

Back River Wastewater Treatment Plant

Baltimore, Maryland



Wastewater leftovers power electricity/steam generator

Johnson Controls has developed a combined heat and power plant in Baltimore that uses the residual of treated wastewater as fuel. The plant will generate more than 2.4 megawatts of electricity per year, provide steam to offset process heating requirements and produce hot water for boilers. As an added benefit, the digester gas cogeneration plant at Baltimore's Back River Wastewater Treatment Plant will reduce emissions, save taxpayer dollars, address workforce development, and support the local economy. Construction will be complete and the system running in early 2008.

Cleaner fuel, fewer flares

Each year, the City of Baltimore spends about \$40 million on energy, including electric, steam and natural gas. With this project, Johnson Controls is helping the city reduce energy costs – both by consuming less energy and by producing it more efficiently.

The existing wastewater treatment process results in solids that are digested, producing methane gas which is 21 times more harmful to the atmosphere than carbon dioxide and often burned off with 20-foot flares. Johnson Controls' cogeneration process will clean and use the methane, providing an efficient fuel and eliminating the need for flares. Some gas will be used

in existing boilers and heaters, and the remainder will power the generators that produce electricity.

Annual savings: \$1.8 million

The Back River plant will reduce the city's energy bill by \$1.4 million each year, while reducing emissions by 12.9 million pounds of carbon monoxide and 7.7 million grams of nitrogen oxide. It also increases energy security as gas is piped directly to its end use and provides an excellent hedge against fluctuations in fuel and electricity prices.

Johnson Controls will implement a total of \$14 million in energy conservation and facility improvement measures, which will save the city \$1.8 million in energy and operational savings annually over 10 years.

Added social benefits

More than 25 percent of the project work has been done by local MBE/WBE contractors.

Johnson Controls also developed a partnership with the city for a summer program to provide Baltimore youth with leadership development and meaningful summer jobs in conservation.