

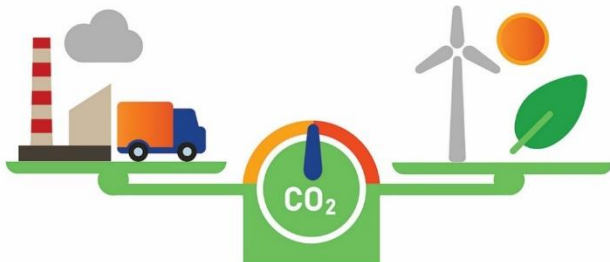
CAVIBEER

THE FULLY GREEN TECHNOLOGY FOR MAKING BEER



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## CAVITEK

Cavitek S.r.l. (an Italian company, with registered office at Via Cairoli SNC, 06023 – Gualdo Tadino –PG, VAT no. 03757240548) is the full owner of the international patent No. WO/2018/029715, which consists of a completely new method and apparatus to produce beer using hydrodynamic cavitation, named “CAVIBEER®”, and all related exclusive rights.

## BIRTH AND DEVELOPMENT

- ♦ Cavibeer was created thanks to the collaboration between Cavitek and National Research Council of Italy (“CNR”).
- ♦ The ongoing collaboration with scientists who are recognized as the world's leading experts in controlled hydrodynamic cavitation has allowed Cavitek to develop, test and perfect a “**disruptive**” method of brewing.

## BEFORE AND AFTER CAVIBEER

- ♦ Since the dawn of time, thousands of years ago, man has produced beer with essentially the same technology, i.e. using thermal energy sources, thus using fossil fuels ...until Cavibeer.
- ♦ In fact, Cavibeer allows for the production of **the first 100% ecological beer in the history of humanity.**



## CAVIBEER = Y2050 IS NOW

- ♦ The World is aiming for Y2035, or more likely (maybe) Y2050, for ZERO CO<sub>2eq</sub> emissions.
- ♦ Producing **1Lt of beer with the old technology causes emission up to 2kg of CO<sub>2eq</sub>**, while with Cavibeer you can **immediately achieve ZERO CO<sub>2eq</sub>**.
- ♦ Thanks to Cavibeer (and Cavibeer only) beer can be made using exclusively renewable energy: **the green transition has already been fully achieved** as to brewing.

## WHAT DOES THIS ACTUALLY MEAN?

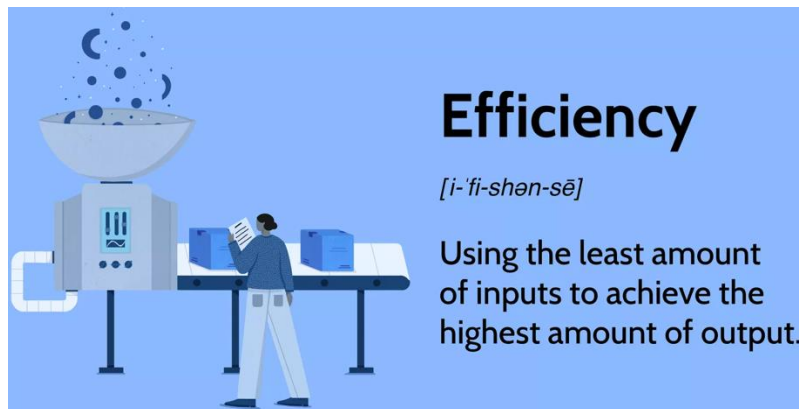


- ♦ Investments for the transition to Cavibeer can be facilitated through the tax credits of the “*Piano Transizione 5.0*” ( <https://www.mimit.gov.it/it/incentivi/piano-transizione-5-0> ).
- ♦ The positively disruptive impact of Cavibeer is not “only” ecological but also commercial, due to the return that the **communication of “the first 100% ecological beer in the history of humanity”** can guarantee.
- ♦ But that's not all, because there are **other 4** sets of **fundamental benefits** of Cavibeer.



