

Brewing your better future

Effective steam solutions



First for Steam Solutions

EXPERTISE | SOLUTIONS | SUSTAINABILITY

spirax
sarco

THE BREWING INDUSTRY

Your steam solutions partner



Total steam solutions for your brewery

A more efficient steam solution could help you to reduce energy costs, water consumption and improve beer quality.

We understand brewing industry applications. This means we work with you to ensure that steam reaches your process at the correct quantity, quality and purity at all times and your process complies with industry legislation, as well as health and safety requirements.

Our global network of specialist engineers, can help your brewery:

- Increase productivity
- Minimise downtime
- Improve beer quality
- Reduce carbon emissions, water consumption and costs



CASE STUDY

Feedwater temperature increased by 3°C, saving up to \$32,000 a year

Location: Chile

The situation

The brewery relied on steam for pasteurisation, using an ageing pasteuriser that was intended to heat and maintain a series of temperatures as bottles and cans moved along a conveyor belt.

The pasteuriser ran inefficiently, causing problems with pressure control, drainage, and condensate recovery. Flash steam was vented to the atmosphere and the brewery wanted to be able to recover this heat energy to save money.

The solution

Spirax Sarco engineered a retrofit solution centred on an Exhaust Vapour Condenser (EVC). This is a compact method of recovering flash steam from pumped condensate – in other words, recovering heat energy leaving the system to preheat the process feedwater.

To support the installation of the EVC, Spirax Sarco also replaced the condensate pump in order to deliver effective condensate return.

To help stabilise the steam supply to the pasteuriser, a pressure reducing station was installed incorporating a Spira-trol™ control valve for pressure reduction, a SV615 safety valve and two BSA1T valves for isolation purposes.

Finally, the drainage was also improved by installing a correctly sized steam trap station to ensure efficient condensate removal.



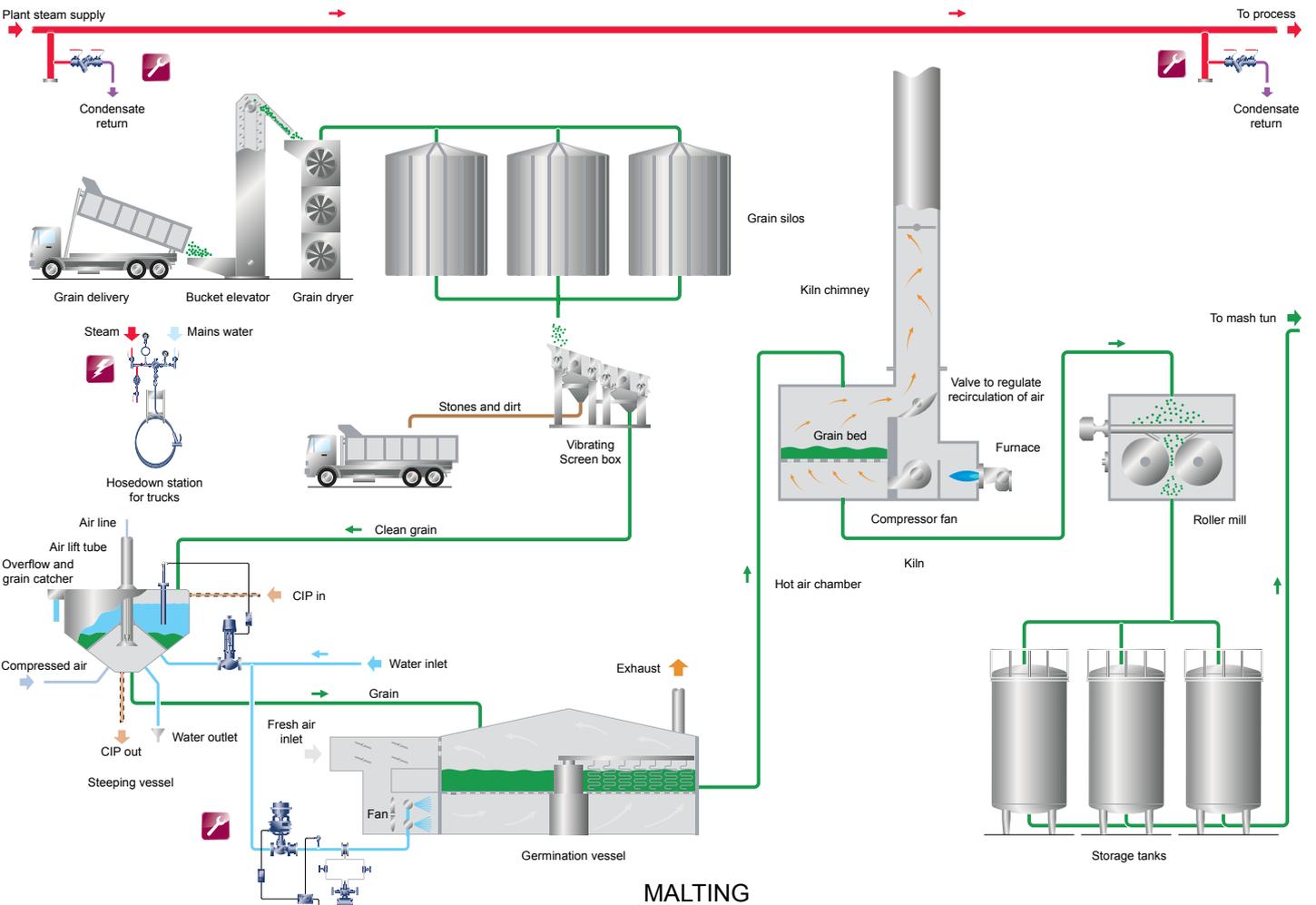
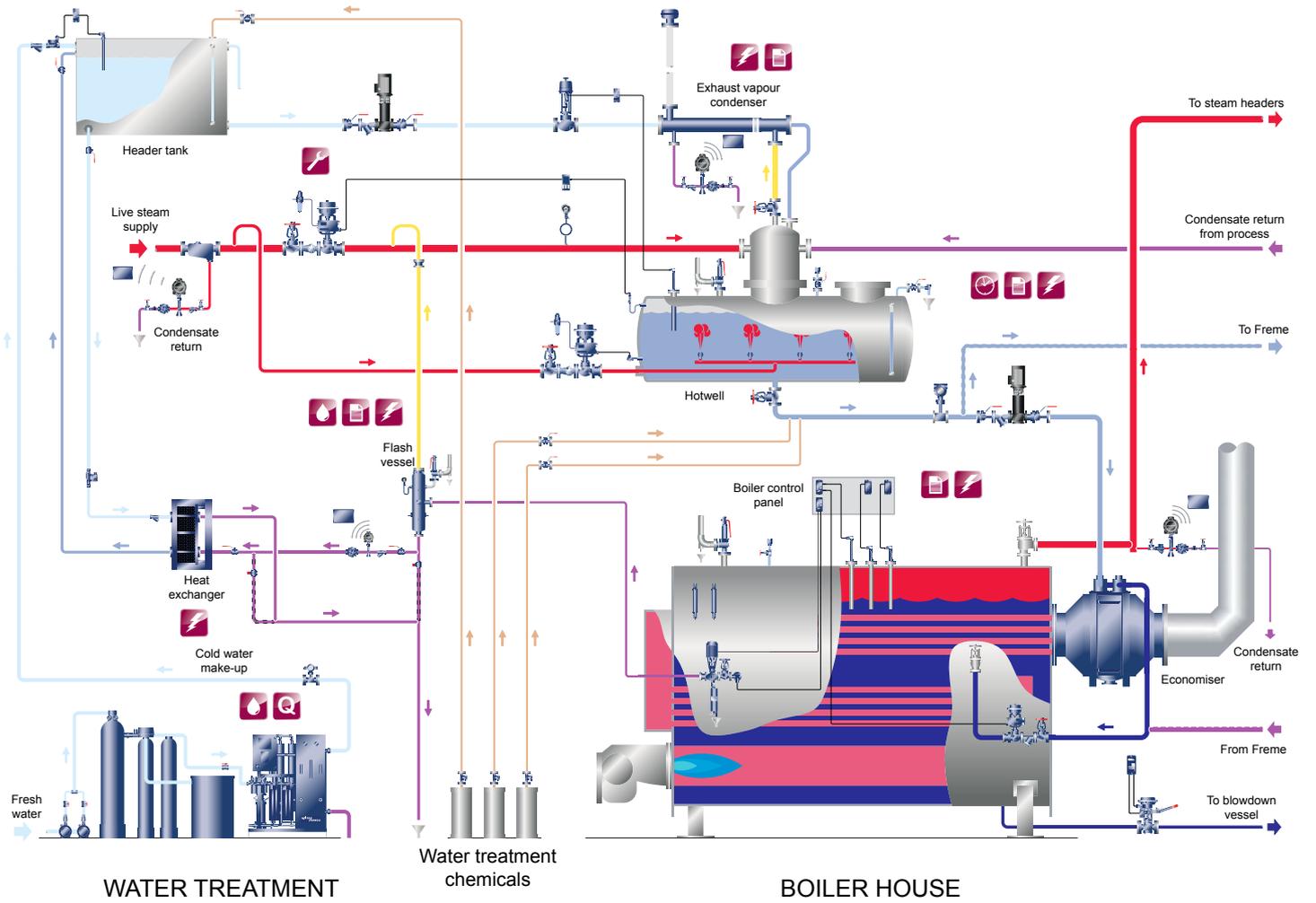
The results

