



# DC WATER'S THERMAL HYDROLYSIS and ANAEROBIC DIGESTER PROJECT

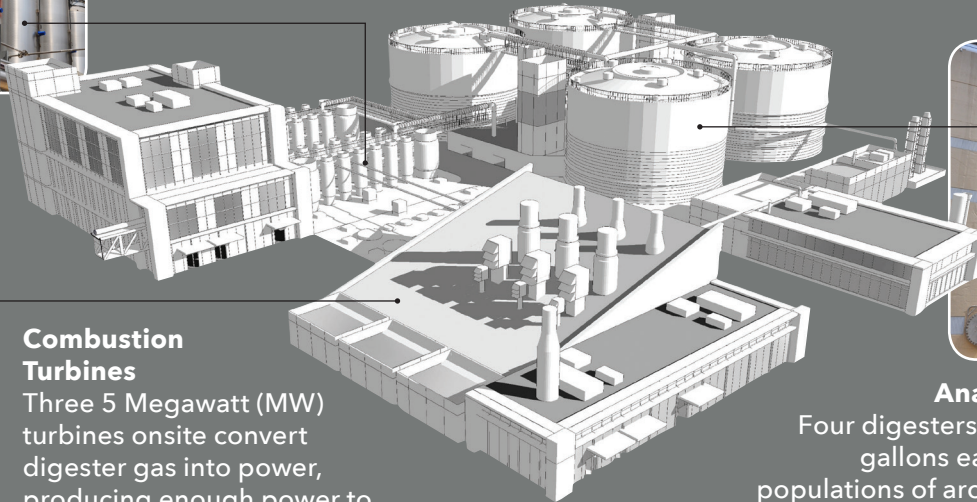
## Overview

This groundbreaking project is the first to employ thermal hydrolysis technology in North America, and the largest such facility in the world. The project efficiently provides clean, green renewable power by converting collected sewage solids into methane, which is cleaned and then sent through turbines for the production of electric power and recoverable heat.



### Thermal Hydrolysis

Thermal Hydrolysis is a process that treats and prepares the sewage solids as a sterile food source (carbon) for the microbes in the digesters, whose job it is to convert the carbon to methane. A high-heat, high-pressure process followed by a sudden pressure drop causes the cell walls of the organic matter to burst, making the food very available for the microbes in the digesters.



### Combustion Turbines

Three 5 Megawatt (MW) turbines onsite convert digester gas into power, producing enough power to run one third of Blue Plains, the largest advanced wastewater

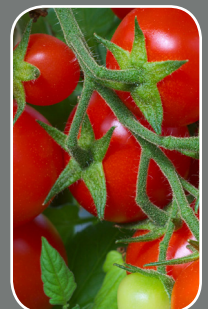
treatment plant in the world. In addition, heat is recovered and converted to steam, which is used to heat the thermal hydrolysis process, so that there is no external energy needed for the project.

### Anaerobic Digesters

Four digesters onsite (3.8 million gallons each) contain dense populations of archaea and bacteria that convert the food source into gas. As a result of the hydrolysis process, the digesters can convert more of the solids into gas, making the process highly efficient. Gas collected in the digesters is cleaned and sent to the combustion turbines.

### Nutrient-rich Biosolids

The solids exiting the digesters meet and exceed all EPA standards for soil production and use in both rural and urban settings. In the past, DC Water exported biosolids to farmers in VA and MD. With this new technology, DC Water now has a product for use within its service area for landscaping, restoration, gardening, and tree planting.





## Thermal Hydrolysis and Anaerobic Digester Project

### Fun Facts

This facility uses CAMBI's thermal hydrolysis process to "pressure cook" the solids left over at the end of the wastewater treatment process.

DC Water is the first thermal hydrolysis facility in North America and the largest in the world.

DC Water will process 200,000 tons per year of biosolids to make into soil products.

Just like the bacteria in our stomachs help us make energy from our food, this process uses bacteria to convert our waste into gas, which we use to make electricity—this is accelerated nature!

The project will reduce greenhouse gas emissions by 50,000 tons of CO<sub>2</sub>e equivalent metric tons—that is like removing over 100 million car miles from the road.

The turbines that convert the gas to energy are the same as used in turbo jets.

The four digesters hold 15.2 million gallons of sludge— enough to fill 23 Olympic sized swimming pools.