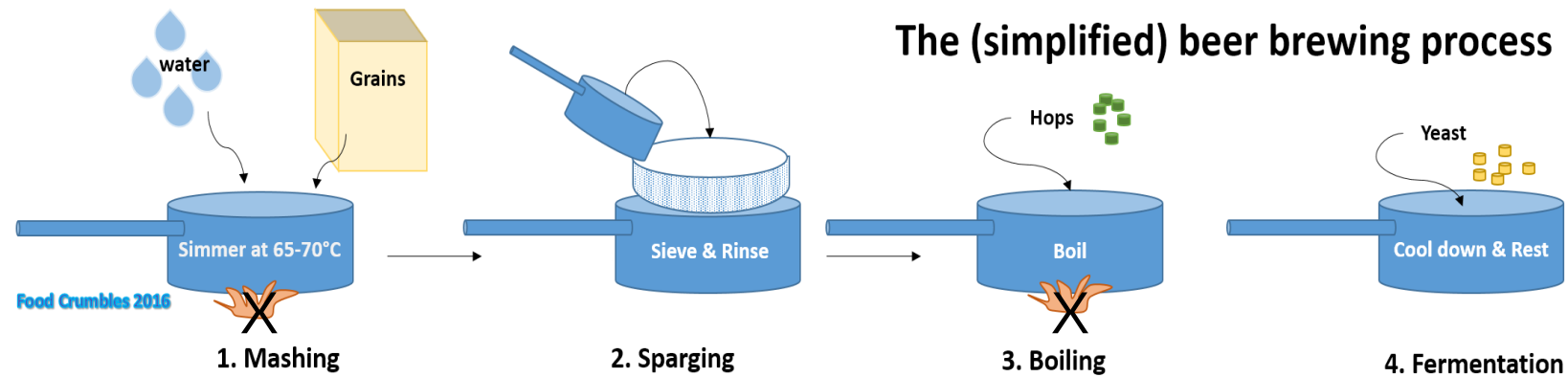
### 1. SUSTAINABILITY

- ◆ Brewing using fossil fuels is no longer sustainable.
- ◆ Cavibeer, being powered only by electricity, enables working with exclusively renewable energy: Cavibeer is the only **sustainable technology** for making beer.
- ◆ And of course, the taste of beer produced with Cavibeer is identical to that produced with the old technology.



### 2. EFFICIENCY

- ◆ Cavibeer remarkably **reduces the overall energy requirement** of the production process by **more than 40%, and boiling by 80%**, compared to old technology.
- ◆ Whole grains can be used with no grinding, rest times in mashing are remarkably shorter, and all steps of boiling phase are completed well below 100°C.
- ◆ In a nutshell, a **single pump input generates and sustains both cavitation and heat** needed for brewing.
- ◆ Moreover, unlike the old tech, heating is **evenly distributed throughout the tank**.



### 3. SAFETY

- ◆ Cavibeer is a **totally safe method**. The patent has in fact been tested in collaboration with some of the world's leading producers, that have confirmed that Cavibeer's brewing is safe and free of contraindications.

### 4. HEALTH

- ◆ Cavibeer guarantees the preservation of the “good” substances in beer [**+polyphenols and +antioxidants**] and the reduction of the adverse effects of the “bad” ones [**-gluten**].
- ◆ Moreover, crushing, homogenization and pasteurization are achieved at lower temperatures, which also means a **longer shelf life** [i.e., a more sustainable, more efficient and cheaper process to make a longer lasting and healthier product].





