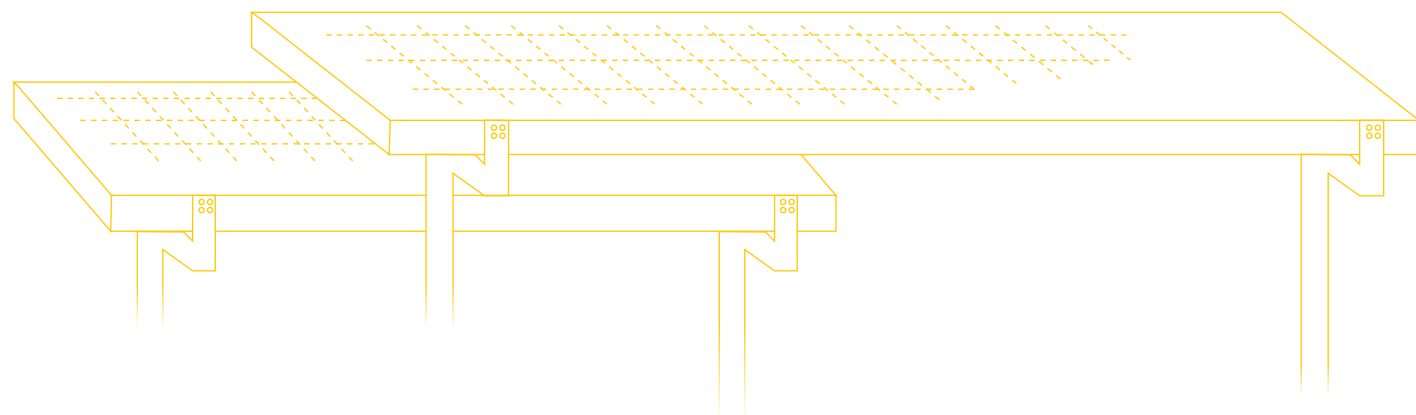


# Sustainable Solution Constellation



## Constellation cuts carbon and costs to supplement education budgets

By Emily Torem

Like many others, school districts in California experience budget crunches. Reallocating existing funds is usually the first solution, but instead of cutting from the arts or band, why not trim down fixed operational costs—like electricity?

**Constellation**, a competitive energy company, works with variety of businesses and institutions to help them do just that through affordable and accessible options for distributed energy solutions, like solar. The company recently completed a solar project for **The Chaffey Joint Union High School District** in Southern California, which allowed the school district to install the system at no upfront cost.

This was achieved through a power purchase agreement (PPA) contract model, which delivers the benefits of solar energy to educational institutions and businesses, while unlocking potentially significant savings on their energy costs. Through Constellation's end-to-end management of on-site solar installations, schools are able to free up time and funds to focus on what is really important—a win for any school district.

The complete 6.76-megawatt (MW) array will provide approximately 11,000 MW hours of energy to eight schools, which is enough power to meet approximately 46% of the school district's energy needs. The solar panels will be mounted on a combination of carport and shade structures—providing shade to cars while simultaneously generating solar energy. Shade structures, which look very similar to carports, are typically built in recreational areas for children, especially valuable in sunny places like Southern California.

"Power purchase agreements are a great option for school districts like Chaffey," says **Brendon Quinlivan**, director, distributed energy origination for Constellation. "By financing the construction and maintenance costs for solar, schools avoid the costly installation and purchasing of panels and realize an immediate benefit of powering their daily operations at a fixed cost that's often at or below their current electricity rate." Depending on who retains the solar renewable energy certificates (SRECs) for a project, schools can also reduce their carbon footprint.

The arrangement works by selling the solar power generated by Constellation's onsite arrays back to the school districts at a discounted rate. The school buys all the power produced by the solar arrays as long as the power purchase agreement is still active. And, as it often offers them substantial savings, it's an

attractive option for schools looking to inject more capital into student services, operations, or other critical projects.

Constellation worked directly with **PFMG Solar**, which specializes in meeting the energy needs of schools,

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**PAUL MIKOS, PRESIDENT, PFMG SOLAR**



## By The Numbers

### 6.76 MW

The size of the project

### 25 years

The length of the power purchase agreement

### 21,800

Number of photovoltaic panels located on parking canopies at eight sites

### 11k MW hours

The amount the project will generate per year

### 46%

The approximate amount of the electricity needs met by onsite solar panels

### 8,782 tons

The amount of carbon dioxide that will be diverted annually, which is the equivalent of 1,677 passenger vehicles according to U.S. Environmental Protection Agency data

### \$40 Million

The amount of money estimated to be saved on electricity over the next 25 years

to develop the solar project for Chaffey. "Some of these schools are paying up to \$7 million a year on electricity, so if you're cutting 25-30% back on their bills, that's amazing for education," says **Paul Mikos**, president of PFMG Solar.

Schools often fall victim to expensive energy costs because they consume power during peak hours (mid-afternoon), making their electricity bills on the whole higher than many other types of buildings and businesses. Having solar panels onsite means that instead of simply using energy during peak hours, and paying top dollar for it, schools are now involved in producing energy during the peak, which reduces the amount of power they need to purchase from the grid and helps them realize savings. "You can think of it like a piggy bank," says **Zeb Wallace**, senior business development manager at Constellation, "When the solar system produces more than the needs of the school, like in the summer when there's virtually no activity, energy credits are deposited into the bank, which can then be applied when school goes back into session."

The solar array also comes with educational benefits, encouraging a dialogue for young children on alternative energy, sustainability, and our closest star—the sun. "We've written some easier to comprehend programs for students, so they can make sense of how and why solar energy is working at their school, why a sunny day is better than a cloudy day, why a southern facing panel is more productive, etc.," Mikos explains. Supporting the idea that clean solar power is not only a good option for the environment, but a viable one for schools, or any entity looking to save money and invest in the environment, is a great achievement for Constellation, PFMG Solar, and education—and one which is expanding the landscape of renewable energy. "Frankly, the first reason schools buy solar now is because it's far less expensive," Mikos says. **gb&d**

## IN CONVERSATION with Christine Knapp

Continued from p. 22

Sustainability has often been considered a higher tier issue on Maslow's hierarchy of needs. But I think it actually needs to be integrated much more closely with those things that people care about in their daily life. So I think we have to challenge ourselves to partner up a little bit better and create some new non-traditional allies.

**gb&d:** Are low energy prices making it a challenge to motivate people to adopt energy efficiency practices?

**Knapp:** That is a challenge right now, but fortunately or unfortunately, depending on how you're looking at it, I don't think that low energy prices are here to stay. Folks who are familiar with the energy world pretty much know that this is a blip, and we're not exactly sure how long it will be around, but it's unlikely that it will be this low long-term. People who are making

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long-term decisions that might impact their energy consumption are smart to consider that energy prices will certainly go up. But for the current moment, it is difficult to get someone to want to invest in energy efficiency retrofits if they have to put up a lot of money up front and have to wait longer to get the full return on that investment, as opposed to if prices are high and they can see in just two years that they would be saving money.

**gb&d:** Does the city offer incentives for energy efficiency investments?

**Knapp:** We ran a program called EnergyWorks for a number of years for both residential and for commercial buildings. The residential program has ended, though there is still a small amount of funds for commercial properties that is done through a revolving loan program. So as the money that was loaned out comes back in, it can be loaned out again. But we are considering new strategies to help incentivize folks. At this point, commercial banks really do understand that energy efficiency is a good

This conversation continues on p. 113