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Sustainability Best Practices: *A Case Study Series*

Overview

Hubbell Lighting, Inc., headquartered in Greenville, South Carolina, provides a full range of outdoor and indoor lighting products and is an industry leader in corporate sustainability. Hubbell's sustainable practices include carbon neutrality, energy-efficient production methods and products, recycling, and staff certification in energy efficiency and sustainability practices.

Two years ago, one of Hubbell's brands, Architectural Area Lighting (AAL), began an effort to become carbon-neutral.

CARBON NEUTRALITY:

Achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered or offset. Also known as having a net zero carbon footprint

To achieve carbon neutrality, AAL had to eliminate its carbon footprint, either directly by reducing all carbon emissions to zero or indirectly by using carbon offsets. To understand its carbon footprint, AAL had to measure how much carbon it produced.

Hubbell and Architectural Area Lighting (AAL) Lighting the Way

Case Analysis: Corporate Sustainability Vision and Benefits

What business benefits did Hubbell and its subsidiary, Architectural Area Lighting (AAL), gain from corporate sustainability business practices? What are the benefits of carbon neutrality? This case study will examine the process AAL used to become carbon neutral.

Hubbell and AAL committed to implementing sustainable business policy and practices because doing so is good for the environment, and it also increases sales. Sustainability is important to their customers, which includes many architects. In addition, green issues and sustainability are an important trend in the overall building industry. The executive leadership at Hubbell and AAL felt it was the company's responsibility to take the necessary measures to eliminate its carbon footprint to continue meeting the needs of architects specifying lighting products. As architects and builders strive for LEED certified projects, AAL wanted customers to know they had a lighting partner dedicated to providing effective carbon neutral products.¹

"When we originally started down the carbon neutral path, there was no defined benefit for us or for our customers. It was a 14-month process to become carbon neutral," said George Preston, VP & General Manager of AAL.

"During that period, the U.S. Green Building Council announced they would offer a LEED credit point to building projects using carbon-neutral manufactured products to encourage their use. As a result, when we launched the program, our architect customers had a direct benefit to using our products. This earned our customers an extra point towards LEED certification of their building projects."²

Did you know?

As AAL moved forward with carbon reduction plans, the U.S. Green Building Council (USGBC) announced in 2007 a new LEED credit category rewarding the company's efforts.

The Process

AAL achieved carbon neutrality primarily through reduction of carbon emissions.

AAL evaluated carbon emissions using the [Greenhouse Gas \(GHG\) Protocol](#), established by [The World Resources Institute](#) and sanctioned by [The World Business Council for Sustainable Development](#). The GHG Protocol is quickly becoming the North American standard for determining carbon emissions and is the basis for GHG reporting by [The Climate Registry](#).

Preston described the 14-month process, “At every step of the way, we identified the things we do that create a carbon footprint. We tried to change everything we could to mitigate that carbon footprint. At the end of the process, when we realized we still had a residual carbon footprint, we decided to offset.”³

CARBON OFFSETS:

Financial agreements allowing another organization to reduce a company’s emissions by increasing energy efficiency elsewhere or producing power from renewable energy sources

Verification standards for offsets are becoming more prevalent to ensure they are real, additional, measurable, permanent, and independently verified.

For example, through the [Voluntary Carbon Standard](#), Hubbell offers carbon offsets to their customers for the use of its lighting fixtures. They do this through a partnership with [TerraPass](#), a well-known source for providing carbon offsets.⁴

For More Information

For more information on the GHG Protocol and GHG reporting, please refer to the side bar and NAED’s Sustainability Accounting Tools.

Did you know?

There are five basic determinants of carbon emissions defined under the GHG Protocol:

- Emissions from fuel use in facilities
- Indirect emissions from purchased electricity
- Emissions from employee commuting
- Emissions from business travel
- Emissions from transportation

After determining emissions in each of GHG Protocol areas, AAL found its total carbon emissions were 11,008 tons.⁶



Reducing Direct Emissions

AAL reduced its direct carbon emissions, the largest source of which came from the company's paint-curing gas-fired oven. The paints are used to coat their outdoor lighting products. Previously AAL switched from liquid paints containing Volatile Organic Compounds (VOCs) to a polyester powder coat, which is a dry paint process. Two major process changes took place: changing to low-cure type paint and adding an infrared quartz preheating section to the oven.

Preston explains, "By changing our paint to a low-cure type, we reduced the peak temperature of the oven, lowering our carbon footprint. The infrared quartz preheat section on the oven preheats the parts before they get into the oven so we don't have to run the oven quite as hot."⁵

Did you know?

The [Greenhouse Gas Protocol](#) is the most widely used international accounting tool for understanding, measuring, and managing greenhouse gas emissions. The protocol covers the accounting and reporting of the six greenhouse gases covered by the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆).

Reducing Indirect Emissions

To reduce indirect emissions, AAL looked at the power mix used by the local electric utility, Southern California Edison. Preston said, "The carbon footprint of all the electricity used in our plant becomes our responsibility. When we went about tackling that, the solution was reduce your electricity use. For example, we were already using efficient sources in the offices (T8 lamps), but we added occupancy sensors to further augment our efforts."⁷

In addition, AAL is also moving from metal halide high-bay lighting to fluorescent high-bays for lighting in their factory.