The installation of the EVC to recover energy from flash steam resulted in an overall temperature increase of 3°C for the boiler feedwater. The estimated average cost saving for this solution is USD \$32,000 per year.

By retrofitting the solution to the customer's existing equipment, Spirax Sarco was able to extend the life of aging machinery and provide the brewery with a significant capital saving and unplanned process maintenance reduction.



Exhaust Vapour Condenser (EVC)





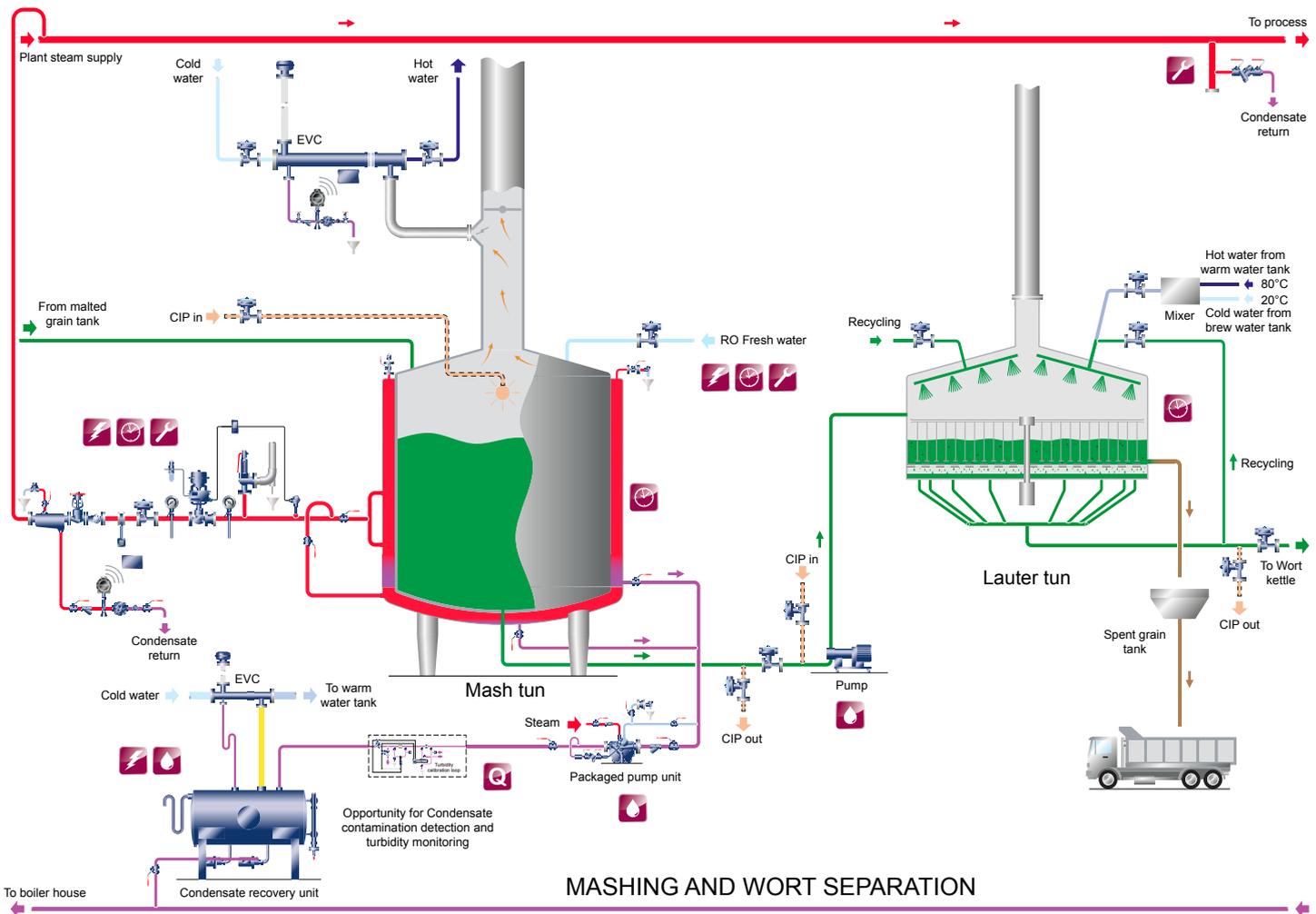
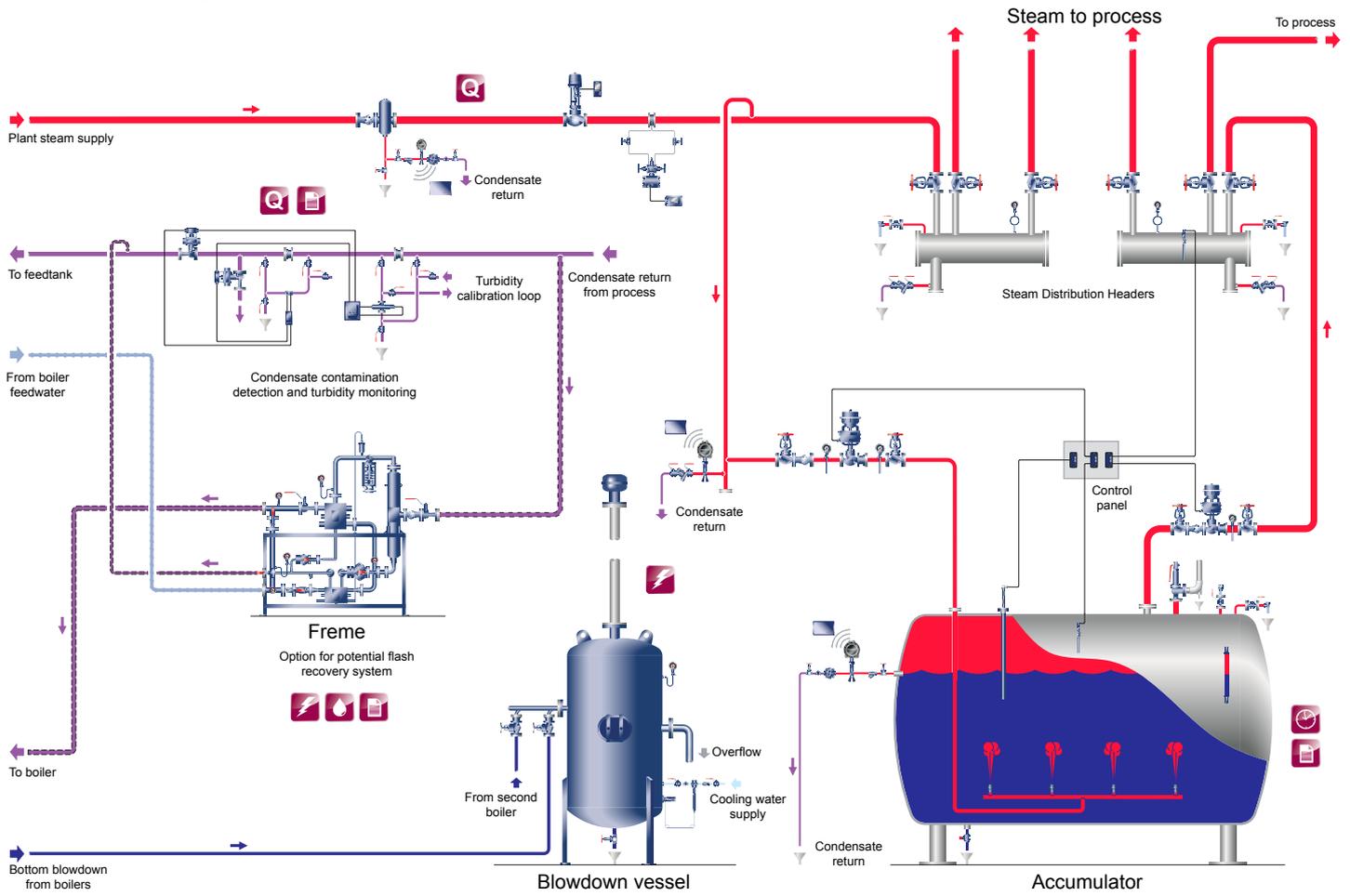
Product quality assurance



