

HARBEC, Inc. Upgrades Combined Heat and Power (CHP) Facility

Ontario, NY based HARBEC, Inc. completes a \$1.9 million upgrade of its CHP plant, adding additional thermal and electric capacity for the Carbon Neutral manufacturer's facility.

ONTARIO, NY-- In 2001 HARBEC, Inc. (www.HARBEC.com) began a journey to become more energy independent and efficient by installing a combined heat and power (CHP) plant to serve the thermal and electric requirements of its 50,000 square foot manufacturing facility. The CHP plant has been instrumental in helping HARBEC continuously improve its operating efficiency; achieve carbon neutrality; and proactive [Eco-Economic](#) pursuit of [sustainable manufacturing](#).

After fourteen years of successful operation, HARBEC announces that it has completed a \$1.9 million upgrade to its CHP plant. HARBEC completed the upgrade with financial support from the New York State Energy Research and Development Authority (NYSERDA). HARBEC chose to upgrade and refresh its CHP plant, enabling further Eco-Economic return on investment, energy efficiency, cost savings, and performance.

Bob Bechtold, President of HARBEC remarked, *“Fourteen years ago HARBEC discovered the incredible benefit of combined heat and power (CHP). Today our manufacturing company is more resilient, efficient, and competitive because of the opportunity CHP provided. The CHP plant upgrade serves to further strengthen HARBEC’s ability to manage energy efficiently and competitively into the future. Further, this latest improvement to our facility demonstrates HARBEC’s longstanding and unwavering commitment to sustainable manufacturing. We are grateful for vision and ongoing support from NYSERDA and our project team toward completion of the CHP upgrade.”*

HARBEC’s original 750 kW maximum potential CHP plant included 25 compressed natural gas (CNG) fueled 30 kW Capstone microturbine generators. HARBEC used the thermal energy from the microturbines’ exhaust to heat and air condition its 9,000 square foot injection molding area, and a 17,000 square foot manufacturing and warehouse area of its facility. HARBEC’s original CHP plant had a seven year return-on-investment (ROI). HARBEC’s in-house utilization of thermal energy generated from the CHP plant achieves about 60% BTU efficiency.

CHP, also referred to as cogeneration, offers the potential to reach efficiencies that triple or even quadruple, conventional power generation. Although it has been a possibility for nearly a century, in the mid-1980’s relatively low natural gas prices made it a widely attractive alternative for new power generation. For example, as part of its CHP plant HARBEC uses Compressed Natural Gas (CNG) to run micro turbine generators to produce electricity and thermal energy used by the business. As a by-product of power generation, the generators produce a great deal of thermal energy. Instead of underutilizing the thermal potential, HARBEC directs the hot exhaust from the micro turbines to a heat exchanger which, in turn, transfers the heat to water. The hot water is then used to heat the building through radiant in-floor heating systems and pre-existing forced air systems. During the summer, the hot water is sent to an absorptive chiller, which uses heat to create cold water for air-conditioning. Harbec’s co-generation operation produces less than 10% of the CO2 emissions that the most efficient oil or coal burning utilities produce to manufacture the same amount of energy. Heat and air conditioning are free by-products of the CHP process at HARBEC.

In 2015 HARBEC completed the installation of 8 new CNG fueled 65 kW Capstone microturbines (with a total rated capacity of 520 kW's). HARBEC also chose to retain 10 of its original CNG fueled 30 kW microturbines in operation. HARBEC's CHP upgrade increases its maximum potential to 820 kW. The CHP upgrade also enables HARBEC to displace 6 natural gas furnaces, 8 electric DX A/C units, and 2 electric rooftop A/C units that were used to heat and cool 14,000 square feet of machine shop and offices at its facility. HARBEC's in-house utilization of thermal energy generated from the upgraded CHP plant is expected to exceed 70% BTU efficiency.

Jeff Eisenhauer, Energy Manager at HARBEC stated, *"This was truly a team effort. Our partners, contractors, management and operations team were each engaged throughout the CHP upgrade process. The upgrade to the CHP plant provides new clean energy infrastructure and capability in support of HARBEC's commitment to carbon neutrality and smart utilization of energy resources. CHP is a critical element of HARBEC's management of energy and costs."*

For more information on HARBEC please contact us, info@HARBEC.com.

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ABOUT HARBEC

Founded by Bob Bechtold in 1977, HARBEC's mission is to provide tightly toleranced prototypes, tooling, machined components and quality injection molded parts in a sustainable manner with a social conscience. HARBEC provides superior customer service, satisfaction and timely delivery of custom engineered solutions. HARBEC proudly fosters an atmosphere of encouragement and respect for the health and prosperity of their customers, employees, and the global community.

HARBEC provides capabilities and solutions for the consumer products, sporting goods, defense/aerospace, transportation, medical, marine, and energy industries. HARBEC has capabilities in the use of innovative materials, problem-solving, and working with R&D and commercial organizations on unique prototypes or engineering and manufacturing groups on high volume production. HARBEC has capabilities for short (1-to-100 parts) or longer run (>1M parts) production.

HARBEC is certified as an ITAR, ISO9000-2008, ISO14001, and ISO50001/SEP Company, demonstrating its use of "eco-economic" decisions and policies designed to ensure that its activities are sustainable. HARBEC has developed and implemented technical and process solutions to offset emissions, utilize waste and conserve resources. HARBEC reached its goal of "no carbon footprint" in 2013. Currently, the facility has a 250kW and 850kW wind turbines and operates a twenty-five microturbine combined heat and power plant which generates electricity and provides thermal energy to meet the heating and cooling requirements of the facility. For more information, please visit: www.HARBEC.com.

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