

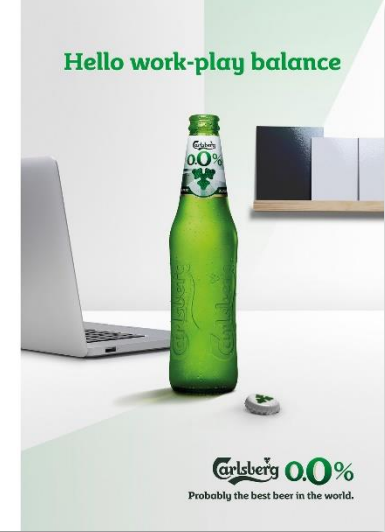


# **Alfa Laval non-alcohol beer technology:** A new quality beer based product for a big range of customers

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# Great moments for 0.0 beer!!!



# Non-alcohol beer: a new quality beer based product for a big range of customers



Market is ready and demands for 0.0 beer



Successful taste from unique de-alc technology



Global brewery know-how and support

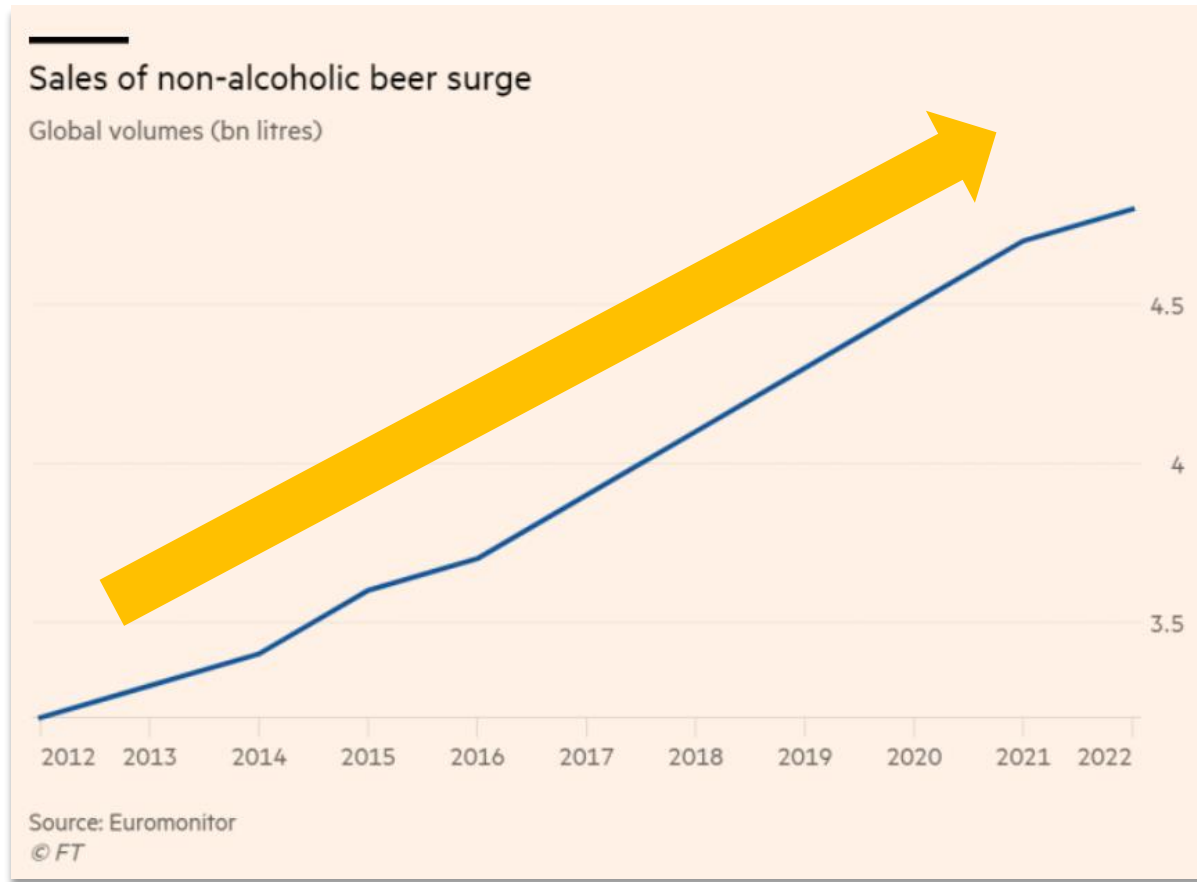


# 1. The market is ready and demands for 0.0 beer products

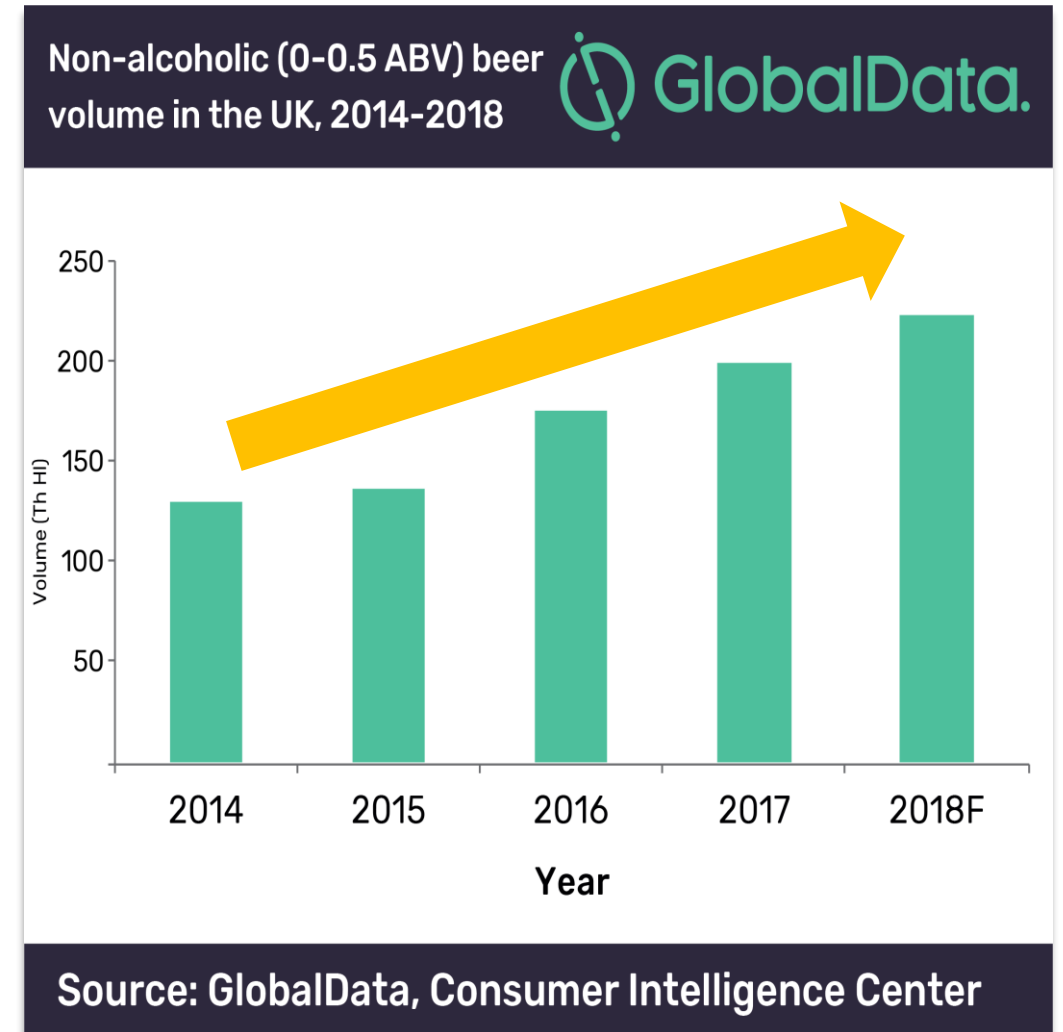
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- A **great alternative** for non beer/non alcohol consumers; a growing market niche for breweries.
