

Compost and green energy from food waste to power a city with 20,000 inhabitants

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Is it possible to produce clean energy from food waste?

We invite you to visit an anaerobic digestion plant which is a reference point for this sector. Follow me.

We are located in a small town in the north of Italy.

Here we can find the Bioman plant, a company that has decided to give food waste a new use, transforming it into a highly valuable resource from an environmental and economic point of view.

The organic municipal waste is gathered from door to door in this area and brought here by truck to be transformed into compost and energy.

The composting plant behind me treats food waste combined with garden and other industrial waste.

At the end of the composting process, a certified compost is obtained which is mainly used in organic agriculture.

On the other hand, this is an anaerobic digestion plant, installed in 2012, and is made up of four digesters which transform the organic waste into biogas and digestate. We are talking about 280 thousand tonnes per year of waste produced in an area of 2.5 million people.

The biogas is a fuel used by the cogeneration plant, which consists of four 998 KW endothermic engines, producing each enough green renewable energy to satisfy the demand of a city with slightly more than 20 thousand inhabitants, close to 34 GWh per year.

The generated electricity, after satisfying the demand of the plant's auxiliaries, is fed to the grid, receiving benefits from governmental incentives.

The heat, instead, is used for the operation of the digesters and for heating the facility's buildings.

Shortly, a district heating network will be built to give heat to public and private buildings, similar to what happens in the neighbouring city of Este, where the anaerobic digestion plant gives heat to hospitals and schools.

The digestate obtained from the anaerobic digestion process is treated in a biological conditioning plant, where clean water is extracted to be re-used for the fire protection system, vehicle cleaning or as precious water, avoiding in this way wasting potable water.

A virtuous cycle where every aspect of what is commonly known as waste is valorised to the maximum, but for Bioman, it becomes our resource.