THE FIRST 100% ECOLOGICAL BEER IN THE HISTORY OF HUMANITY



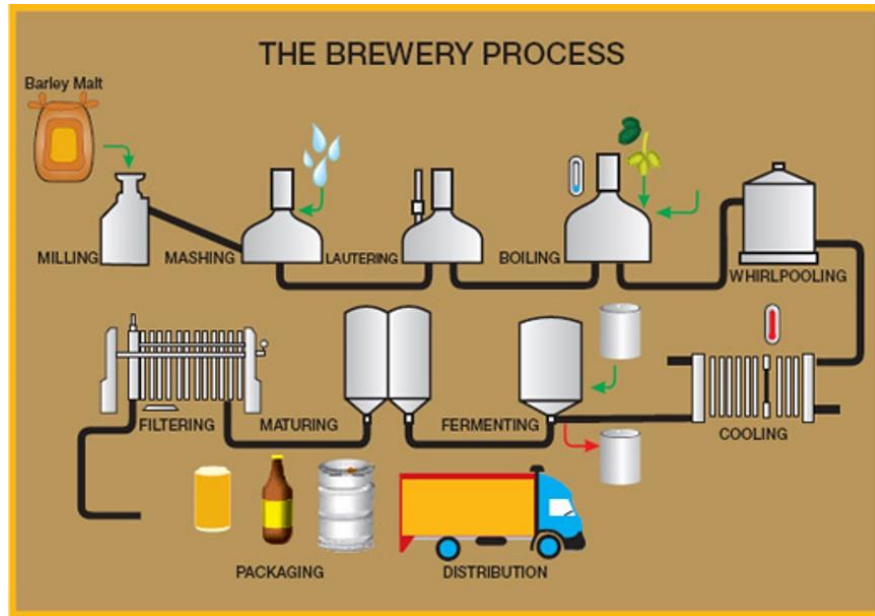
THE HEALTHIEST WAY TO MAKE BEER



[CAVI]BEER IS A GOOD IDEA



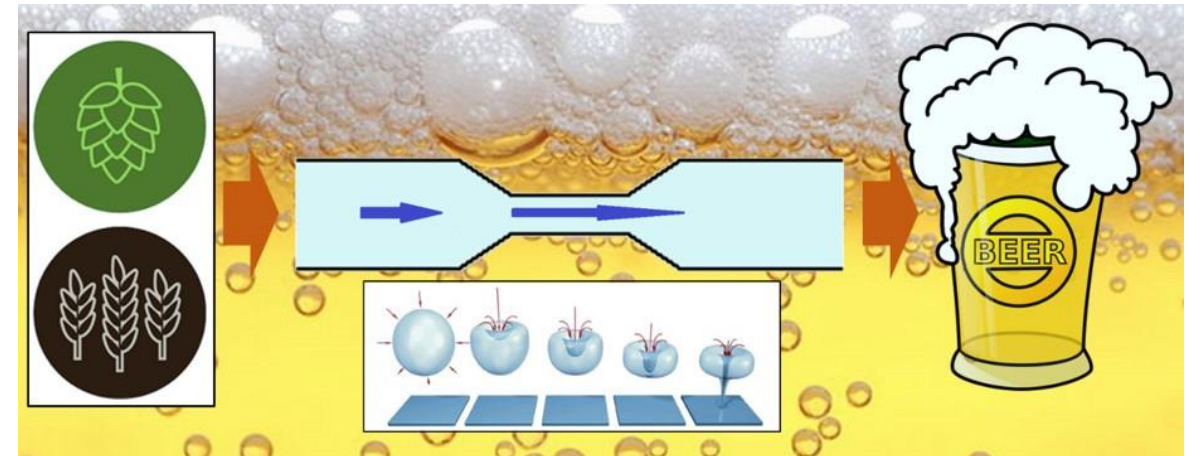
## OLD PROCESS



TRANSITION TO



## CAVIBEER



MEANS SWITCHING TO  
A PROCESS WHICH IS



FASTER  
CHEAPER  
HEALTHIER





## PLUG & ...BREW

- ◆ The implementation of the patented Cavibeer technology is extremely simple, as it is sufficient to **plug Cavibeer equipment into the tanks** used for brewing with the old technology, and **that's it**.
- ◆ Even the industrial scalability of Cavibeer for production with tanks of any capacity has already been verified and the technology has shown always perfect brewing results, also thanks to the volumetric heating of the entire content of the tanks (which is impossible with the old production process). Basically, the energy efficiency that Cavibeer guarantees increases with increasing production capacities.
- ◆ To tangibly demonstrate the ease of operation of Cavibeer, Cavitek has created a “drive-on” machine that can be taken anywhere for testing.

## SO, JUST PLUG & PLAY CAVIBEER

to achieve the carbon-zero transition,  
the reduction of the required energy input,  
and a healthier and longer-lasting final product.

## APPLICABILITY OF HYDRODYNAMIC CAVITATION PROCESSES TO OTHER SECTORS

- ♦ In a variety of applications, hydrodynamic cavitation process may **yield greater by a factor of >1.3 to >35** compared to alternative processes, such as thermal treatment, acoustic cavitation, high-pressure and high-speed homogenization, supercritical fluid extraction, ultraviolet irradiation, pulsed electric field, catalytic hydrodesulfurization, etc..
- ♦ Basically, in all production processes that require or imply **extraction**, **co-extraction**, **grinding** and/or **boiling**, controlled hydrodynamic cavitation can bring significant benefits in terms of plant and process simplification, ease of use, energy, efficiency and healthiness, without ever modifying the molecular structure of the substances to which this technology is applied.
- ♦ For example, this happens in the production of **vegetable milk** (e.g. oat, rice, soy, hazelnuts, or almond milk), **instant coffees**, and **nutraceuticals**; extraction of **cocoa** beans and nutraceutical exploitation of cocoa shells, extraction of any kind of **oilseeds and legumes** in high concentration, instant **sugar dissolution** in water, extraction in **vegetable oils**, etc., are already verified and straightforwardly implementable applications.
- ♦ Cavitek/CNR team has the know-how and expertise to develop all such further applications.



Website

<https://cavitek.it/>

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