- A **beer-based drink option** for present beer consumers with clear benefits (responsible drinking, healthier, lower calorie, good taste).
- 0.0 beer a **clear driver for profitable growth** in many countries, as seen by endorsement from top brewery groups with high marketing investment.

# Accelerated growth for NA beer globally



According to Euromonitor: Sales volumes of low and non-alcoholic beer have risen nearly 18 per cent in the past five years in western Europe, and are forecast to climb another 12 per cent by the end of 2022.

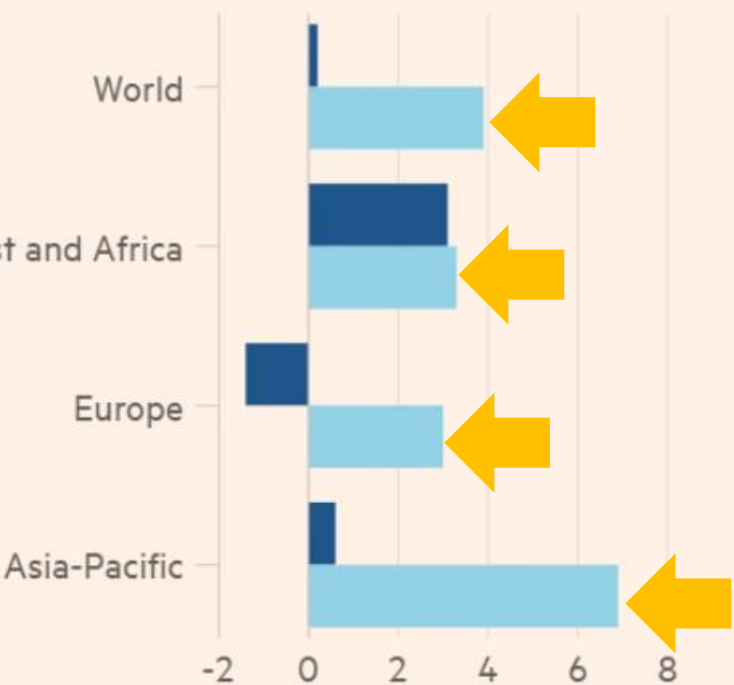


# NA beer's rising quicker than its predecessor

## Alcoholic beer is left on the shelf

Sales growth 2012 to 2017 (%)

