

Salt Lake Community College

Education

The Challenge

Ten different campuses make up Utah's largest college, Salt Lake Community College. One campus, the Jordan Campus in the Salt Lake Valley, is a central location for the Health Sciences Center and allied health programs, and it serves as home to the school's baseball team. This campus includes, in addition to the baseball field, six buildings that support over 4,200 students.

In 2018, the Salt Lake City Community College facility and campus administrators sought to address energy-related challenges and costs. Key issues presented themselves during the summer, when the heat load is minimal and there are campus-wide cooling necessities. An inefficient use of two large boilers and the expensive power rate for electricity during peak demand are two of these issues.

Working with Capstone partner Horizon Power Systems, the campus installed a highly efficient Combined Heat and Power (CHP) system to provide reliable power to the 277,110 square feet of facilities. The new system will not only stabilize energy spikes and save money, but also provide lower emissions and allow excess electricity produced on-site to return to the utility.

Power Profile

Customer

Salt Lake Community College

Location

Jordan, Utah

Commissioned

March 2019

Fuel

Low Pressure Natural Gas

Technologies

- 2 C65 Microturbines

Capstone Green Energy Distributor

Horizon Power Systems



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— Mike Peterson, Energy Manager
Salt Lake Community Manager



**Smarter Energy
for a Cleaner Future**



Two C65 microturbines fueled by low-pressure natural gas provides Salt Lake Community College, located in Utah, reliable power while also reducing energy cost.

The Solution

The new system features two Capstone C65 Microturbines fueled by low-pressure natural gas. In the summer, the integrated CHP configuration takes over the heat load and provides power at a time when air conditioning, as well as baseball field lighting, needs are at their peak—often reaching 1300 kW. In the winter, the microturbines supplement the campus' heat load, and the system captures the waste heat and uses it to supplement the hot water loop that serves all the buildings on campus.

The Results

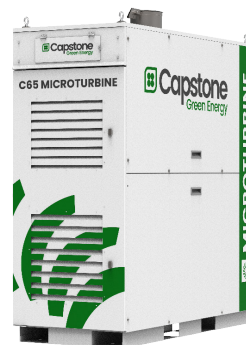
A unique installation of its kind in Utah, the project afforded numerous benefits for Salt Lake City College. First, the campus reduced its peak demand during the most expensive time of year, which allowed it to qualify for lower power rate schedule. This alone resulted in an estimated savings of \$20,000 per year. Further, any unused electricity generated on-site returns to the grid for a financial credit. However, to date, the campus has used all of electricity generated on-site.

Avoided maintenance costs also play a role. With the hot water boilers dormant for the summer, repairs are less frequent, and the equipment's lifetime extends. In addition, with less fuel needed to produce the same amount of energy, campus emissions have lowered significantly.

Commissioned in March 2019, the ROI estimate is 6.5 years, a return that would have taken longer had the school not taken advantage of the Federal ITC and MACRS tax benefits. With an anticipated equipment lifespan of 20 years, the campus—and the surrounding community—will enjoy the benefits of a cleaner, more reliable, more cost-effective energy system for a long time.

“Since Salt Lake Community College has installed the 2 Capstone Turbines, we have seen a significant reduction in kW demand which was the purpose of installing these units,” said Mike Peterson, Energy Manager for Salt Lake Community College. “Our main objective was to reduce demand below 1000 kW to qualify for a more financially beneficial rate schedule. At most, we have seen a demand of 1070 kW, which is down from initial peaks above 1300 kW. For the most part, we stay under the 1000 kW threshold.”

Capstone C65 Microturbine



A C65 Microturbine provides up to 65 kW of electrical power while the UL-Certified provides up to an additional 150 kW of thermal power for CHP and CCHP applications.