



Fontana Unified School District optimizes energy usage

Centrica Business Solutions helps the school district stay on top of its energy usage through optimized energy systems and rooftop air conditioning units, providing better comfort to students and staff.



Located in Southern California, the Fontana Unified School District educates 41,142 kindergarten through 12th grade students in 45 schools. Just 50 miles east of Los Angeles, in the heart of San Bernadino County, the school district prides itself on educating its diverse population and has an 87 percent graduation rate.

Despite the school district tackling poverty, (about 83 percent of students qualify for free or reduced-price lunch) it has a 96 percent daily attendance for all learners. More than 30 percent of the students are non-native English language speakers, which the progressive school district tries to combat with early education programs and adult classes for parents and other residents.

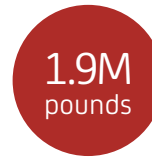
The K-12 district partnered with Centrica Business Solutions to complete an energy systems optimization project that included new rooftop air conditioning units funded through a California State incentive program, Proposition 39.

Challenge

The district's portfolio of antiquated and inefficient rooftop air conditioning units and control systems were at the end of their useful life, causing the district to invest a significant amount of time and capital in maintaining and operating them. Additionally, the old rooftop units (RTUs) were unable to maintain temperature and humidity levels within the buildings, resulting in uneven temperatures, occupant discomfort and unnecessary overuse of the units. Also, the control system did not support software updates, adding inefficiencies and a suboptimal control system to the mix.



annual savings



annual CO₂ reduction



rooftop units on 30 buildings

These challenges were amplified due to:

- Lack of budget: the school district lacked the budget for the project and endured its inefficient air conditioning units for years because it couldn't afford to replace them
- Energy costs: the inefficient rooftop units were expensive to operate and maintain and did not adequately cool the educational environments
- Uneven temperature: the inefficient and antiquated air conditioning systems did not properly cool the schools, causing students to lose focus thus slow down the learning process

Why Centrica Business Solutions?

- Improve energy management, generate revenue, reduce cost and enable a more flexible energy system
- Work with one partner for onsite energy generation, storage and operations
- 24/7 service, testing and maintenance plan, offering complete peace of mind

Solution

To reduce costs associated with operating and maintaining the cooling systems, stabilizing temperatures throughout the schools, 210 rooftop units were installed on 30 buildings, along with controls:

- RTU design: 210 of the highest efficiency rooftop air conditioning units, ranging from two to 20 tons, were installed within a three-month window over the district's summer vacation in 2016. In addition, Centrica Business Solutions worked with the manufacturer to ensure that the RTUs were installed and commissioned properly so the district could realize the full benefits of the new equipment
- Controls: commissioned controllers were installed on each unit to produce optimal humidity and temperature levels throughout the buildings. With the new remote user interface, the district can now closely monitor temperatures and humidity levels, ensuring that they are moderate and at optimal levels for students to learn and teachers to teach. The new control system features an open protocol infrastructure, giving the district the option to integrate additional systems in the future

The impact

The project has resulted in optimal educational environments for all users. For that, the Department of Energy awarded the district an A and named it a DOE RTU Challenge Winner. Additionally, the annual energy savings of 2.49 million kWh achieved equate to 199,000 gallons of gasoline saved and 133 cars removed from the road and represent the equivalent of planting 2,165 acres of trees.



The US Department of Energy presented the “Highest number of RTU installations that meet/exceed RTU Challenge specification” to Errol Glen and Bob Copeland from the Fontana Unified School District.