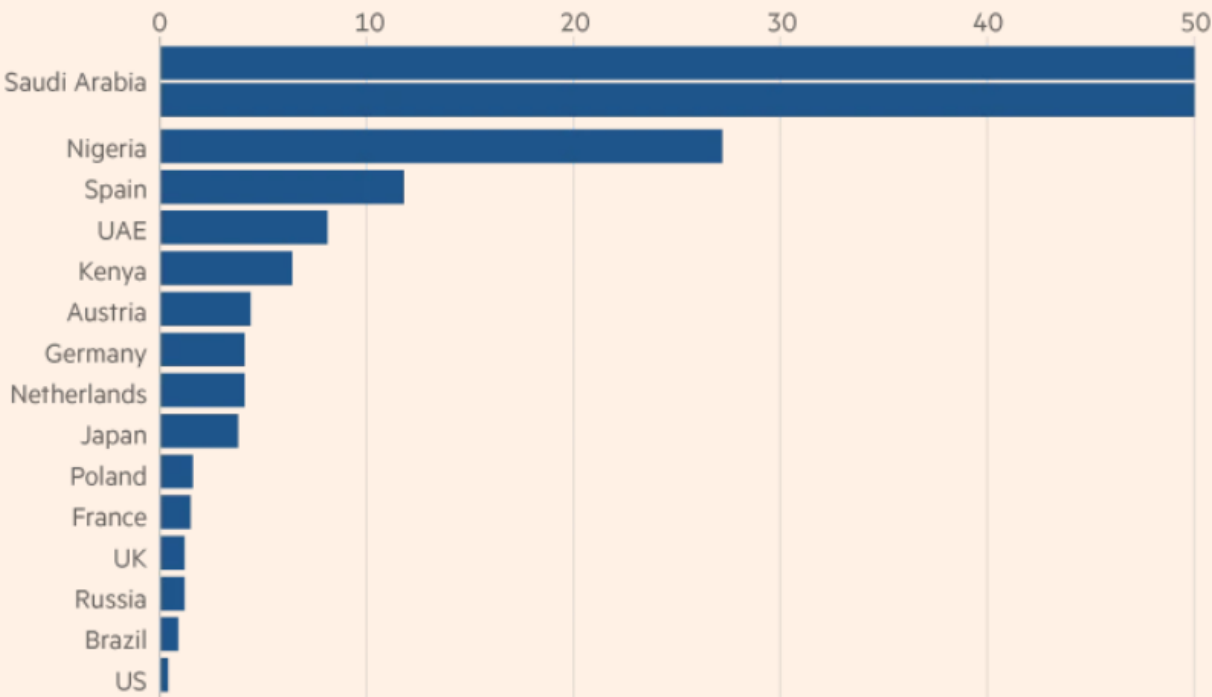
■ Alcoholic beer  
■ Non-alcoholic beer



Source: Euromonitor  
© FT

## Leading non-alcoholic beer markets

% share of total, 2017



Source: Euromonitor  
© FT



# What's so good about 0.0 beers?

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- Natural ingredients product-barley-malt-wheat
- Less than half the calories compared to standard beers
- Full and rewarding social life
- Work and 0.0 beer integration
- Less short/long term cost impact in state health system



# Examples of successful de-alc 0.0 beers





## 2. New unique de-alc technology brings successful taste in 0.0 beer products

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- Continuous single pass process with low residence time and low temperature in vacuum conditions.
- Stripping in column: Meaning no distillation and no dilution.
- Possibility to recover and dose aroma before or after the alcohol removal.



