



Bühler and Vyncke form strategic partnership to offer low-carbon-emissions food plants

Bühler Group and Vyncke form a strategic partnership to offer integrated solutions with which biomass side stream products are transformed into clean process energy while reducing the customers' carbon footprint.

The dependency on fossil fuels – and with this, CO₂ emissions – can decrease from 20-100 percent, depending on the raw material and side stream products. This means that in some cases, food plants can become fully carbon neutral. The first focus of the partnership is the segments of cocoa, oat and malt processing.

“This partnership is a key element in our strategy to massively reduce CO₂ in the value chains of our customers,” says Johannes Wick, CEO of Bühler Grains & Food.

“Many industries rely on our solutions to reduce their fossil fuel consumption. With Bühler, we now aim to also become the standard to reduce the CO₂ footprint of the food industry,” says Peter Vyncke, owner of Vyncke. “Together, Bühler and Vyncke can now offer integrated and optimised solutions where economic and ecological benefits go hand in hand.”

Creating climate-neutral energy from biomass

Biomass by-products are generated in almost all food processes, with typical examples being the processing of grains, rice, corn and cocoa. Today, by-products are often either used for animal feed or simply disposed of. From

biomass by-products, food manufacturers can also produce a climate-neutral form of energy.

Unlike the combustion of fossil fuels, the use of biomass energy helps to control greenhouse gas emissions as the only fraction released corresponds to what the plants previously took from the atmosphere during their growth, which is less than transporting the side stream products to a place where they would be used for feed or disposal, this process creates a neutral CO₂ cycle.

With its new equipment, digital services and retrofit offerings, Bühler has already made strong progress in making its solutions more energy efficient. “By adding Vyncke's energy recovery processes to our portfolio, we can offer our customers low-to-zero carbon food solutions,” says Johannes Wick.

Belgian technology supplier Vyncke specialises in energy production from a wide range of biomass by-products, including industrial or municipal wastes. The range of biomass-based fuels available for energy production is broad, from agricultural and wood residues to sludges from industrial processes, recycled wood, and specially grown energy crops.

Vyncke designs and builds green and clean energy systems that combust biomass and waste to produce thermal process energy from 1-100 megawatt hours (Mwh) and electrical energy from 0.5-15 megawatt electrical (Mwe).

Outside of energy-intensive industries, most companies have tended to view energy procurement as a cost to be

managed rather than a strategic area in the value chain. Yet today, energy is becoming one of the most important levers for business success.

With their cooperation, Bühler Group and Vyncke are addressing this issue to develop solutions for more sustainable food production, with holistic process chains in which energy recovery is integrated so that external energy consumption and energy costs can be reduced. This not only contributes to greater sustainability, but also opens competitive advantages for food producers through greater energy efficiency.

“Today, we are far from exploiting the full potential of recovering energy from side stream products. Our goal is to reduce the energy consumption of a food plant by up to 70 percent. The beauty of our solutions is that sustainability and economic criteria go hand in hand.

Today, we are already enabling our customers to reduce emissions by 2.5 million tons of CO₂ annually. By partnering with Bühler, we can further improve and scale these solutions in an integrated approach to create a much larger positive impact,” says Peter Vyncke.

Recovering thermal energy from biomass

One particularly important joint project will be the expansion of a malt production plant for Bühler's long-time business partner, Malteria Oriental S.A. in Montevideo, Uruguay. Malteria Oriental S.A. belongs to the Grupo Petrópolis, one of Brazil's largest beer producers. Their brewing business requires more malt, as beer consumption in South America has grown steadily in recent years.

In malt houses, the thermal energy consumption for

drying malt is enormous. In the project, Vyncke will be responsible for recovering thermal energy from biomass, which is a by-product of malt production. Through an on-site energy audit, Vyncke developed a set-up to reduce the size of the energy system by 30 percent, creating savings in the total investment as well as the operational costs.

Vyncke will build a turnkey 20-megawatt superheated water boiler with dual combustion systems, which will burn internal barley husks and plant rejects, completed by externally sourced wood chips. This will save 35,000 tons of CO₂ emissions each year compared to standard operational practices in Uruguay.

The new malt house is designed for a batch size of 260 tons of barley and has an annual capacity of 77,000 tons of malt. Commissioning and production are scheduled for March 2022.

“By working closely together, we aim to execute projects with less coordination effort for our customer. Our joint innovative strength will drive us into the future and our customers will have ever better and more efficient solutions at their disposal,” says Johannes Wick.

Both Vyncke and Bühler have set the goal of reducing energy consumption in all new food plants by at least 50 percent by 2025. Together, both partners want to create the possibility of making malting plants CO₂ neutral.

The project in Uruguay is just the beginning. In the future, both partners intend to coordinate their solutions technologically in a targeted manner.

For more information about Bühler partnerships and product launches, visit the Bühler Virtual World 2021 website: <https://virtualworld.buhlergroup.com/agenda>