



South San Francisco Unified School District



“It has been a joy to work with ENGIE Services U.S. to modernize classrooms, install new solar systems, and implement advanced, high-efficiency stadium lighting in our District. We are grateful our partnership helps us support student achievement with STEM learning opportunities which have promoted a culture of sustainability and energy consciousness across SSFUSD as we reduce our carbon footprint.”

Michael Krause, Assistant Superintendent of Business Services

THE OPPORTUNITY

South San Francisco Unified School District (SSFUSD) is continually seeking ways to enhance facilities with sustainability initiatives and drive improvements in the learning environment. Since 2010, the District has worked with locally-based ENGIE Services U.S. (ENGIE) to develop an integrated energy efficiency, STEM education, and solar power program to help lower its utility costs, while making efforts to further modernize classrooms and support student achievement. In the latest chapter of the relationship, SSFUSD has championed the makeover of the El Camino High School athletic field, installing LED stadium light fixtures on the field for the first time while expanding the District’s portfolio of on-site renewable energy. SSFUSD continues to showcase its commitment to fiscally responsible and sustainable solutions that save money, create local jobs, and inspire students through project-based learning activities.

THE PARTNERSHIP

In September 2010, ENGIE partnered with SSFUSD to help the District explore a far-reaching energy program that would have a positive impact on STEM initiatives as well as on the District’s energy profile. ENGIE designed and implemented numerous energy conservation measures that translated to robust education opportunities around sustainability science, including professional development trainings for over 150 teachers. District schools benefited

Program Summary

- Expected to achieve \$20MM in net savings as a result of Phase I energy upgrades
- Expected to achieve over \$3.7MM in net savings as a result of Phase II energy upgrades
- Offsets annual electric usage by 60% from the solar photovoltaic system
- Supports student achievement with hands-on STEM learning opportunities, including a summer STEM Institute engaging 650 students and Professional Development sessions engaging 150 teachers

Technical Scope

Phase I

- Installed 1.68 MW of solar PV capacity across 15 schools
- Upgraded to high-efficiency lighting at 10 school sites



Technical Scope (continued)

- Upgraded HVAC and boilers at two sites
- Installed new energy management systems at all school sites
- Installed irrigation control systems at all school sites
- Installed new roofs at three schools
- Designed, engineered, and implemented Human-Centric Lighting (HCL) at the District's STEM garage, including staff training on how to operate the advanced controls

Phase II

- Installed new LED stadium light fixtures at the El Camino High School athletic field
- Retrofitted 1,822 interior/exterior lighting fixtures with LEDs
- Installed 352 kW of additional solar PV capacity at three sites

"This is a dream come true for so many Colts who ever played on that field from 1961-2016... Thank you to all those who have brought lights to the beautiful Colts Field."

-Eric Jacobson, Asst. Athletic Director

from upgrades to lighting, HVAC and irrigation systems, providing improved lighting quality and indoor comfort, and reducing utility and maintenance costs.

After years of collaboration, the District and ENGIE have entered a new chapter to support the District's strategic vision, including additional solar installations, interior/exterior LED lighting retrofits, and the installation of brand new LED stadium lighting at El Camino High School's Colts Field. In tandem with these ongoing energy improvements, the partnership continues to deliver on the impactful, district-wide STEM educational programming that was started during initial phase of work. In addition to the myriad of facilities benefits, this phase of work will create 30 jobs for the skilled local San Mateo workforce and deliver over \$3.7 million in energy savings back to the General Fund over the program's lifetime.

FOCUS ON STEM

In June 2016, SSFUSD and ENGIE collaborated to launch the District's first-ever Summer STEM Institute, demonstrating the District's commitment to being a leader in STEM disciplines for student success in high school, college, and 21st century careers. The program, focused on serving students in Grades 2-8, provided direct hands-on STEM activities, real-world relevance, and project-based learning experiences.

Students in Grades 2-5 participated in a four-week program which included building energy transformation machines, engineering solar ovens, designing and testing wind turbine blades, and conducting classroom energy audits. For Grades 7-8, a two-week program was offered to two cohorts of students, and both programs together totaled 120 hours of curriculum.

Activities for the 7th and 8th Graders included building Rube Goldberg machines, designing circuit mazes, and designing, building, and testing efficient homes.

The STEM Institute brings meaningful educational enhancement to over 650 students and 31 teachers across the District.

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

SSFUSD has installed a total of 2.032 MW solar PV capacity, implemented high-efficiency energy technologies across the District's campuses, reduced its energy expenditures by over 75%, created over 80 local green jobs for the San Mateo workforce, and transformed the Colts Field. Over the past six years, the District has created engaging STEM learning opportunities that make the broader energy program come to life for students and teachers. With its solar installations, energy efficient technology, and a culture of sustainability, SSFUSD has turned its campuses into enriching living laboratories that help to promote environmental awareness and energy consciousness.

SSFUSD'S VERY OWN FRIDAY NIGHT LIGHTS: EL CAMINO HIGH SCHOOL LED STADIUM LIGHTING TRANSFORMATION

The installation of new LED stadium lighting at the El Camino High School athletic field is a central feature to supporting an enriched student and fan experience at SSFUSD in 2017. The El Camino Colts have never had permanent field lighting for any athletic events over the past five decades, relying on use of other District facilities for night games and single-use, low-efficiency rental lights. Not only are the Colts' new LEDs the most energy efficient lighting available, the directed light they cast provides razor-sharp definition,

which ensures clear visibility on the field and in the stands. The 96 brand new, high efficiency stadium lighting fixtures support 100% of Colts' night games -- increasing safety on the field while still designed to reduce light pollution in the surrounding neighborhood. South San Francisco's very own Friday Night Lights achieves great things for more than 1,400 students at El Camino High School, including:

- Allowing El Camino student-athletes to compete later in the evening, when their

parents, teachers, and community members can attend home games

- Bringing the school's stadium lighting up to existing and recently approved standards within the Peninsula Athletic League
- Creating a safe environment for evening sporting events and special community events such as graduation
- Reducing early class dismissals for student athletes