# 6 key processes in de-alcoholization module



# Innovative, efficient single-pass alcohol removal for full-flavour end product

## Gentle vacuum-based stripping

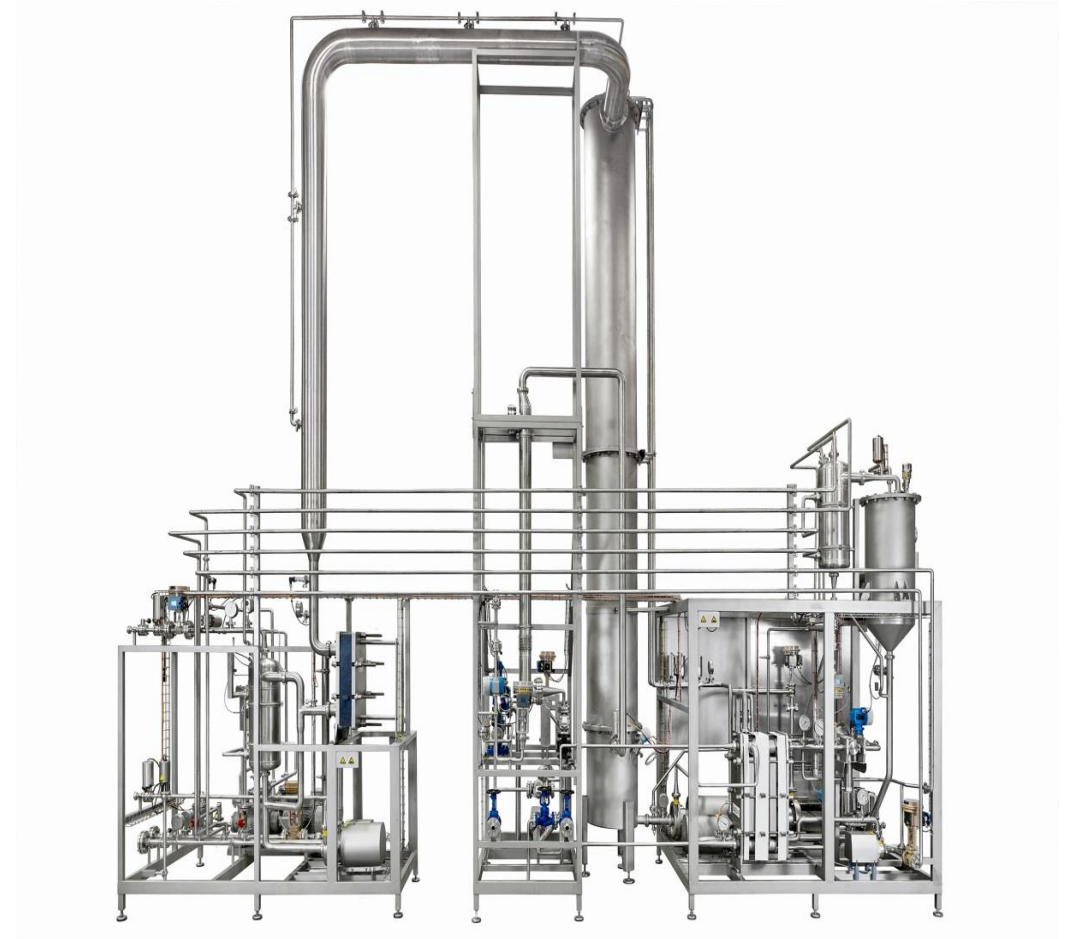
- **From 5 to 100 hl/h capacity in De-alc**  
ABV reduction from 13 % to <0.05%
- **Optimized for beer**  
De-alcoholized beer profile close to reference beer

## Effective performance

- **Single pass, low thermal impact**  
Operating temperature < 45°C
- **Full system cleanability**  
CIP/SIP of internal surfaces

## Efficient operation

- **Low steady-state running costs**  
< €4/hl in utilities
- **Short start-up time**  