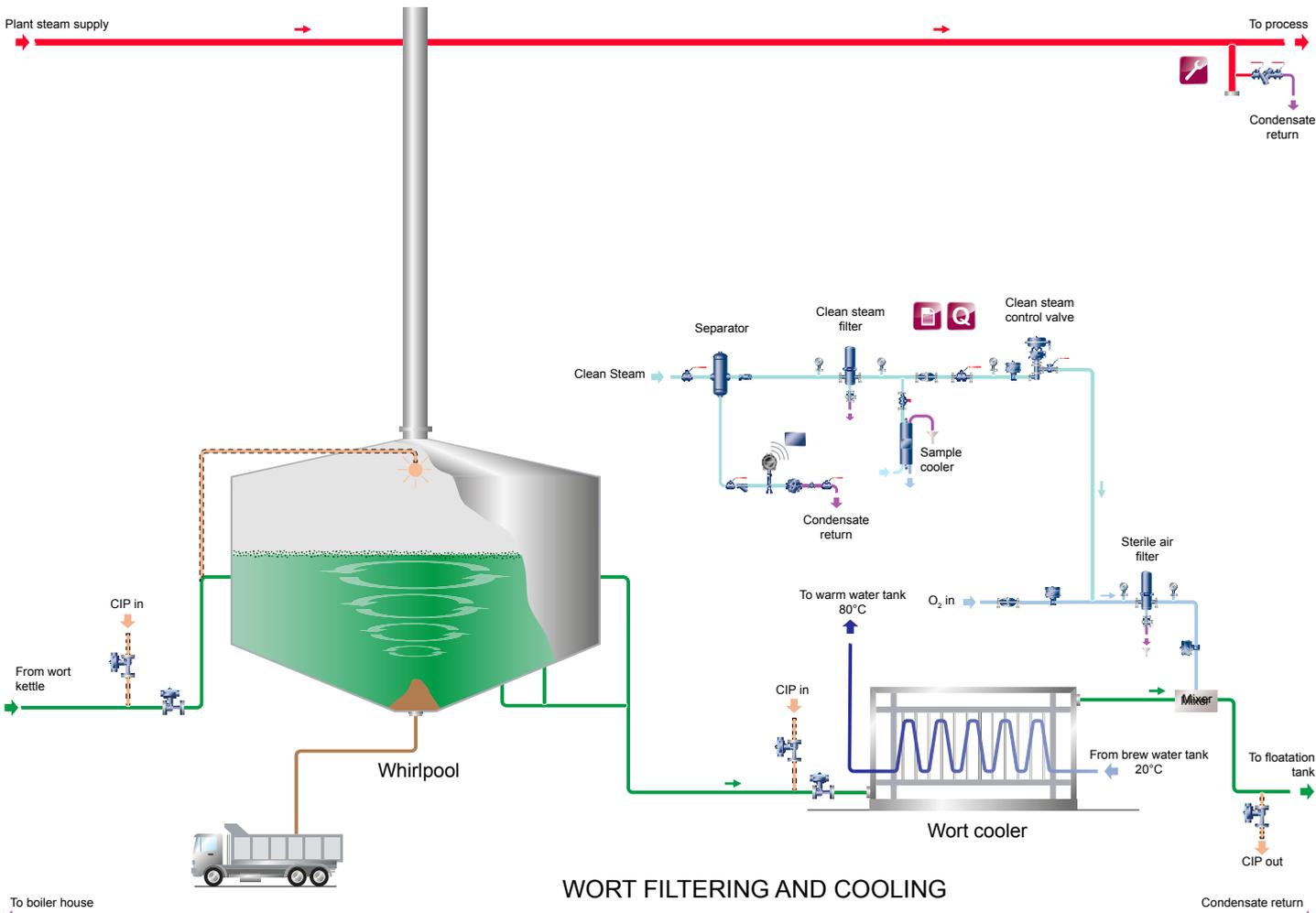
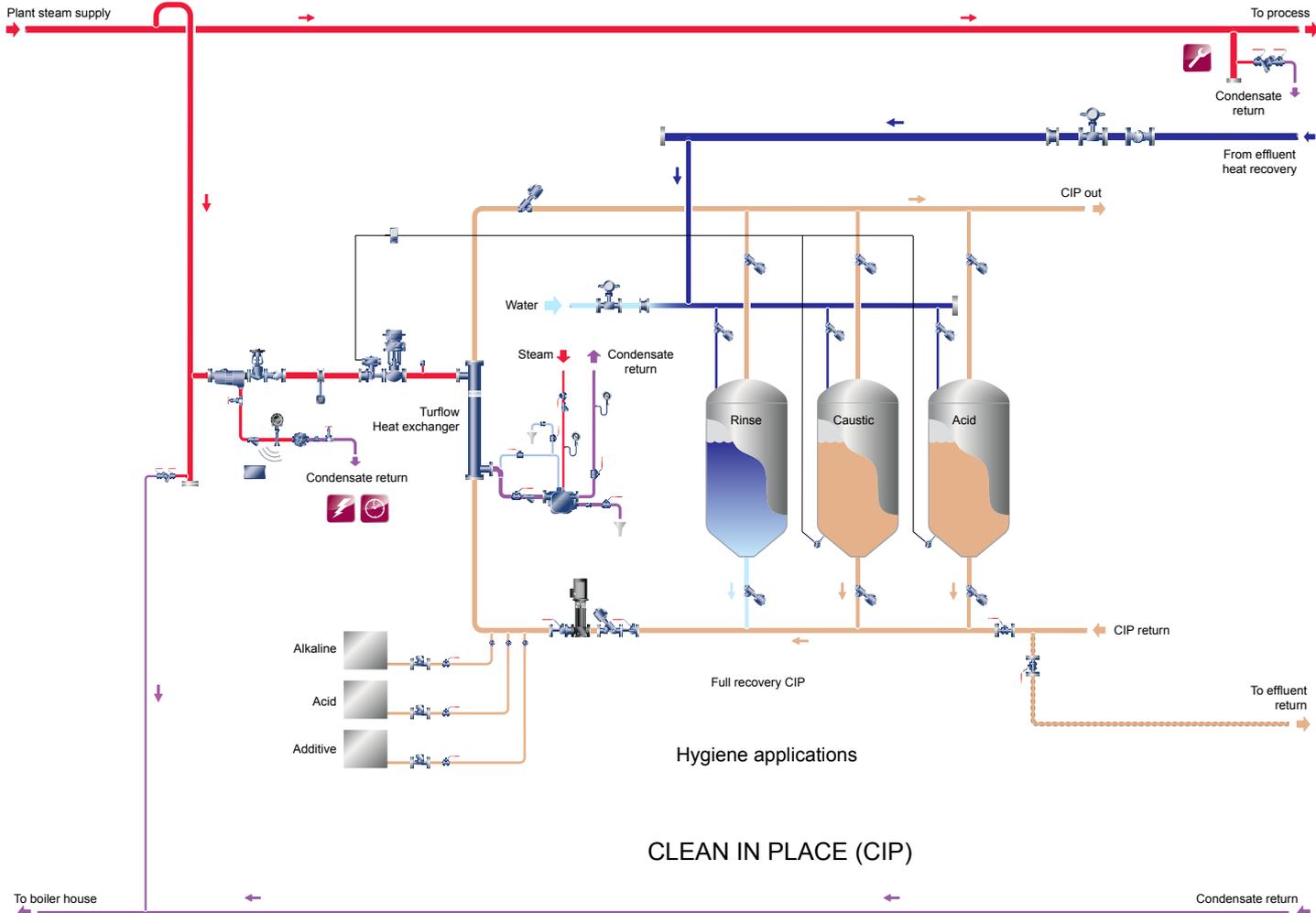
Water savings

