



# GREEN SOLUTION

**Hawthorne Cat® derives multiple benefits from solar installation**

**F**rom the beginning of track technology to the introduction of diesel power, Caterpillar has been at the forefront with product innovations that meet the demands of a rapidly changing market.

As the Caterpillar dealer throughout San Diego, Hawaii, Guam, Saipan and American Samoa, Hawthorne Cat has served various industries since 1956, including: general and heavy construction, quarry and aggregate, landscaping, marine, paving, waste management, backup power and power generation.

Headquartered in Rancho Bernardo (San Diego), Hawthorne Cat has over 400 employees worldwide with locations in San Diego County, the Hawaiian Islands and throughout the Pacific Region.

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## CUSTOMER PROFILE

### **Hawthorne Cat**

**Location:** Rancho Bernardo, Calif.

**Application:** Solar Power

**Business Issue:** Energy savings

**Cat® Equipment:** Cat solar panels

The Rancho Bernardo headquarters comprises 30 acres and includes corporate offices and a main service shop. Hawthorne Cat's service shop has over 50,000 square feet of floor space with 42 fully loaded service bays. Hawthorne is one of only a few service facilities in Southern California with an engine dynamometer.

State-of-the-art facilities showcase metal lathes, a 30,000 ft/lbs torque wrench, line boring services, a stress relief machine, paint booths for large equipment, end mills, auto welders and the capability to re shape and re-skin moldboards, dozer blades and buckets. Additionally, Hawthorne Cat is one of a few Caterpillar dealers that can tear down and rebuild engines and components from a core.

**The rising cost of energy**

Operating a corporate headquarters and adjoining service facility requires a reliable source of energy. And California's commercial energy prices are the third highest in the nation.

The Center for Jobs and the Economy at the California Business Roundtable reports that California energy prices continued to rise higher in July than nearly all other states. The California average commercial price for the 12 months ended May 2020 was 17.18 cents/kWh, 70.8 percent higher than the U.S. average of 10.06 cents/kWh for all states other than California.

To address the rising cost of energy, Hawthorne Cat opted to develop and

install a 492 kW solar array on the roof of its Rancho Bernardo headquarters in the summer of 2020. The installation began on June 8 and the solar array was energized and producing power by Sept. 2.

The solar array features 1,348 Caterpillar branded solar panels, and each solar panel is 365 watts. The array includes a data acquisition system that monitors solar energy production.

The solar array was designed to produce and offset 100 percent of Hawthorne's annual usage of electricity currently provided by San Diego Gas & Electric (SDG&E).

Rather than bear the cost of owning and operating the solar array, Hawthorne Cat opted for a Power Purchase Agreement, in which a third-party investor owns the system and hires another firm to operate and maintain it.





A solar Power Purchase Agreement (PPA) is a financial agreement in which a developer arranges for the design, permitting, financing and installation of a solar energy system on a customer's property at no cost. The developer sells the power generated from the solar array back to the host customer at a fixed rate that is typically lower than the local utility's retail rate. This lower electricity price serves to offset the customer's purchase of electricity from the grid, while the investor receives the income from the sale of electricity as well as any tax credits and other incentives generated from the system.

"We crunched the numbers, and we ultimately determined that by the time our investors bought the system and installed it on our building, then we would buy the power back and save about 23.4 percent of what we would otherwise pay San Diego Gas & Electric going forward," said Russell Wittman, business development manager for Hawthorne Cat.

#### **\$50K annual savings**

The advantages of structuring the deal as a PPA are no capital expenditure to the business off-taker, a lower operating cost, and little to no financial risk, Wittman said.

Hawthorne's electrical bill on the headquarters building is expected to be reduced by more than \$50,000 over the next 12 months. This represents a

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**RUSSELL WITTMAN**, Business Development Manager, Hawthorne Cat

savings of nearly \$2 million over 25 years, Wittman says.

The PPA structure also helps insulate Hawthorne Cat from future rate increases. The California Public Utilities Commission has raised power rates between four and seven percent every year.

"The escalator clause in our Power Purchase Agreement is set at 2.5 percent," Wittman says. "So the longer we're in this, and assuming the utilities continue to increase rates at a rate of four to seven percent or higher, the more the PPA rewards Hawthorne in years to come."

Solar power is a clean form of energy, which means Hawthorne's installation will have a positive environmental impact. A preliminary analysis estimated that the solar array is expected to produce 788,816 kWh in the first year. The offset of energy that would otherwise come from the grid will reduce an estimated 560 metric tons of CO2 on an annual basis. That's equivalent to taking 120 cars off the road for one year.

The investors in the project are responsible for the maintenance of the solar array. A company that specializes in maintaining solar systems will be retained by the investors.

"They will have the responsibility of coming out twice a year to wash the solar panels to make sure they stay clean and efficient as possible," Wittman says. "If a solar panel breaks or if the wiring goes bad or a bird builds a nest on the panel and it's not as efficient, they can evaluate the system remotely and then send out a technician to see what the problem is."

The solar array not only saves money for the Cat dealer, it also serves as a demonstration project for potential customers, Wittman says.

"This is proof of concept to show that a business off-taker can use someone else's money to save on their energy bill and go green all at the same time."

*To explore a similar solution for your facility, contact Hawthorne Cat for a free cost savings analysis.*

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