EUROPE'S MOST SUSTAINABLE BREWHOUSE, MADE BY MEURA

Located in the Dutch province of Limburg, the **Gulpener Bierbrouwerij**, which started brewing back in 1825, caught the attention of beer lovers in the 80s by launching a series of special beers, long before craft beer had become 'in vogue'.

With production of 110,000 hl of beer per year, the Gulpener Brewery is an independent brewer making use **exclusively of locally-grown raw ingredients** (max 25 miles around the brewery) and with an unfailing focus on **continuously decreasing their energy consumption** throughout the production process.

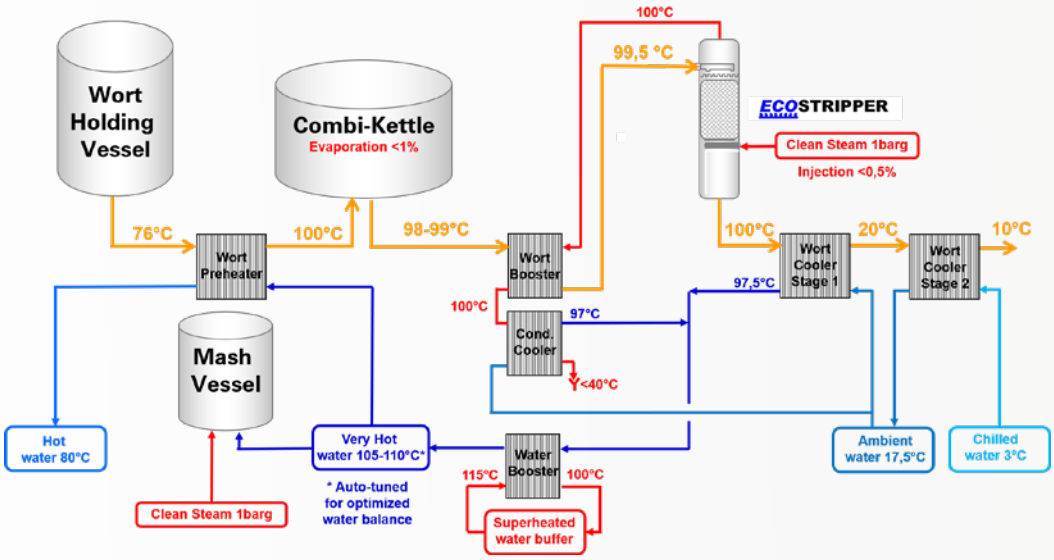
In 2018, determined to make even greater energy savings in the brewhouse while at the same time increasing their brewing capacity, Gulpener Brewery called upon **Meura** to develop a technology to help them further enhance sustainability.

The Gulpener team expressed their intention to be **carbon neutral** by 2030. To help them reach this goal, based on its proven Meurastream concept Meura developed the **Meurastream Green**!

In addition to a reduction in thermal energy, excess hot water and electrical energy, the Meurastream Green also **reduces peak thermal energy consumption**. This makes it possible to brew without industrial steam, and thus **fossil-fuel-free**.

In order to achieve this specific process, Meura delivered the following equipment among others:

- 2 mash tuns with Aflosjet technology
- 1 Meura2001 Junior for throws of 1,800 kg malt equivalent equipped with a GIS tank to increase density
- 1 holding vessel of 95 hl
- 1 wort pre-heater, with 105-110°C water as energy source
- 1 combi-kettle (wort kettle/whirlpool) with 2 hop dosing units
- 1 Ecostripper (0.5% evaporation) with 2 steam condensers for energy recovery
- 1 wort cooler with wort aerator
- 1 hot water tank for 82°C water
- 1 very hot water tank for 105-110°C water
- 1 CIP station for the brewhouse
- Dosing stations for acids, salt, enzymes, sugars etc.



Gulpener's brewhouse is applying the well-known Meurastream concept, which means a de-intensified boiling (hot treatment with < 1% evaporation and a stripping by the Ecostripper) and recovery of the energy from wort cooling for wort pre-heating. New in this brewhouse, is the water booster that heat water after cooling from 97°C to 110°C (this could be done with "green energy"). The very Hot water at 105-110°C is further used for wort pre-heating and mash heating.

For the pilsner style beers, industrial results show a thermal energy consumption of < 13.1 MJ/Hl and no excess of how water production! Moreover, the water consumption is expected to be at < 1.2 Hl/Hl cold wort!

The Gulpener Bierbrouwerij has a very diverse portfolio of beer types. About half of their production is a pilsner-style beer and the other half is accounted for by all kinds of top fermenting beers (ales, IPAs, wheat beers, acid beers etc.). It is the first brewery worldwide where all these beer types are produced on **Ecostripper** technology!

The Ecostripper is an innovative technology that has a key role in energy reduction and is designed for **ANY** brewer keen to work with the most sustainable process possible.

As explained by Jan-Paul Rutten, General Manager of Gulpener Bierbrouwerij : "The Meura Ecostripper replaces the cooking process, so that in the new situation only 1% of the brew evaporates compared to the 10% in the old situation. Partly because of this, energy consumption has been drastically reduced! Our Meura Ecostripper is a lot faster, uses less energy and it also ensures that less than 1% of the brew is evaporated!"

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Moreover, since the Gulpener Bierbrouwerij uses a very large variety of local raw ingredients, they needed a **highly flexible brewhouse**. Thanks to the **Meura2001** deployed in the brewhouse and able to filter any type of raw ingredients, be they malted or unmalted, today the brewery is able to create any beer at will! The first new beer produced with their new Meura brewhouse was a Strong Rye Tripel with **40% unmalted rye**!

The first brew was produced in July 2020 and thanks to this revolutionary concept, today the total thermal **energy reduction of the brewhouse stands at 75%** compared with the previous installations!

With such an ecologically sound brewhouse, the Gulpener brewery is today **Europe's most sustainable brewhouse**. And to crown this success, in November 2020 the brewery was presented with the "Duurzaam Ondernemerschap 2020" (Sustainable Enterprise 2020) prize by Her Majesty **Queen Maxima of The Netherlands** in person!

Meura is very proud be the supplier of the most sustainable brewhouse in Europe and thanks the Gulpener Brewery for placing their complete trust in our processes and technologies!

***Olivier Simal**, CEO of Meura and **Jan-Paul Rutten**, General Manager of Gulpener Brewery*

A FEW WORDS FROM

Jan-Paul Rutten, General Manager of Gulpener Brewery

Why did you choose Meura to support you in your project?

Our new brewhouse project was very ambitious. We wanted to create the most sustainable brewhouse in Europe. Meura understood our questions and, besides that, there was the willingness to think "out of the box" and create innovations to reach our goal.

What is the impact of your new equipment on the quality and taste of your beers?

The impact is positive. The Meura2001 provides a lot of freedom to use local grains, specialty grains and even unmalted grains. The wort is now of much better quality and it is our opinion that the taste of most of the beers has improved as well.

Let's take a huge step into the future: How do you imagine yourself in 10 years' time?

Fossil-free. The new brewhouse is equipped to be connected to a heat pump. That next step will be the key to fossil-free beer production in Gulpen!