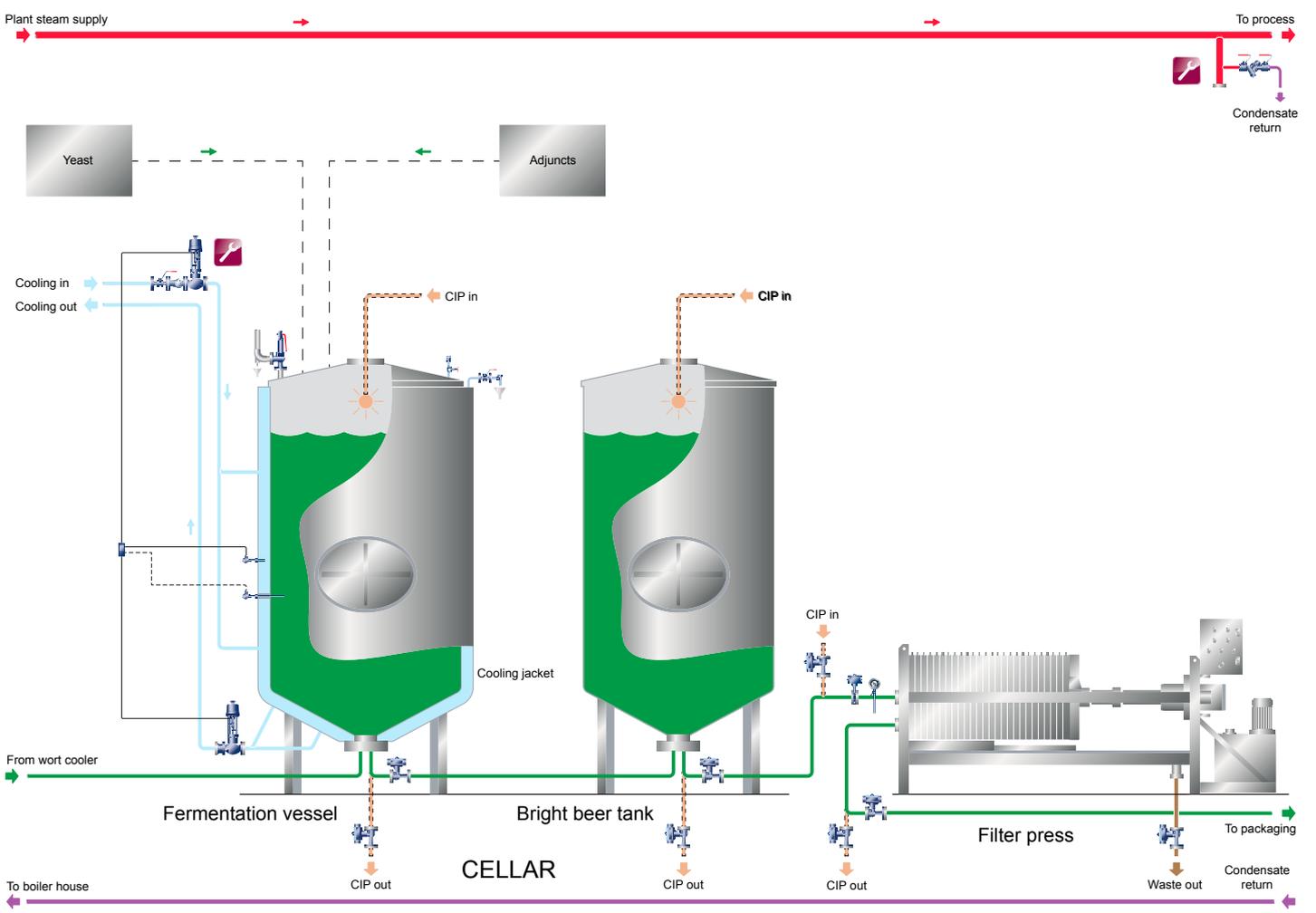
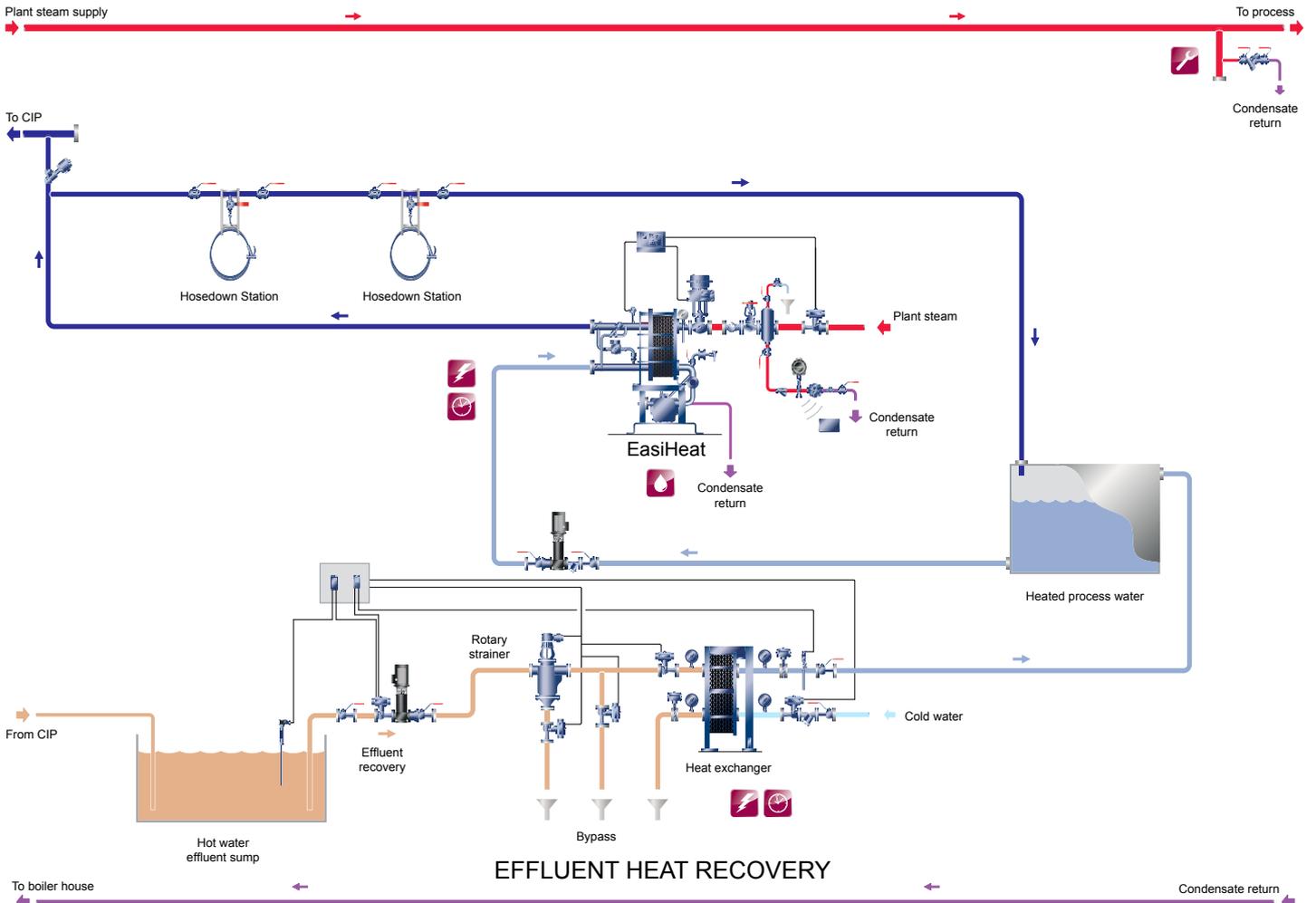


