



Columbia Association Saves \$25,000 a Year with New Combined Heat and Power (CHP) System

In 1967, a forward-thinking developer broke ground on a brand-new community 20 miles south of Baltimore. The development would be a complete city with a sound economic base and housing to match the incomes of those who work there. Further, it would respect the land, provide for the growth of its residents and make a profit. Now, 50 years later, Columbia, MD, has about 36,000 homes and apartments and is living up to its founders' aspirations, topping *Money* magazine's 2016 list of the best places to live.

The organization charged with preserving the small city's enduring appeal is the Columbia Association (CA), a nonprofit public service corporation. CA serves a community of about 100,000 residents and operates three fitness clubs, two golf clubs, an ice rink and more than two dozen pools.

"Intrinsic in our operations is a progressive view toward sustainability," says Jeremy Scharfenberg, CA's energy manager. That's one of the reasons the association has been an active participant in BGE's Smart Energy Savers Program® for years, investing in upgrades to improve the community's energy efficiency and save money.

The Opportunity

Supreme Sports Club is the largest and most energy-intensive facility CA operates. It features an eight-lane lap pool, a children's wading pool, a 12,000-square-foot arena for basketball and volleyball, racquetball courts, an indoor track and 2,400 square feet of weight training space.

The facility runs 24/7, and the equipment there uses a lot of electricity. The pools and hot tub, in turn, put a high demand on natural gas for hot water. Previously, those processes ran separately, with electricity drawn from the grid and boilers heating up the water.

"Through our research, we found that a CHP system would be a cost-effective and impactful project. The payback was good. It was a no-brainer to move forward on it."

— Jeremy Scharfenberg,
Energy Manager,
Columbia Association

Savings at a Glance

Columbia Association took advantage of financial incentives from BGE's Smart Energy Savers Program to install a combined heat and power system in a 24-hour sports complex.

BGE program:	Combined Heat and Power
Total project cost:	\$250,000
Incentives paid:	\$60,000
Cost to the customer:	\$190,000
Electricity savings:	416,000 kWh/year
Cost savings:	\$25,000/year
Payback:	7 years



Jeremy Scharfenberg, Energy Manager, Columbia Association



One of CA's earlier upgrades was installing energy-efficient lighting in the weight room.



The new generator sits outside the facility, while a new pump and heat exchanger were installed in the existing mechanical room.



The CHP system supplies heat to the sports club's domestic hot water and pools.

"We had already worked aggressively on the low-hanging fruit, such as upgrading the facility's lighting," Scharfenberg says. "And then we were looking to do something bigger to lower operating costs and our environmental footprint."

That's when he started talking with his BGE account rep about the feasibility of installing a CHP system at the sports club. CHP systems generate power and thermal energy from a single onsite fuel source, improving efficiency and reducing costs.

The BGE Solution

BGE's Smart Energy Savers Program provides incentives at various steps in the process of implementing a CHP project, starting with design, then installation and finally production, which helps make these systems more economically viable.

"We spent a lot of time making sure the technology would work with our building's operating characteristics," Scharfenberg says. "The availability of the incentives was a driving factor that helped facilitate the project and offset some of the costs. BGE's technical support to validate the feasibility of the system also was critical."

CA completed commissioning and start-up of its new 60-kilowatt CHP system in March 2016. The new CHP unit combines electricity generation, space heating and water heating into one system. The generator burns natural gas to heat the water and turns a generator that produces electricity at the same time, delivering efficiencies in energy use and cost savings.

The Benefits

Since the installation was completed, energy use is down about 20%. Scharfenberg says the association is saving about \$25,000 a year on energy costs. He adds that although the 7-year payback period is long for an energy management project, the CHP system fit well with CA's mission to be more efficient and sustainable.

"As the first in Howard County to install this type of CHP system, we're thrilled to be on the leading edge and actively promoting this technology and how to leverage its benefits," he says. Already, Scharfenberg has led several tours of the facility with commercial entities in the area, including one with students from the University of Maryland.

"If you're a commercial operation with significant and constant electrical and thermal loads," he says, "there are great opportunities for deploying a CHP system. It takes time and a champion to lead the effort, but we're seeing the benefits, and we're really happy with the result."

The BGE Combined Heat and Power Program provides financial incentives and technical assistance to help industrial and commercial customers install onsite CHP systems. Financial incentives are available for various stages of project deployment, from design to installation to production. For more information, visit BGESmartEnergy.com.

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