Start-up to standby in less than 10 minutes





# Alfa Laval a world leader in stripping columns-ALDOX

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## Efficient stripping technology

- Proprietary know-how
- Stainless steel structured modular packing
- Stable performance

## Brewery industry-leading reliability

- Installed base >1000 stripping systems
- Lowest Cost of Ownership

## Big capacity range and flexibility

- Capacities from 5 to 1600 hl/h DAW stripping
- Multiple applications in food & beverage market

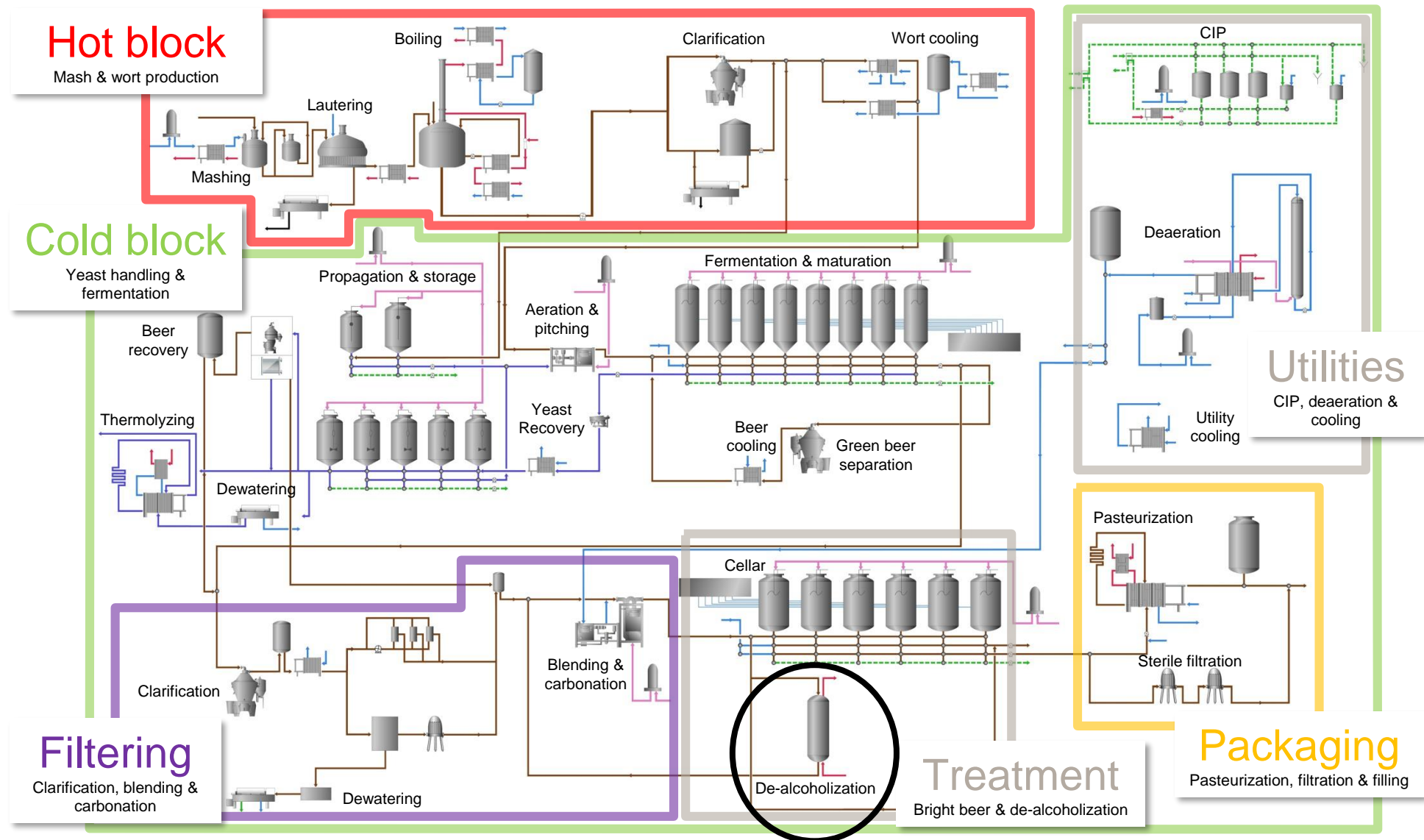
### 3. Global brewery know-how, technical support and extended process solutions to create 0.0 beer products

