

Introduction of “D-Bio Steam,” a Biomass Boiler System That Uses Tea Grounds as Fuel

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Osaka Gas Co., Ltd.
Daigas Energy Co., Ltd.

Daigas Energy Co., Ltd. (President: Masayuki Inoue; Headquarters: Chuo-ku, Osaka; hereafter “Daigas Energy”), a wholly owned subsidiary of Osaka Gas Co., Ltd. (President: Masataka Fujiwara; Headquarters: Chuo-ku, Osaka), has decided to install “D-Bio Steam,” a biomass boiler system that uses tea grounds as fuel, at the Kainan Plant of Wakayama Nokyo Foods Industry Co., Ltd. (President: Hideki Takenaka; Headquarters: Wakayama City, Wakayama Prefecture; hereafter “Wakayama Nokyo Foods Industry”), with which an energy service contract*¹ was signed recently.

This will be Japan’s first installation of a biomass boiler system that uses tea grounds as the main fuel for on-site self-sustaining combustion and steam utilization.

Daigas Energy will proceed with the construction of the system, aiming to start providing energy service in May 2023.

The Kainan Plant of Wakayama Nokyo Foods Industry produces beverages, such as barley tea. Since tea grounds generated in the production process of tea beverages are difficult to burn stably due to their high water content of 60 to 70%, they have been conventionally disposed of as waste without being utilized as fuel.

Daigas Energy has recently developed the biomass boiler system “D-Bio Steam” by combining a fluidized bed furnace*² manufactured by Okawara Mfg. Co., Ltd. and an exhaust gas boiler manufactured by Miura Co., Ltd. and making use of Daigas Energy’s own combustion technology and waste treatment technology. This system enables stable self-sustaining combustion of tea grounds, making it possible for users to utilize steam generated by an exhaust gas boiler for their production process. At the Kainan Plant of Wakayama Nokyo Foods Industry, the amount of waste is expected to decrease by about 90% annually by using tea grounds as fuel, and CO₂ emissions are expected to decrease by about 600 tons annually by using carbon-neutral steam.

Since this system can be also installed at factories where coffee grounds and waste mushroom beds*³ are generated, Daigas Energy will offer it to a wide range of potential customers.

The Daigas Group announced the “Daigas Group Carbon Neutrality Vision” on January 25, 2021, and is promoting an initiative to develop technologies and services for the realization of carbon neutrality by 2050 and to contribute to global environmental conservation together with customers.

Daigas Energy contributes to the reduction of waste and CO₂ emissions by supplying safe and secure energy to customers and providing solutions that meet a wide range of customer needs, such as the introduction of biomass systems.

- *1 Energy service contract: A type of contract in which Daigas Energy installs its equipment at the customer's premises, saving the customer from buying it and helping them achieve zero initial costs. This time, JA Mitsui Leasing, Ltd. owns the system and leases it to Daigas Energy, which provides processing and maintenance services to the customer.
- *2 Fluidized bed furnace: A combustion furnace that can stably burn even substances with a high water content by causing combustion in high-temperature sand fluidized by the force of air blown from the bottom.
- *3 Waste mushroom beds: Fungus beds that have been used for cultivating mushrooms and are no longer needed.

[Overview of the biomass boiler system that will be installed at the Kainan Plant of Wakayama Nokyo Foods Industry]