Q & A

CARBON OFFSETS— LEGITIMATE OR THE ENVIRONMENTAL EQUIVALENT TO A PAPAL INDULGENCE?

Some people disagree with the principle of carbon offsets, likening them to papal indulgences sold in the middle ages, a way for the guilty to pay for absolution rather than changing their behavior. Opponents say carbon offsets are an excuse for business as usual with regards to pollution.

Proponents argue the indulgence analogy is flawed because carbon offsets actually reduce carbon emissions, changing the business as usual status quo and therefore addressing the root cause of climate change. Proponents claim third-party certified carbon offsets are leading to increased investment in renewable energy, energy efficiency, reforestation, etc., and claim these alleged effects are the intended goal of carbon offsets.

Employee Commuting, Business Travel, and Inbound/Outbound Freight

The remaining three components of AAL's carbon footprint were employee commuting, business travel, and inbound and outbound freight. The company reduced carbon emissions from commuting and travel, but Preston said, "Inbound and outbound freight is pretty much out of our control. That's by far bigger than the other four components put together. Our offsets are almost entirely for the inbound and outbound freight."⁸

Energy Efficiency

Hubbell continues to examine the amount of energy used for lighting, air compressors, furnaces, and paint processes in its facilities. The company estimates it will save \$1,187,525 annually from energy efficiency upgrades in these areas. It also used the low-temperature paint process in other facilities. For lighting upgrades, it plans to use a combination of skylights, lighting controls, and daylight harvesting.⁹

In addition, Hubbell is reducing the amount of energy used for commuting with flexible and compressed work-week schedules and is developing a telecommuting policy.¹⁰ In the warehouse and production facilities, the company is converting forklifts from gas to electric power and investigating the use of solar power to charge the forklift batteries.¹¹

Recycling

Mark Lien, the Director of Hubbell's Lighting Solutions Center, explains its recycling efforts, "We have recycling programs at all of our plants. Many metals are recycled internally or reused for the production process. Fluorescent lamp recycling is mandated in all 72 of our production facilities. Those lamps are sent to Clean Lights Recycling. We also recycle batteries and print cartridges."¹²

Staff Energy and Professional Development

Lien also emphasized the importance of staff certification, "We are committed to having accredited staff members. Our commitment is from the top down, and we take a great deal of pride in this. We have four LEED Accredited Professionals. One of our staff members earned the High-Performance Building Design Professional accreditation from the American Society of Heating, Refrigeration and Air-Conditioning

Engineers (ASHRAE). This requires an advanced understanding of how to maximize energy efficiency in several building systems. Many of our employees have earned various lighting certifications. Two staff members have attained Certified Lighting Efficiency Professional (CLEP) certification and another is a Certified Lighting Management Consultant (CLMC). We also have several Lighting Certified (LC) staff members."¹³

Industry Recognition

Hubbell received recognition from the Illumination Engineering Society (IES) for "Advancing the Art & Science in Lighting" in the Lighting Design and Application progress report.¹⁴ The recognition was for Hubbell's LEED Silver headquarters, carbon neutral manufacturing through AAL, low temperature paint process, [lighting solutions center](#), and 12 new products that have an energy efficiency focus (mostly LEDs).¹⁵

Did you know?

Hubbell's headquarters is the first lighting manufacturer to achieve Silver Leadership in Energy and Environmental Design (LEED) certification.

Carbon Emissions Reporting: the first two are required by most reporting programs, while the third is often optional.

- >> **Scope 1 - Emissions from company-owned or controlled equipment (e.g. power generation, boilers, furnaces, vehicles; emissions from physical or chemical processing.)**
- >> **Scope 2 - Emissions from the generation of purchased electricity (emissions from both transmission and distribution), natural gas, and fuel in company operations.**
- >> **Scope 3 - Indirect emissions, excluding those already included in Scope 2 (e.g. employee commuting, business travel, and inbound and outbound freight). The variability of considerations in this scope is the reason it is optional.**

Endnotes

- ¹ <http://www.reuters.com/article/pressRelease/idUS151451+22-Jul-2008+BW20080722> accessed 2/20/2009
- ² Preston, op. cit.
- ³ Preston, op. cit.
- ⁴ Mark Lien, personal interview on January 15, 2009.
- ⁵ George Preston, personal interview on February 4, 2009.
- ⁶ <http://www.reuters.com/article/pressRelease/idUS151451+22-Jul-2008+BW20080722> accessed 2/20/2009.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ "Hubbell Lighting Green Initiatives", Hubbell Lighting, Inc.
- ¹⁰ Ibid.
- ¹¹ Preston, op. cit.
- ¹² Lien, op. cit.
- ¹³ Ibid.
- ¹⁴ Lighting Design & Application Progress Report Issue, Illuminating Engineering Society of North America, January 2008.
- ¹⁵ Lien, op. cit.

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