Improved maintenance



-  Product quality assurance
-  Water savings
-  Improved maintenance







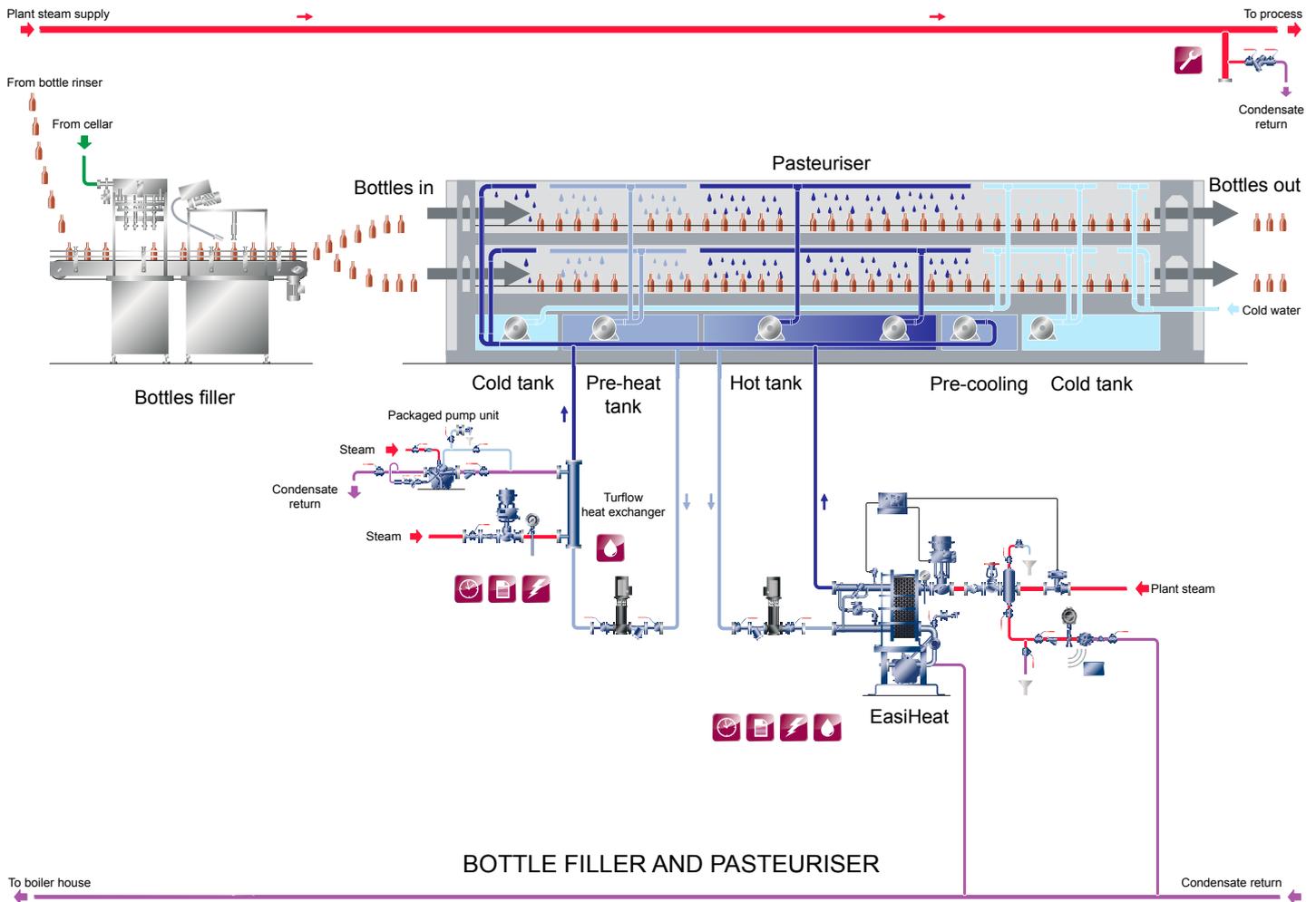
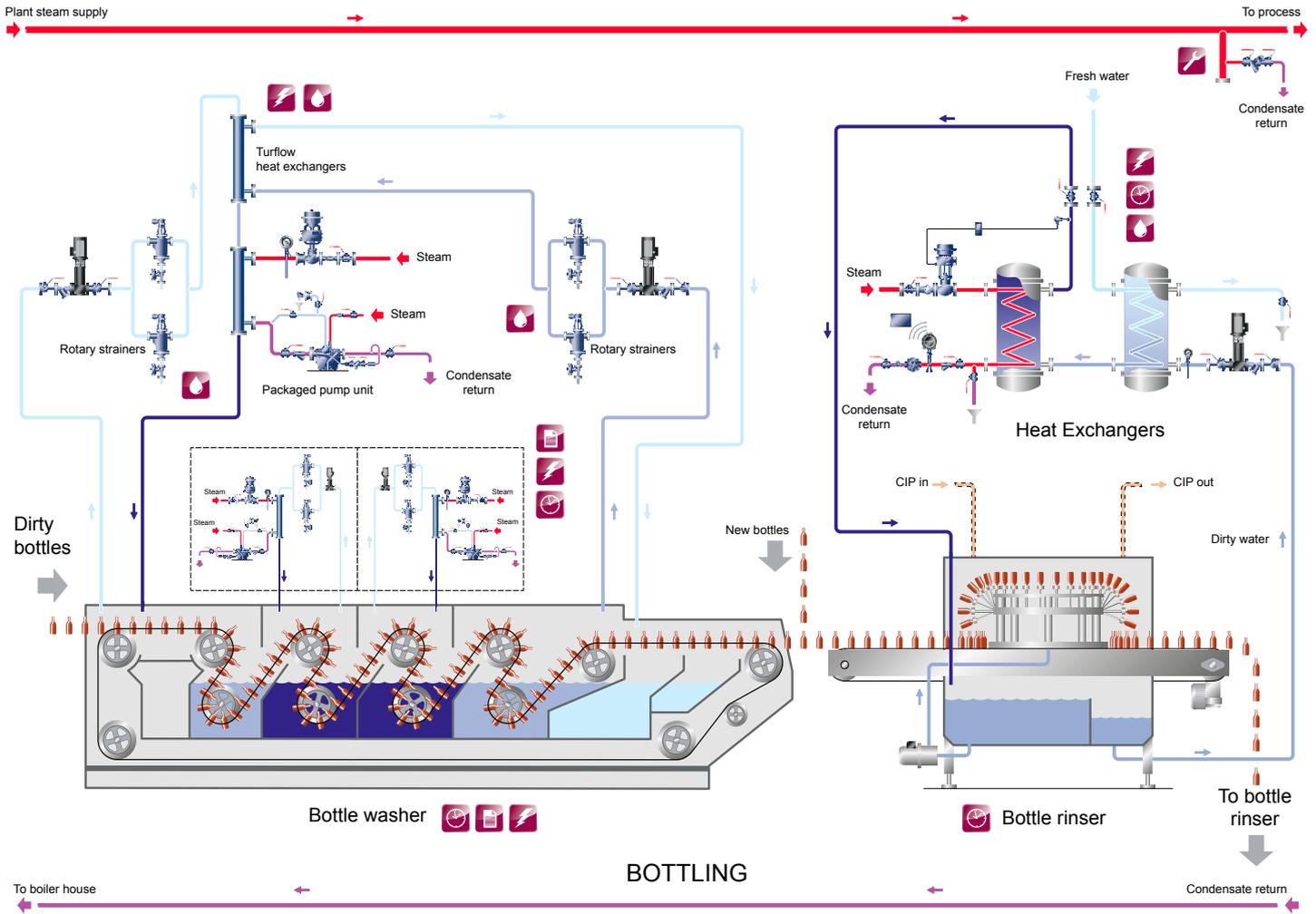
Product quality assurance



