

July 10, 2025

Creating Energy From Food Waste: Development of a 2.5 kW Biogas Power Generator

Toda Corporation (Head Office: Chuo-ku, Tokyo; President: Otani Seisuke) is pleased to announce that it has developed a 2.5 kW biogas power generator. Where biogas power generators were previously challenging to implement, the development of this power generator enables even small- to medium-sized food factories to convert food waste into clean energy while simultaneously realizing reduced waste disposal costs and CO₂ emissions.

1. Background to the Development

Food factories generate large volumes of byproducts, including vegetable scraps and food processing residue. Although recycling for these byproducts has been advancing in recent years, byproducts that lack interested parties have been disposed of as industrial waste, incurring costs while also becoming a source of CO₂ emissions.

Biogas power generation has existed as a solution for some time. However, even the small-scale generators previously available had power generation outputs on the scale of several dozen kW and above, making implementation feasible only for relatively large facilities that generate one ton or more of food waste per day.

Against this backdrop, Toda Corporation developed a 2.5 kW power generator that can be implemented even at small- to medium-sized food factories.

2. Development Highlights

- Approximately 1/10th the output of conventional small biogas power generators

Toda Corporation's generator can be installed even in small- to medium-sized facilities where implementation was previously challenging.

- Operation time of 10 hours or more on 200 kg of food waste (Operation time differs depending on food waste type)
Clean energy can be utilized by using the biogas generated from small amounts of food waste.
- Simultaneous reduction of waste disposal costs and CO₂ emissions

Toda Corporation's generator allows for reductions in disposal costs and CO₂ emissions since even vegetable scraps can be used rather than disposed of, as is often the case when not used for animal feed.

3. Power Generator Features

- Engine: Single cylinder water cooled (engine capacity of 220 cc)
- Fuel: Biogas (Methane concentration of 50% to 70%)
- Rated power output: 2.5 kW

4. Expected Applications

Food factories, beverage factories, meal supply centers, school lunch facilities, employee cafeterias, sake brewing facilities, central kitchens, grocery stores, agriculture (agricultural residue), etc.

5. Future Developments

Toda Corporation will continue its efforts to promote the adoption of renewable energy and contribute to the development of a decarbonized society through the effective use of biogas in food factories and other various industries.



2.5 kW biogas power

The Company will optimize its management resources to promote revenue growth and improve capital efficiency, aiming to enhance corporate value while achieving its medium- to long-term target of 10% ROE.