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- 0.0 process starts in brewhouse and how beer is fermented.
- Beer pre-treatment and post-treatment support is required.
- De-alcoholization is a complete solution, not only a component.

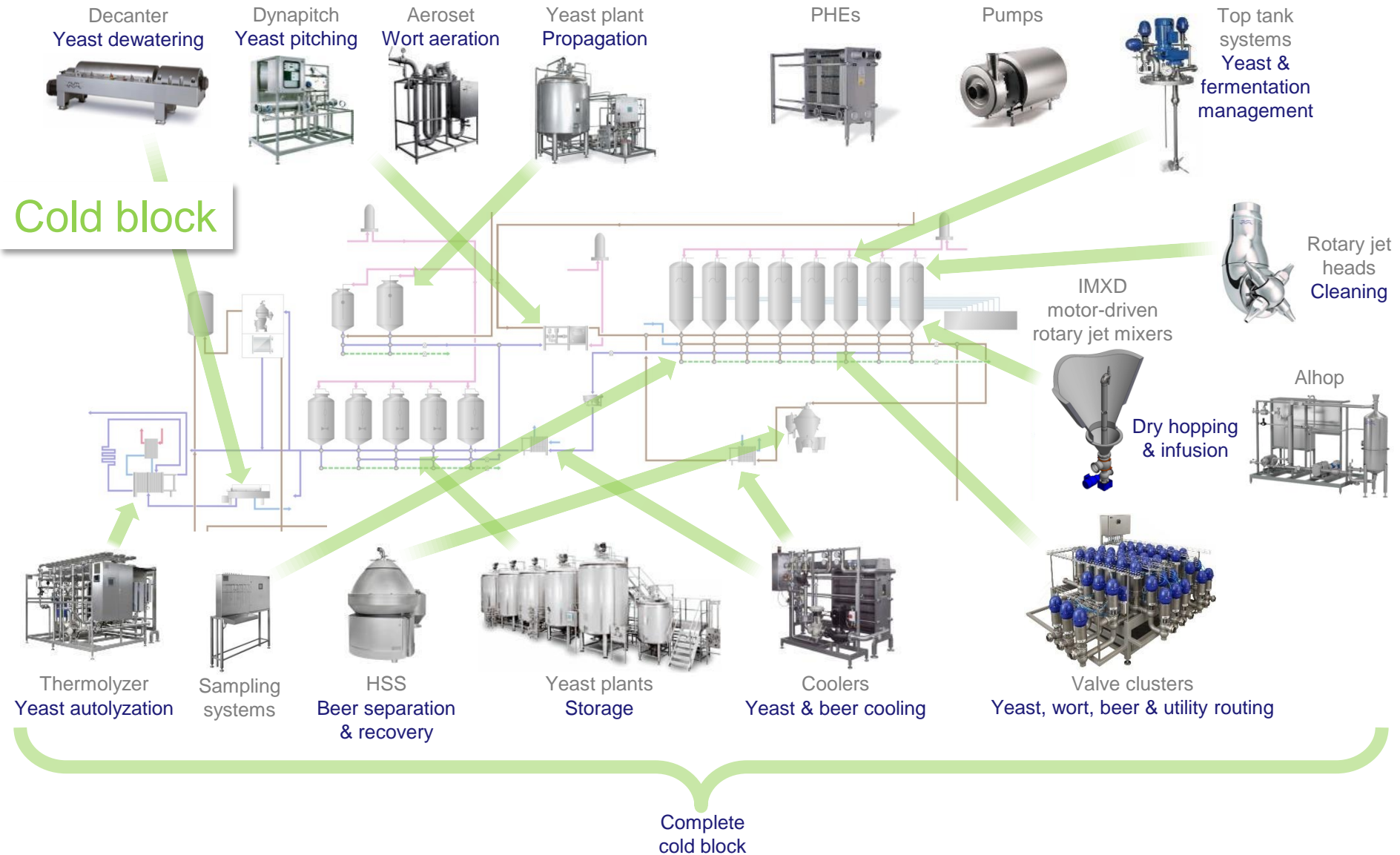


# The brewing process...

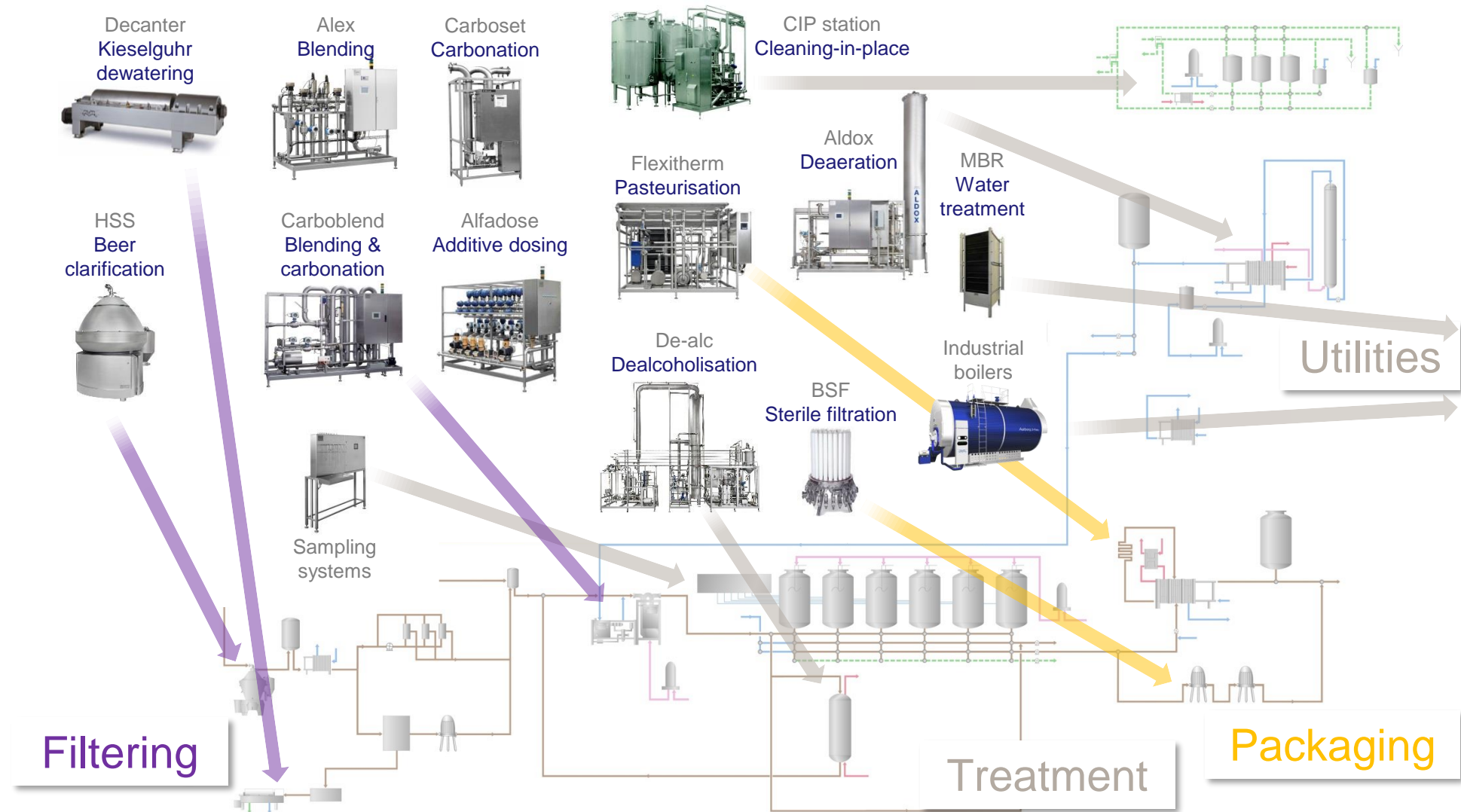




# The Alfa Laval offering ...



# The Alfa Laval offering...



# ... and competence knowhow

## Separation

HSS  
Beer separation  
& recovery  
Wort clarification  
Beer clarification



Decanter  
Dewatering  
(spent grain,  
Kieselguhr)