Water savings



Improved maintenance



KEY

 Energy saving opportunities

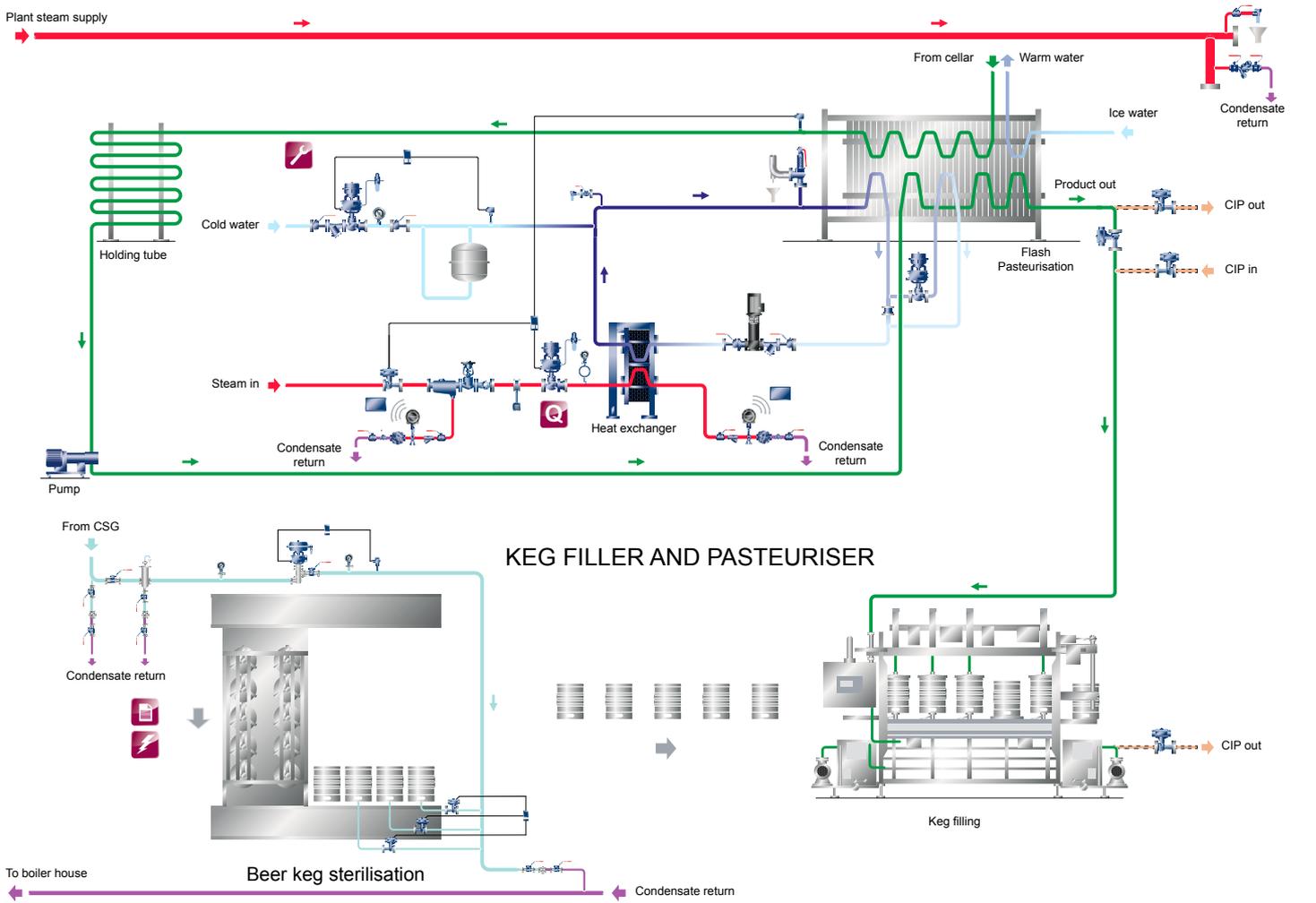
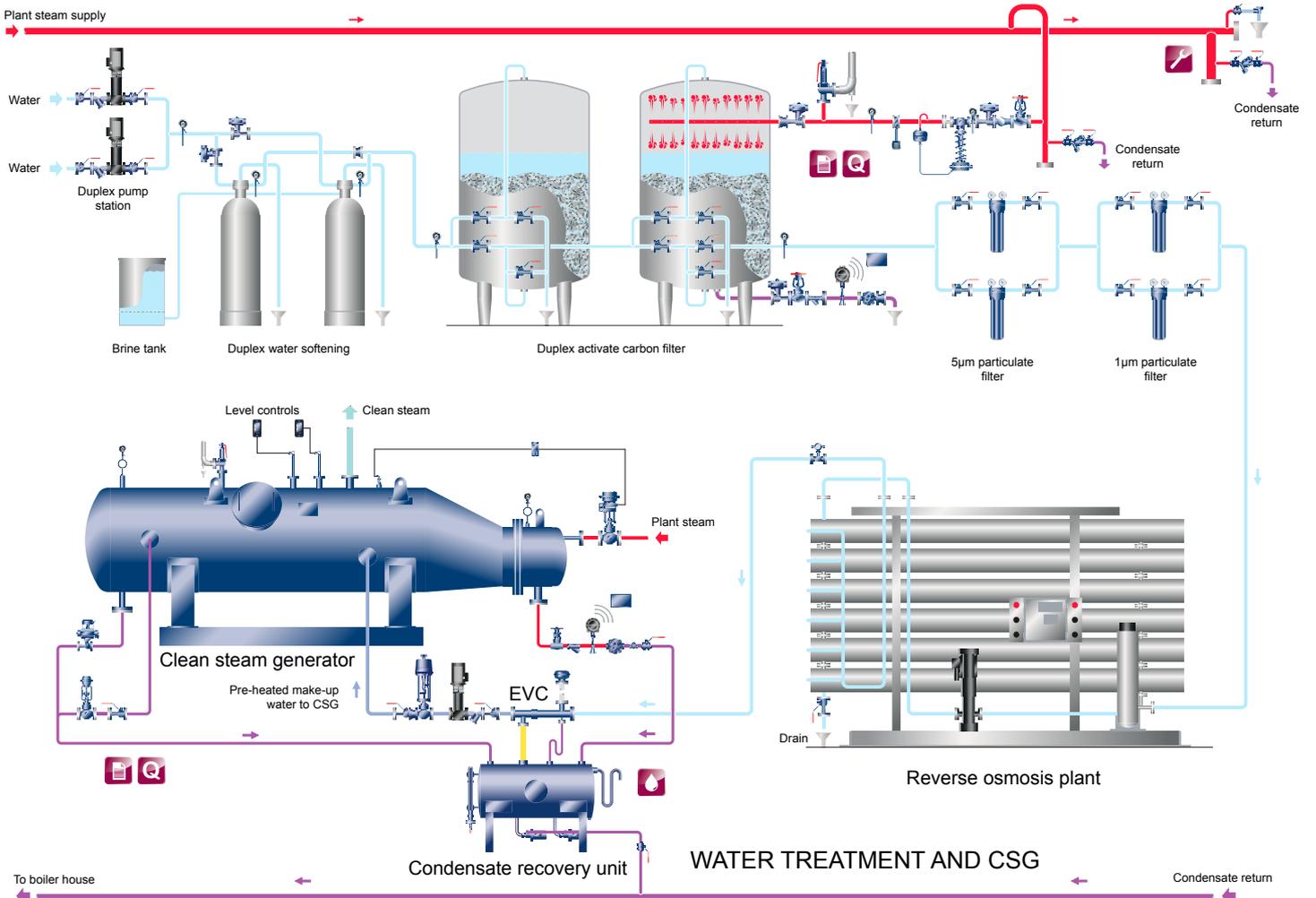
 Process time improvements

 Case study available

 Product quality assurance

 Water savings

 Improved maintenance



Helping you achieve your sustainability targets

There are many energy-intensive steam using processes in a brewery such as wort boiling, pasteurisation and Cleaning in Place (CIP).

However, there are many opportunities for improving energy efficiency in steam systems.

To identify improvement opportunities in your steam plant, one of our specialists can review your existing installation, make initial recommendations, then analyse and present them with our findings.

Installation of our innovative steam system technologies, could help you improve energy efficiency through reduced carbon emissions and water consumption.

Reducing carbon emissions and water use

Steam usage in your brewhouse can account for up to 66% of the total system demand.

Innovation in condensate and heat recovery as well as, monitoring technology, provides many new ways for you to substantially improve the efficiency of existing systems to help lower carbon emissions.

Beer typically contains just four ingredients – hops, malted barley, water and yeast – so it is no surprise that brewers are very proud and very protective of the water they use. Indeed, many brands will argue that their success lies in the water from which they are produced. This means any efforts to improve water efficiency in the brewhouse must be balanced with the need to protect beer brands' recipes and flavours.



Brewing

THE IMPORTANCE OF

Steam quality

