

## Turn Waste into Valuable Resources

### Case Study : Effective Reuse of Waste at Biogas Power Generator

In FY2013, the Maruha Nichiro Corporation Shimonoseki Plant installed a biogas power generator and is effectively utilizing food scraps discharged as food waste by the plant as feedstock for the generator. Being able to use waste as feedstock for the biogas power generator has greatly reduced the amount of waste discharged by the plant. In FY2022, the plant was able to reduce waste output by a total of 108 tons. We will continue working to decrease and reduce the volume of waste we emit.



Shimonoseki Plant biogas power generator

Maruha Nichiro Corporation's Oh-e Plant began operations of a biogas plant in March 2021. The foodstuff residues and scrap materials generated from the plant are methane fermented using methane bacteria to produce biogas with methane as the main ingredient. The methane gas extracted from the biogas is then used to power a generator, and the electricity and heat generated are utilized for the plant facilities. In FY2022, we were able to reduce CO<sub>2</sub> emissions by 149 tons -CO<sub>2</sub>/year and reduce residue by 1,016 tons.



Mechanical building where the biogas power generator is installed



A fermentation tank for fermenting food residue, etc.



Generators that generate electricity using methane gas

### Case study : Effective Use of Cooking Oil as Biofuel

Up until now, the cooking oil waste generated in the process of product development had been disposed after being solidified by saponification at Maruha Nichiro Corporation's Tokyo Development Center. Since the end of FY2020, we started a program to collect cooking oil waste for effective reuse as a raw material of biofuel. In FY2022, approximately 0.52 tons of cooking oil was effectively utilized.



Tokyo Development Center's waste oil recovery site

### Case Study : Froth Reuse

The Maruha Nichiro Kitanippon, Inc. Kushiro Plant produces primarily canned salmon, Pacific saury and sardines. During the production of canned Pacific saury and sardines, a suspension with high oil content known as “froth” is produced in large quantities. Previously, we were not able to reuse this, so it was treated as industrial wastes. But in FY2013, we installed a high-efficiency dehydrator in order to reduce the volume of froth and turn it into a resource. This processing made it possible to use the froth as a raw material for fertilizer, which led to a reduction in waste of about 984 tons in FY2022.



Kushiro Plant



Dehydrator with a greatly improved



Froth after dehydration

### Case Study : Turning Food Scraps into Meal

In 2014, Kingfisher Holdings acquired International Fishmeal and Fish Oil Organization Standard for Responsible Supply certification. The company makes fish meal out of the heads, backbones, skin, and internal organs of raw fish that are left over during production of canned and frozen foods.

Kouyou Suisan Co., Ltd. uses sardines, Pacific saury and salmon to produce products such as sashimi, fillets and salmon roe. The backbones and internal organs of raw fish left over when producing products were originally discarded as waste. But in June 2017, the company began operating a meal plant in order to reduce and reuse waste. Including those discharged from nearby group plants, we process approximately 5,000 tons a year.



Meal production line



Backbones, organs, etc. used as raw materials



Product (fish meal)

## Case Study : Commercialization of Food Waste Generated During Processing

Reducing food waste in the food production and supply chain is attracting attention as a global issue, and food manufacturers are expected to take action to solve problems. Although the heads of salmon that are generated during the processing of salmon for export were conventionally discarded, Sai Gon Food Joint Stock Company has begun selling them as a commercial product for the domestic market in Vietnam. Through these activities, they have reduced food waste by about 50 tons per year. Also, Seafood Connection Holding B.V., based in Europe, embarked on activities in 2020 to sell salmon heads and cod flakes, etc. left over during processing as ingredients for fish nuggets instead of disposing of them. Through these efforts, we have achieved food waste reduction by about 3.5 tons in 2022.