Lowal  
Alcohol removal



## Thermal

PHEs



## Modules & Filtration

Coolers  
Yeast & beer cooling



BSF  
Sterile filtration



Flexitherm &  
Thermolyzer  
Pasteurisation  
Yeast autolization



Dynapitch  
Yeast pitching



Yeast plant  
Propagation



Aeroset  
Wort aeration



Alex  
Blending



Carboset  
Carbonation



Alhop  
Dry hopping



Aldox  
Deaeration



Carboblend  
Blending &  
carbonation



De-alc  
Dealcoholisation



Pumps



Valves



Scandi Brew  
components



Sampling  
systems



Rotary jet  
heads/mixers  
Cleaning  
Fermentation  
Dry hopping  
Infusions



Top tank  
systems  
Yeast &  
fermentation  
management



## Flow

## Fermentation



Valve clusters  
Yeast, wort, beer  
& utility routing



Yeast plants  
Storage



Process blocks

## Projects

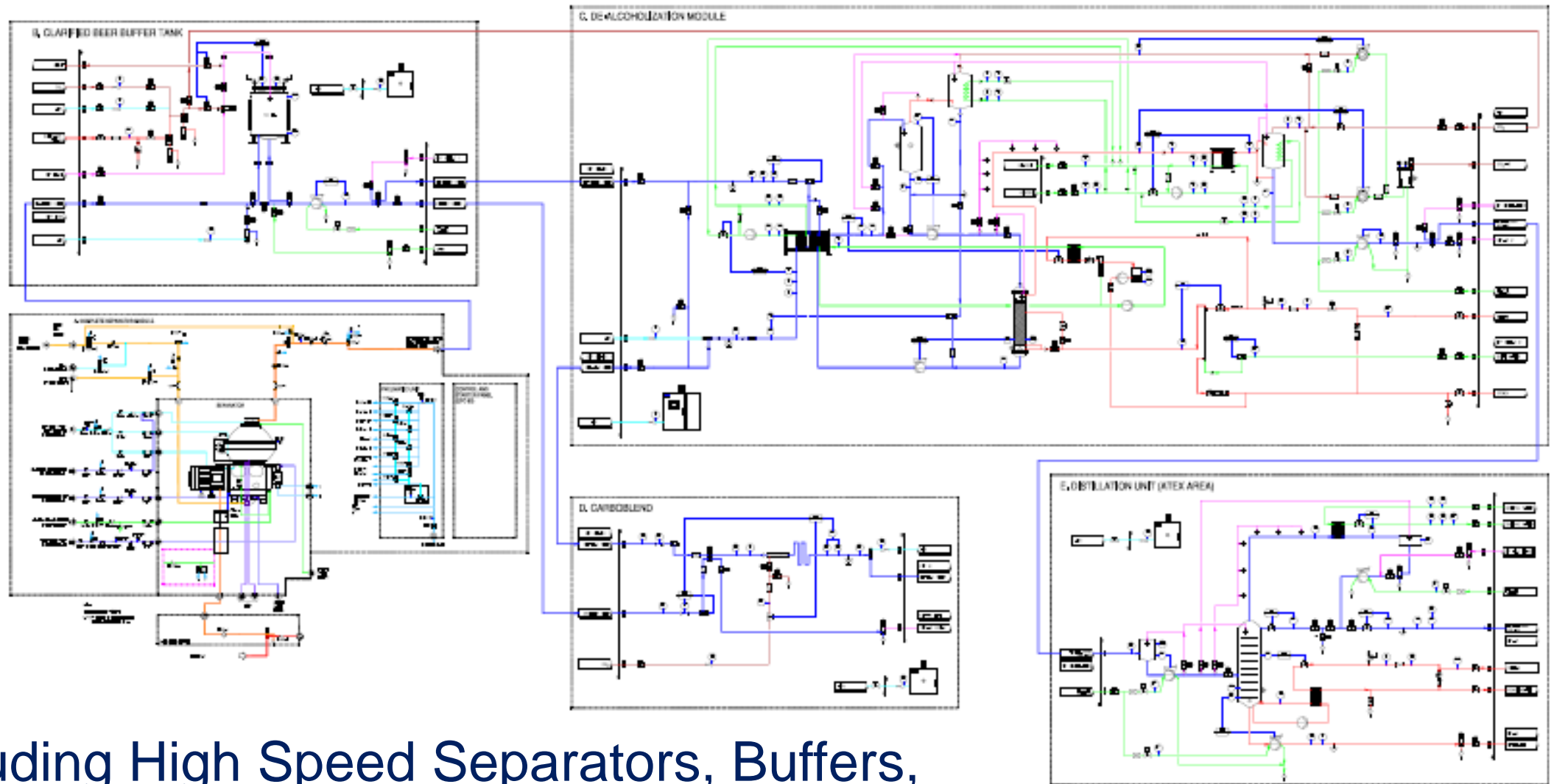


# Alfa Laval De-alcoholization Module

for non-alcohol & low alcohol beer

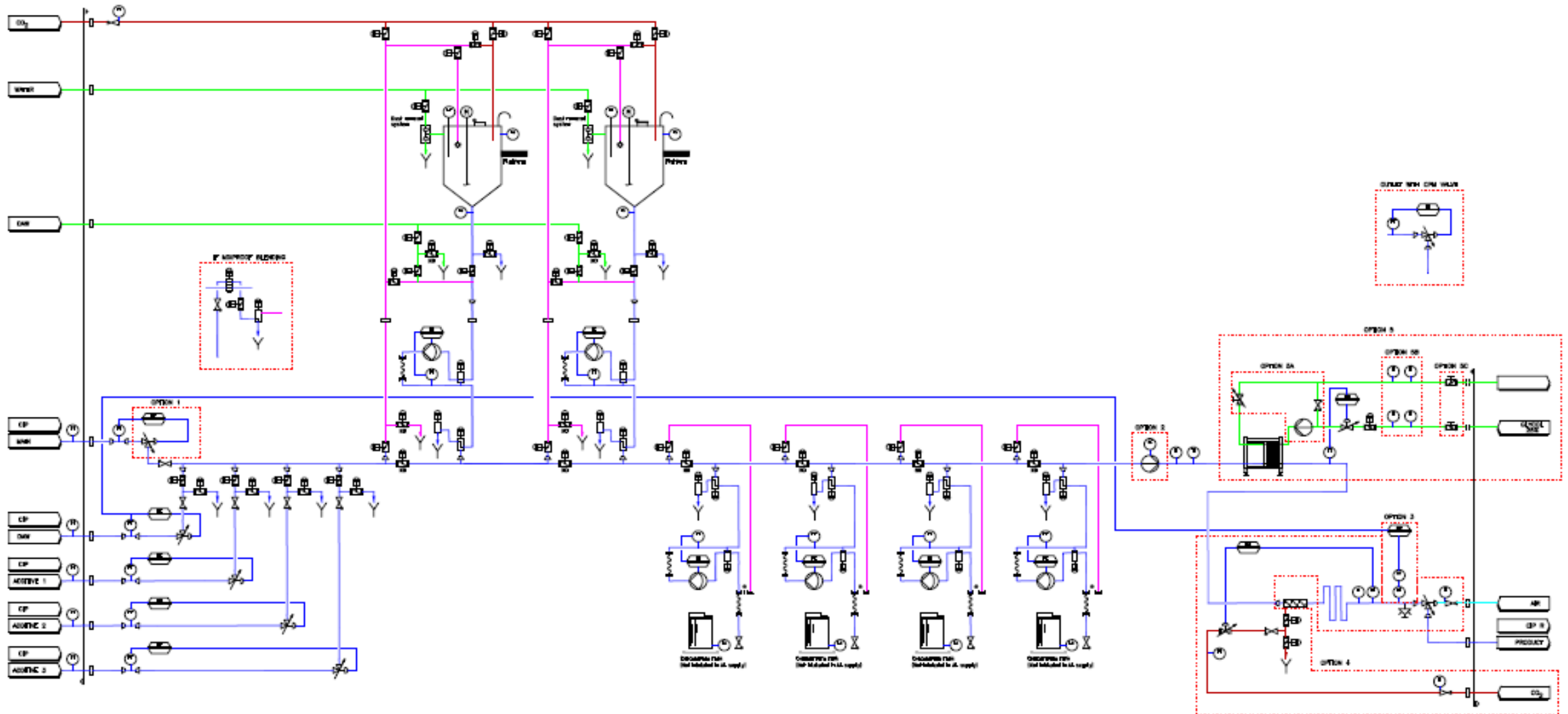


# NAB/LAB integration projects



Including High Speed Separators, Buffers,  
Carboblend, Coolers...

# AlfaDose after De-alc for in-line dosing





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Global brewery know-how and support