There is a growing trend for breweries to upgrade the quality of their steam supply from filtered to clean steam. For processes where steam comes into contact with beer, such as keg sterilisation, bottle capping and system wide Sterilise in Place (SIP), clean steam is a safer choice.

Clean steam eliminates the risk of contamination and ensures consistent control of critical steam quality attributes such as taint and taste, dryness, superheat and non-condensable gases, all of which could adversely affect the process, equipment and final product.

There is no specific legislation governing the quality of steam in breweries. Manufacturers are, however, legally bound to ensure the quality of the beer by identifying potential hazards and controlling them, typically by using a Hazard Analysis Critical Control Point (HACCP) approach.



Book a steam quality audit for your brewery to make sure your steam quality is as it should be and provide you with recommendations on how to improve this even further.

THE IMPORTANCE OF

Condensate contamination detection



There are many ways heat exchangers can fail, including fatigue, corrosion and gasket failure. These can be particularly relevant in Clean in Place (CIP) applications.

Minor failures can remain undetected for long periods of time resulting in CIP cross contamination into the steam and condensate return system. This can result in damage to the boiler and the steam system meaning that process contamination could occur, via boiler carryover, where steam is used in direct contact with the process.

Our condensate contamination detection system (CCD) will safeguard against unintentional cross contamination of boiler feedwater from CIP activities and faulty process equipment by automatically discarding contaminated condensate.

