



East Side Union High School District



“Our new solar energy system and the numerous energy efficiency improvements ... will generate savings in the first year equivalent to the funding required for approximately 30 teacher jobs. ... At a time when our district is being forced to absorb painful budget cuts ... this program is a huge reason to celebrate.”

Lan Nguyen, President, East Side Union High School District Board of Trustees

THE OPPORTUNITY

The East Side Union High School District (ESUHSD) in San José is one of the largest high school districts in California, with a proud legacy of preparing students to meet the challenges of the future. In 2009, after a series of state funding cuts, the District was faced with critical budget decisions that required creative and responsible strategies. Inspired by the idea of addressing these pressing fiscal constraints while also establishing a new legacy as a sustainable district, ESUHSD began assessing opportunities to reduce energy costs through a large-scale solar program. In June 2011, the District completed the largest solar power and energy efficiency program at a K-12 school district in the United States. In 2016, the District completed additional lighting and solar improvements, leveraging state funds to make their facilities even more efficient.

THE PARTNERSHIP

The District selected ENGIE Services U.S. (ENGIE) to design a program that would leverage capital dollars to generate budget relief and provide renewable electrical power to its schools. Collaborating with District senior staff, principals, teachers and community members over several months, ENGIE crafted an optimal and viable program that would enable the District to take advantage of long-term energy cost savings and incentives. While the District saved resources through this ambitious solar program, it was

Program Highlights

- Will save the District more than \$43MM in net savings over the lifetime of the program
- Helped secure \$14.4MM in California solar incentives to fund implementation
- Achieved 55% reduction in energy use across sites
- Integrated the solar energy project into existing education and internship programs
- Created 85 local union jobs

Technical Scope

- 7.1 MW of solar PV power generation at 13 District sites
- Energy-efficient lighting retrofits at ten schools and the Education Center
- Premium efficiency motors and variable-frequency drives with flow control on pool pumps at nine schools



also committed to positively impacting the learning environment through energy education for teachers and students. ENGIE education specialists provided professional development for teachers and provided solar kits and curriculum to students to help the District's historic energy program come to life. Hands-on experiments aligned with state standards help to create a living laboratory promoting environmental awareness and energy consciousness. Additionally, ENGIE collaborated with Santa Clara County Construction Careers Association (S4CA) to send a group of teachers on field trips to different industry organizations to understand the real-world application of mathematical concepts to achieve success in STEM fields.

EDUCATIONAL PARTNERSHIP

Professional Development

31 teachers were trained in hands-on STEM lessons. ENGIE and S4CA designed a week-long externship program for a group of District teachers.

Internship Opportunities

ENGIE worked with a Yerba Buena High School student who was seeking to expand knowledge about the engineering industry.

Student Engagement

More than 1,000 students have been exposed to hands-on, energy-related lessons and activities.

3 DIMENSIONS OF IMPACT

ENGIE is committed to building three dimensions of impact in every customer's future:



Supporting People



Saving Money



Protecting the Environment

Over the past three years, ENGIE has monitored the program as energy upgrades offset ESUHSD's annual electric utility power purchase by more than 55 percent. This translates to carbon emissions avoidance of more than 4,900 metric tons per year, equivalent to the amount of carbon sequestered by more than 800 football fields of pine forest.

Over the lifetime of the program, the District expects to realize more than \$43 million in net savings that can continue to be directed to other high-priority District initiatives. The comprehensive program will deliver lasting benefits for many years and is a shining example of the District's fiscal responsibility and leadership in STEM education and sustainability.

ENGIE'S ENGINEERING & CONSTRUCTION INTERN, BAO THIEN NGYUEN

As part of the collaboration with S4CA, ENGIE and the District coordinated a summer internship for Bao Thien Ngyuen, a Yerba Buena High School student with hopes of pursuing an electrical engineering career. During his four-week internship in July 2015, Bao worked closely with an ENGIE engineer to perform engineering and construction research and analysis for the City of San José streetlight retrofitting project. At the close of the internship, the ENGIE team provided Bao with tools that helped him achieve success in his senior year coursework.

"The experience I got out of this internship was amazing. Not only did I expand my knowledge about the electrical engineering industry, I was also able to learn how to fully use Excel spreadsheets, AutoCad 2016, and coding fundamentals. The combination of online study and real world experiences worked well for my learning style. The most challenging part was knowing that I only had four weeks to learn and take in as much as I could from this internship. I wished it had lasted longer because there was so much I wanted to do."



ENGIE interns, Frank Osorio (Hartnell College) and Bao Thien Ngyuen (East Side Union High School District), collaborating in the summer of 2015.