

# DISTRIBUTED ENERGY

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## Reaching Breakeven with Little Delay – Written by Don Talend

When planning a major marketing tactic, it always helps to calculate just how much the new endeavor will impact the organization's bottom line—and how quickly. Such was the case when Ampro Sports Inc., Primos, PA, recently upgraded the lighting at an athletic field house it had built in order to grow awareness of its brand and forge stronger bonds with customers. The upgrade to a new energy-efficient lighting system was expected to deliver a nearly immediate return on investment. Ampro's experience is a good example of the impact that increasing lighting efficiency can have on an organization's finances.

For 35 years, the company has provided sportswear to athletic teams as well as T-shirts and promotional items for organizations. According to Gary Huddell, the company's president, the market for team uniforms changed during the 1990s, when offshore manufacturers began to dominate the market for large-volume orders. As a result, Ampro still met demand for relatively small order volumes, but no longer fully utilized its 100,000-square-foot production facility, half of which is used for production and about one-quarter of which is devoted to a warehouse addition.

"We found that, although the warehouse had plenty of product in it, we really weren't utilizing it to the extent that we should have," says Huddell. Back in 1996, Huddell had an idea that would both address the utilization problem and give the company a marketing boost: use some of the facility floor space for a sports facility. The idea came from one of the company's regional sales representatives, Huddell recalls.

He adds that the existing facility lent itself to an athletic field. "The way we configured the facility, it had poles, but each section was about 12,500 square feet," he says. "We knew we could open up space as a playing field." Such a move was expected to strengthen bonds with customers and grow awareness of the Ampro brand.

"For us, it was just a natural," says Huddell. "We're actively involved with local teams, and this gives those teams the option, when it's snowing outside, to call Ampro and ask for the facility for two hours." The Philadelphia Area Disk Alliance—an organization consisting of leagues in sports such as disc golf and ultimate Frisbee—is another major user of the facility.

In sales and marketing, perception is reality. So Huddell paid particular attention to ensuring that the playing surface and lighting provided the athletic teams using the facility with a positive experience. The first order of business was settling on a quality playing surface.

"If we were going to try and build the space, obviously the space was an issue, the netting was an issue, padding was an issue, but the floor was the biggest issue," he says. "The lighting was probably secondary to the quality of the turf." A cushioned nylon monofilament fiber turf product designed for both fast play and durability, called Puregrass, was installed on the field.

Next came a decision on lighting. The facility was equipped with what was considered state-of-the-art lighting back then: 400-W metal halide fixtures. Huddell notes that both adequate illumination and energy efficiency were priorities, so he researched stadium lighting. He told his sales representative that he wanted daylight-like illumination 4 or 5 feet from the ground. This request resulted from a concern about lacrosse matches, which are characterized by a heavy ball hurtling through the air at high speeds—and roughly head height.

"One of the things that some indoor practice fields are notorious for is poor lighting or poor turf," points out Huddell. "In our minds, we wanted to make sure we didn't come out of the gate with poor lighting and/or poor turf. We were afraid to make an investment in a light that was fairly expensive as far as face value cost per fixture, unless we knew for a fact that it was going to work."

In terms of energy efficiency, the fixtures were some of the best available at the time, Huddell notes. The field illumination they provided was adequate; however, they created a slight humming noise, and the bulbs and ballasts

needed to be replaced a little too often for Huddell's liking. Huddell points out that the company's third largest expense is lighting.

In mid-2009, the decision was made to upgrade both the quality and energy efficiency of the facility's lighting. According to Huddell, another major aspect of the decision was fixture durability. LEDs and T5s were considered but, ultimately, not selected. A relatively large number of LEDs would be necessary to illuminate the field, Huddell recalls. The T5s would have to be replaced about once every two years, he adds. "The T5s were, in my mind, a difficult solution, because we netted the area under the lights, and we didn't want to have to cut through the netting and replace the bulbs—that's incredibly time-consuming and expensive."

### Full-spectrum Lighting Chosen

Eventually, the 250-W EverLast Induction Lighting EHB-GC-250-W from Full Spectrum Solutions Inc. was chosen. "One of the things the EverLast light does is provide full-spectrum lighting," says Huddell. "It's diffused—it's not a beam of light, but overall light that really fills the space—it blends it all together."

In addition to providing the desired light quality, the new fixtures promised to be much more cost-effective to operate than the existing metal halides.

"When we looked at what the lighting would do, and the tax advantages of installing and investing in the lighting, there were multiple factors to the decision," says Huddell. "One is that these lights last for about 100,000 hours, so they are not going to burn out, and I don't have to get up into the netting to get to them."

Suncoast Solar Power/USA Energy Management LLC was hired as the lighting provider. The company is known for an energy efficient lighting retrofit at the Yuengling Brewery in Pottsville, PA—as discussed at [www.distributedenergy.com/september-october-2009/efficiency-innovation-retrofits.aspx](http://www.distributedenergy.com/september-october-2009/efficiency-innovation-retrofits.aspx)—and its partners, Nicholas Ferraioli and David Cooper, have formed a new venture, the USA Green Energy Mall, [www.usagreenenergymall.com](http://www.usagreenenergymall.com), a "virtual storefront" for building owners interested in equipping facilities with green lighting. Thirty fixtures were specified for the field house, and 15 more were specified for additional warehouse space to be utilized in future capacity expansion. Also replaced were three 250-W exterior lights, with three 100-W induction floodlights, and three 250-W wall packs, with three 100-W induction wall packs. According to a 10-year energy and maintenance savings projection by Ferraioli, the new lighting system will reduce the power density level per square foot from 1.33 W to 0.55 W, and save Ampro a total of more than \$292,500. The expected annual energy cost for the new system over that period is about \$5,127, compared with about \$27,232 for the existing system—yielding a savings of about \$22,105. Over 10 years, the projected energy savings is about \$221,047. Significantly, the new lighting will allow the facility to qualify for a federal Efficient Commercial Buildings Tax Deduction of 60 cents per square foot, which was established by H.R. 6, the Energy Policy Act of 2005, and added to United States Code Title 26, Internal Revenue Code Sec. 179D, for a total of \$14,580. This credit is anticipated to increase the total financial valuation of the lighting retrofit to \$307,157.

"Now we know that we're saving a lot of energy," says Huddell. "We know that the lights are going to last 100,000 hours, and we're excited about that, too."

Regarding the warehouse lighting, "We got the light level quality to where we wanted it to be—we added full-spectrum lighting, which is supposed to be much healthier for people when they're indoors all winter long. I can't say that my warehouse guys will be running around a lot more happily, but when you click those lights on, number one, they don't hum like the other lights. They come on instantly, and they heat up in a minute or two. With the metal halides, you'd see nothing for a couple of minutes."

Huddell fully understands that, adjusting for inflation, the initial cost of the new system was probably higher than that of the existing system. However, using Ferraioli's cost-of-ownership estimate of about \$70,425 for the entire system over 10 years, a payback period of about one calendar quarter, is a reasonable expectation.

"The lighting doesn't represent the bulk of what we use in terms of energy, but I knew that the investment that I was making in the lighting was offset by the savings," says Huddell. "The huge thing is the maintenance issue. You can't undervalue that sort of a savings. You've got a high-reach truck and it takes two people to get up and down and work on the lights. We've sealed those lights with a net, and we don't expect to have to work on them for 10 years."

"There were so many compelling arguments for me to make this choice," continues Huddell. "Eliminating the hum, the durability—there were so many compelling factors, that it wasn't a difficult decision."