

PROSOL inaugurates an advanced biomass boiler at its Venta de Baños plant

The coffee manufacturer **PROSOL** inaugurates an advanced **biomass boiler** at its plant in Venta de Baños (Palencia), **which uses coffee grounds and forest chips instead of natural gas**. This installation, key to its decarbonisation strategy, was presented at an official event with the participation of the president of Castilla y León.



Veolia and **Vyncke**, companies associated with **AVEBIOM**, have participated in the design, installation, start-up and operation of the plant.

In this regard, Veolia has been in charge of advising PROSOL in defining the project from the beginning. And once the plant has been built to meet its needs, it is responsible for operating and maintaining the biomass boiler, guaranteeing its operation 24 hours a day, 365 days a year.

The facility has required an investment of 13 million euros and will generate a **significant impact in terms of the environment, employment and use of local resources**.

The boiler, designed and supplied by Vyncke, has been specifically configured to meet the energy needs of a coffee processing plant. It has the capacity to generate **11 tons of steam per hour** to serve the plant's various manufacturing processes: to feed coffee bean drying and roasting equipment, and to clean and sterilize production equipment.

The boiler has a **nominal efficiency of 87%, with peak performances that can reach up to 89%**, exceeding the usual efficiency standards thanks to an **optimized fuel recovery system**. To achieve this performance, the boiler is equipped with a water-cooled mobile grate and unburned waste recovery systems, which are reintroduced into the combustion process, maximizing the use of biofuel.

Two biofuels instead of natural gas

The main fuel used by the boiler comes from PROSOL's own production process: **coffee grounds, a by-product with a high calorific value of 5,900 kcal/kg**. In addition, wood chips from the Sierra de la Culebra, affected by forest fires two years ago, are used.

Veolia Biomasa is responsible for producing and supplying the necessary **sustainable wood chips**. Furthermore, with experience in using coffee grounds as biofuel in other European plants, Veolia is managing to operate the boiler with maximum efficiency and significantly reduce the costs of waste management at the coffee plant.

By replacing natural gas with these biomasses as an energy source, the plant will reduce its operating costs and also decrease its CO₂ emissions by 14,500 tons per year. This reduction is part of the company's roadmap, which seeks to achieve carbon neutrality by 2030.

Emissions control and efficiency

The facility includes an **advanced gas purification system with continuous monitoring** to ensure compliance with the most stringent environmental regulations. Exhaust gases are subjected to a filtration process with cyclones and bag filters, as well as lime injections to reduce sulphur oxides (SOx) and a non-selective catalytic reduction system (SNCR) through the injection of urea to control nitrogen oxides (NOx). These systems **allow the plant's emissions to be reduced to levels below the industrial average**.

In addition, the installation is equipped with an **economizer**, which uses the energy of the exhaust gases to preheat the water entering the boiler, thus improving the overall efficiency of the system.

This technological solution, which **combines high energy efficiency with advanced waste management**, is a model to follow for the **agri-food industry**, and demonstrates how **biomass can be a key source of renewable energy in the decarbonisation of different industrial processes**.

The President of the Junta de Castilla y León, Alfonso Fernández Mañueco, attended the inauguration and highlighted the importance of projects like this for sustainability and the circular economy in the region. He also pointed out that the Junta will continue to support this type of initiatives through funds allocated to **energy efficiency and renewable energy**.