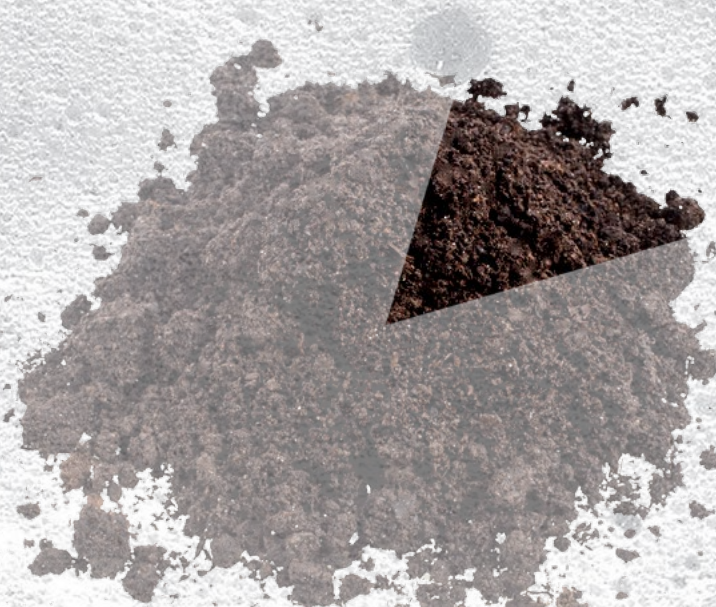
Unique mixproof valve

Deploying spillage-free Unique mixproof valves in brewery routing systems can minimize product losses by up to 2 hectolitres for every brew (depending on routing conditions).

Toftejorg tank cleaning machines

Toftejorg tank cleaning machines can more effectively clean fermentation and bright beer vessels compared to static spray balls, but at much lower flow and with shorter cleaning-in-place cycles.

This means waste associated with CIP fluids is reduced by up to 75% or up to 0.06 hl/hl (depending on existing cleaning conditions).





Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access this information.