

*Reprint from the February 2010 Issue*

## Utility Saves With Green Shop Lighting

Eneref Institute examines a new energy efficient fluorescent lighting technology at the Baltimore Gas & Electric's truck repair shop in Baltimore, MD that utilizes highly reflective material to lower energy use.

At one time, Baltimore Gas & Electric's truck repair shop didn't need to concern itself with the energy lost from inefficient lighting systems. After all, BG&E made electricity. But today, they have to purchase power for their customers as well as for their own facilities. And more importantly, they want to set an energy-efficient example for their neighbours and customers, says Brian Smith, property manager.

Smith was frustrated with the low light level and high energy consumption of their old lighting system of high pressure sodium and T12 lamps. Not only were the old lights an energy drain, but as the fixtures aged, the light output depreciated.

Baltimore Gas & Electric sought out Westinghouse Lighting Solutions, whose fixtures employ a new kind of sophisticated optics using Miro Aluminum. Miro, by Alanod, lowers energy use while increasing the amount of light the fixture puts out. Miro aluminum is an extremely reflective material positioned inside fixtures that works by directing nearly all the light to where it's needed, allowing for fewer fixtures or for lower-wattage bulbs. In

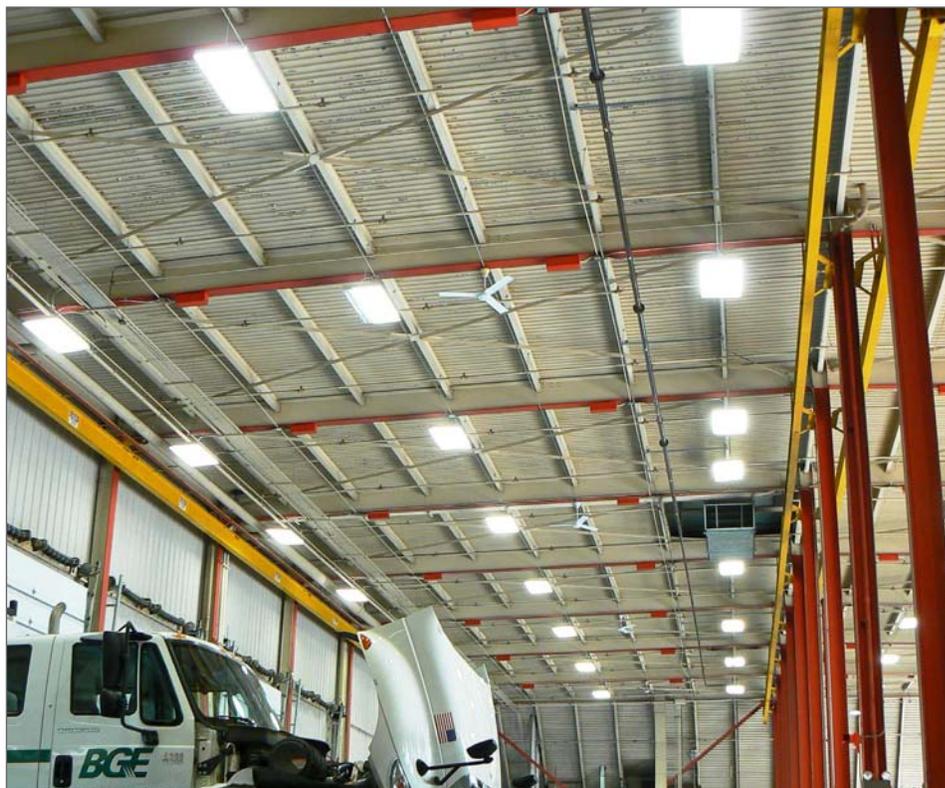
the BG&E facilities, it was both.

Baltimore Gas & Electric installed

just 18 months. At the same time, the amount of light increased everywhere light was needed. And in a shop where repairs are made on everything from trucks to transformers, a higher quality of light eases workloads.

"We got a 15 percent increase in light level even on the floor," Smith says.

Most significant was how the quality of light improved. Under the hood of a truck are various colored wires that feed sensors and electrical components. With the old high-pressure sodium lighting, it was difficult to distinguish different wire colors; orange and brown, for example, looked the same.



The Miro reflector lighting system offers more light and better color rendering at Baltimore Gas & Electric's truck repair shop.

1,500 light fixtures that were so energy efficient the project paid for itself in

One of the key benefits of the Miro technology is that it reflects colors more ac-

curately and evenly. The new lighting offered a much higher color rendition so mechanics can easily differentiate

---

**Baltimore Gas & Electric installed 1,500 light fixtures at its maintenance facilities that were so energy efficient, the project paid for itself in just 18 months.**

---

the color of the wires. The new fixtures are much closer to daylight.

“The bulk of the mechanics loved it because they didn’t have to have extra

lighting draping over the fenders of the trucks to work on them,” Smith says. “It was a remarkable difference.”

While Miro will reflect as much as 98 percent of the light, it’s the specularly of the material – its ability to direct the light where lighting designers point light – that gave Westinghouse the ability to maximize energy savings without sacrificing light levels. Typically, commercial fixtures diffuse light, wasting energy by lighting areas such as ceilings. With Miro, you have more of the light bouncing down than you would in a standard fixture.

In the largest truck repair facility, BG&E replaced 252 metal halide fixtures with seven different, customized Westinghouse T5HO fluorescent fixtures. The annual energy savings was over 60 percent. And with an increase in the life of the bulbs, maintenance was also reduced.

Was it worth the time and money to improve the lighting? According to Smith, “It was a no-brainer.” ●



This article is an excerpt of the future Enerref report which assesses the impediments to building zero-energy urban communities in the US. A companion film documentary, The Enerref Project, will seek to demonstrate to key decision-makers how zero-energy communities can be commercially viable.