# One last benefit...





# Alfa Laval Brewery is on social media!

Stay up-to-date with the latest beer production news, tips, solutions and webinars.

**SCAN AND CHECK US OUT!**  
[alfalaval.sg/brewery](http://alfalaval.sg/brewery)


 @Alfa Laval     @AlfaLavalAB     @Alfa\_Laval





Alfa Laval - Beer Production  
168 followers  
5d

What can you benefit as a small craft brewer if you add a centrifuge to your production process? Our experts find at least five reasons for that. Read and find out: <http://fal.cn/ACOT>

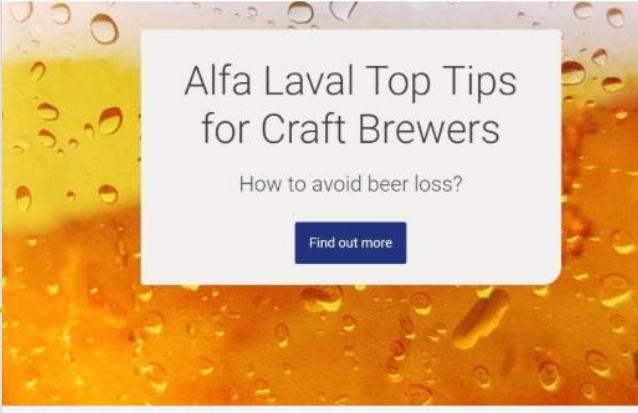


Five reasons to get a centrifuge for your brewery

[alfalaval.com](http://alfalaval.com)

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High beer loss, long sedimentation time and the need to grow production capacity are some of the challenges experienced by [#craftbrewers](#), we have a solution to deal with these pain points. ...see




How to avoid beer loss?

[alfalaval.com](http://alfalaval.com)

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We recently hosted a webinar on dry hopping in beer production. If you have missed the event, here is a chance to view the recording to hear what our experts have shared with brewing enthusiasts from around the world. ...see



Dry hopping webinar - recording

[alfalaval.com](http://alfalaval.com)



