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NEW SOLAR PROJECT
provides Stanley Black & Decker
with the tools for clean power



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Solar Power Score Card



Stanley Black & Decker tools up for sustainability

Stanley Black & Decker has a new 4.3 MW solar farm powering the company's manufacturing plant in Kentucky.

By Diane
Mettler

Just in time for this past Earth Day, Stanley Black & Decker put on their tool belt and put the finishing touches on their 4.3 megawatt (MW) solar farm located in Hopkinsville, Kentucky.

The project, built in partnership with Castillo Engineering and RPG Energy Group, covers almost 15 acres and is the state's largest privately funded on-site solar project. It produces enough clean energy to power Stanley Black & Decker's 280,000 square foot onsite production facility, while also providing excess power back to the state. The project is estimated to deliver 5,500 metric tons of CO2 reductions and annual energy savings of \$400,000.

"In my job, I'm looking for projects like this all the time," says Rob Kirts, Director of Global Energy and Utilities, Stanley Black & Decker. "So we're spec'ing projects, we're evaluating the sites, and Hopkinsville was just the perfect storm. We had about 30 acres of property there that was a cornfield last year that we leased out to a farmer.

"We do a lot of internal work figuring out how big of a system we can put in without being too big," Kirts adds. "We look at how much power the site uses, then how much power we can push back to the grid and still be

economical. "Hopkinsville was one of those unique sites where we had the property, we could put it all on the ground, we could offset the site 100 percent and push enough power back to the grid so that it supplies power to about 350 homes in Hopkinsville. So it's a big project." It will deliver 7.8 million KWh every year.

The site officially went online the last week of December and powers the plant that manufactures products that are part of Stanley Engineered Fastening Group's portfolio. Coincidentally, the plant makes the fasteners that hold the solar panels to the steel racking, bringing the project full circle

There are over 10,000 First Solar 445W thin film panels used in the project. The single point trackers which follow the sun all day use a thin film Cadmium Telluride (CadTel) photovoltaic (PV) technology. First Solar says it has been able to harness advantages that are unique to the thin film semiconductor. The panels, made in the U.S., boast a superior warranted annual degradation rate—maintaining 89 percent of the original performance after 30 years.

to page 8



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from page 7

Along with the First Solar panels, the company chose Solar FlexRack S-Series Single Axis Trackers manufactured out of Ohio. They can support up to 90 modules per row, have a rotational range of up to 110° (± 55°), and Smart backtracking reduces row shading to optimize energy production.

In addition, Stanley Black & Decker chose Sungrow 125kW (600V) string inverters, to feed into the transformers.

Befitting a high quality tool company, durability is a strong feature of the solar project.

"The panels are pretty robust," says Kirts. "They'll hold up to hail. Maybe a direct hit by a tornado might cause us an issue, but for the most part, they're low profile. They

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"In emergency weather, they would return to a flat position to minimize shear. Regular storms will help us by washing the panels off."

Kirts says that early on he and his team looked the site over, evaluated it, and then put together the economics. "I run a program called EcoSmart within Stanley Black & Decker. It's funded corporately and basically we use it to do carbon reduction projects, cost savings projects and more sustainable projects.

"I keep that program running. As soon as we got the economics to work, I took the Kentucky project to our steering committee, showed them the project, received approval, got some site leadership engaged, received their approval, and then started writing Purchase Orders," adds Kirts.

The solar farm went up incredibly fast once things got rolling—from start to finish it took only 90 days.

Even though it was the largest solar project the company has ever done, it was also one of the smoothest. "To be able to build it in 90 days was incredible," he says. "And we did a lot of work behind the scenes.

"We engaged the city, county, local utility Pennyrite Electric and then the regional utility TVA (Tennessee Valley Authority) to get permitting done with the city. And we did all that work ahead of time."

Kirts says the city and mayor of Hopkinsville were great to work with. "They had never done a project that size either, so we helped them write their solar regulations. It was a great partnership."

When construction got underway, local contractors were used when it was possible. "There's a lot of civil work that goes on in those projects too, because even though we weren't really changing the grade, we were changing how the rainwater is affected by hitting the panels and then dropping it in," explains Kirts. "We use local engineering firms and we use local contractors to help us build the systems if we have any in the area that specialize in solar. But for all the groundwork and electricians, we used local people. We like to ask for the plants' recommendations so we can use the vendors that the plants are already using."

to page 10

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from page 9

One of the most important partnerships was with RPG Energy Group, which actually constructed the solar project at Hopkinsville. “They’re basically a general contractor for us; they help drive all projects that EcoSmart funds.”

The landscaping requirements for this project were fairly minimal. The city required some landscaping around the outside of the fence. And upkeep should be fairly easy as well. “We have a finished grade underneath the solar panels, so we’re going to use our own autonomous lawn mowers in there to mow,” says Kirts. “They’ll mow all hours of the day and night, come back and get charged and just go back up there.”

“It’s great to work for a company that has that green initiative,” adds Kirts. “It’s very important to us to protect the planet. It’s one of our non-negotiables. That’s just what we do. It’s part of our DNA that we go after that—we want to make our sites as green as we can.”

“And that’s really my purpose with Stanley Black & Decker—to drive sustainability and get us greener,” says Kirts. “And it’s twofold for us. There’s huge cost savings that come with it. It makes the plants more efficient so we can keep our costs down, while we are being more sustainable.”

The Stanley Black & Decker solar project, built in partnership with Castillo Engineering and RPG Energy Group, covers almost 15 acres and is the state’s largest privately funded on-site solar project. The project is estimated to deliver 5,500 metric tons of CO2 reductions and annual energy savings of \$400,000.

Sustainability isn’t just a buzz word at Stanley Black & Decker, he explains. “When I get to a site, I basically do an energy audit and I train the teams to do energy treasure hunts on their own,” says Kirts. “It’s an ongoing process. We don’t just come in and do changes—we train the teams to keep up on sustainability, get everybody on board and on that same page.”

In addition, the company shares best energy practices. “I have access to all those buildings,” says Kirts. “So, if we find something that works in one building, we definitely will cut and paste and put it in another building. We also belong to several organizations that look at different ways to be sustainable. And really, in most of the meetings that I’m in, I think Stanley Black & Decker is a leader in waste heat recovery and that thermal reuse of power. And we’re pretty proud of that.”

Kirts says when it comes to sustainability, the company isn’t just about solar. “We do air compressors, chillers, waste heat to energy. We do waste heat recovery. We look at all technologies. We’re not only looking at Scope 2, which is your purchased

electricity, but also Scope 1, which is the natural gas purchase. We’re focused on reducing both Scope 1 and 2. That’s my responsibility for the job sites.”

Expect to see more sustainable projects in the company’s future. Hopkinsville is just the first of other significant renewable projects Stanley Black & Decker is considering.

“It’s extremely important for Stanley Black & Decker to drive these sustainable projects,” says Kirts. “It’s one of our non-negotiables within our company and ranks right up there with safety. We want to drive these sustainable projects and it’s important for us in the communities in which we operate to be a great community partner. So, if we can build these sustainability projects like the Hopkinsville project, it just helps out the community, as well. We want to be that premier employer, everywhere we’re at.”

And with Stanley Black & Decker’s tools and their experience, there’s no doubt they will keep building a sustainable future. e