

Biosolids Energy Project

1.5 MW Biosolids Energy Electrical Generation Project
The Metropolitan District Commission (MDC) Hartford, Connecticut

American Heat and Power developed a biosolids-to-energy project to produce electricity from the waste heat of the existing biosolids thermal processors at the MDC Water Pollution Control Facility in Hartford, Connecticut. The energy recovery facility consists of two waste heat recovery boilers, one for each active furnace, providing high pressure steam to a turbine-driven electric generator.



AHP developed a computer-based model which maps the performance of multiple hearth furnaces, allowing accurate estimates of the energy performance of the upgraded furnaces. This model was used to predict the anticipated performance of the furnaces as they supplied heat energy via the exhaust stream to the new waste heat boilers over the next 20 years of the anticipated steam/electric plant life. Actual plant operating data provide by The MDC was placed into this detailed operating model. There are currently three (3) multiple hearth furnaces installed at The MDC facility, but only two are currently operational. Contingencies are in place to connect the third unit to the waste energy recovery boilers if/when the MDC decides to upgrade and operate the third furnace.

Utilizing a separate waste heat boiler for each operating furnace insures that the exhaust streams from the two (2) furnaces are kept separate to eliminate the need for expensive balance piping at the boiler. This method of operation also keeps the exhaust stream from each furnace in its original permitted flow path. The only change in operations is that the exhaust stream has some of the heat removed in the waste heat boiler prior to the pre- quench section of the existing wet scrubber. Simply opening and closing valves located in the exhaust ducting changes the exhaust flow to the waste heat boiler and back to the pre- quench section of the existing wet scrubber or back to the current flow pattern through the existing scrubber system.

The Hartford Biosolids Energy Project will produce up to 1.50 MW of power from the exhaust of the biosolids furnaces that was formerly wasted. 100% of the energy produced will be used to offset energy used at the plant, thus saving the taxpayers millions of dollars over the life of the project, and reducing our dependence on fossil fuels.