THE IMPORTANCE OF

Condensate recovery

Recovering condensate is one of the best ways to achieve substantial savings in energy and water costs. Using the heat from your condensed steam to preheat boiler feedwater saves energy. Typically, for every 6°C increase in boiler feedwater temperature, a 1% saving in boiler fuel consumption is achieved.

Effective steam trap management allows condensate to be removed from your steam system effectively which means that process efficiency can be optimised, equipment is protected and the condensate can be re-used.



THE IMPORTANCE OF

Heat recovery

Approximately 25% of the heat used to generate steam at 5 bar remains in the condensate when the steam condenses. You could maximise the recovery and re-use this energy with minimal system losses.

Energy can be recovered from unintentional process flash steam, wort cooling, bottle rinsing and pasteurisation. However, very often the issue is not finding the waste energy, but identifying areas where it can be used in the brewery.

By sharing our extensive experience and expertise, we can help your brewery exploit this otherwise lost energy. You could preheat applications such as mashing in water, lautering rinse water, pasteurisers and clean in place systems.



OVER 100 YEARS OF STEAM EXPERTISE

Steam system services

Focus on your objectives, whilst we focus on your steam system

The audit – identifying improvements through:

Boiler house audits:

- Inventory of key equipment
- Identify energy saving methods
- Advise on good engineering practices
- Identify health and safety issues
- Compliance with local regulations

Steam energy audits:

- Inventory of key equipment
- Focus on energy savings through:
 - Identifying steam leaks
 - Heat recovery
 - Utilisation of flash steam
 - Return of condensate
 - Good engineering practices
 - Process optimisation

Steam trap audits:

- Inventory of steam traps
- Tag and test steam traps
- Calculation of energy savings and return on investment
- Expert view over whole system

Our audit report will help you meet targets and maximise the potential return on investment.

Installation and commissioning

We work with your teams or approved contractors to support them in delivering the recommendations identified in our audit, within time and on budget.



Implementation	Details
1. Project management	In many global areas, we offer project management services tailored to your specific requirements.
2. Full installation work	We can arrange for approved subcontractors to carry out the work required, which we can inspect as part of a quality assurance exercise following the installation.
3. Basic product installation	Our service engineers can carry out installation of Spirax Sarco products (dependent on your location).
4. Commissioning and start-up	Our commissioning engineers ensure newly installed equipment operates at its maximum potential.
5. Installation advice	Our sales and service engineers can advise your maintenance teams on good engineering practices and on the installation of Spirax Sarco products.

Service – maintaining your plant's high performance

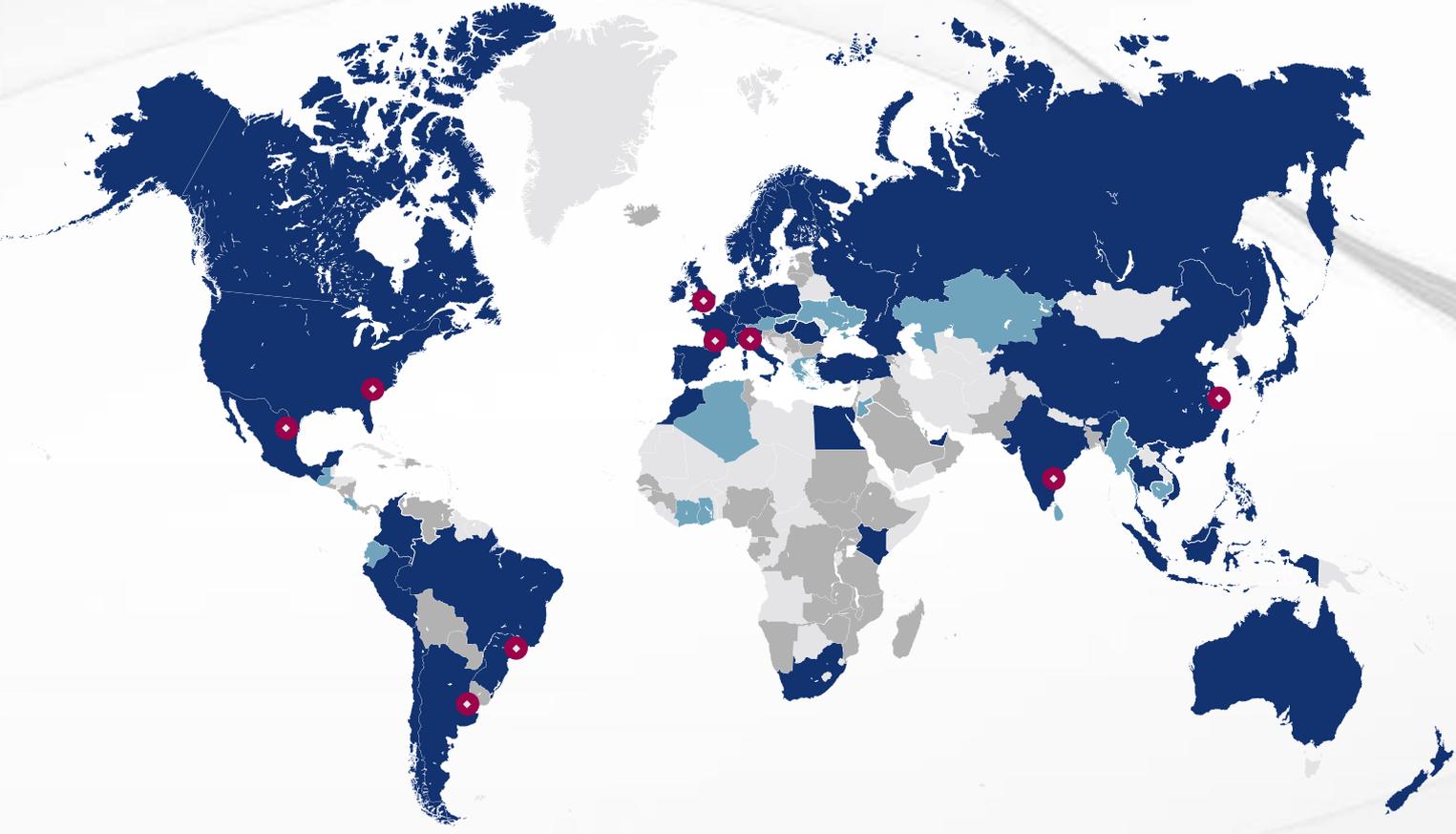
Having invested in your steam system by bringing it up to its best operating efficiency, it makes economic sense to maintain it at that level. Our engineers will help you to put together a service package that balances your maintenance requirements with your budget.

The range available

Service	Details
Service agreements	Spirax Sarco offer service agreements enabling you to focus on core business activities, while we focus on aspects of your steam system. Examples of service agreements include: <ul style="list-style-type: none">• Boiler house• Flowmetering• Controls• Steam trap management• Engineered systems
Recalibration	Certain equipment such as flowmeters and control equipment requires regular calibration to maintain accuracy and control.
Repairs, breakdowns and trouble-shooting	Spirax Sarco offer repair services, either on site, or through our many service departments around the world. We have a team of Service Engineers who can rapidly respond to your requests, normally within 24 hours.
Warranty	All Spirax Sarco products are covered by a warranty. Any equipment found to be faulty through manufacturing defects will be replaced within the stipulated warranty period.

Contact Spirax Sarco for help and assistance in evaluating the benefits that we can offer your brewery.





Operating Companies

Manufacturing Sites

Sales Offices

Distributors







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