

Reducing mercury in lamps saves money

Monday, June 07, 2010

Sustainability Desk

By Ann Erhardt
LEED Administrator, Eco Metrics LLC



Many organizations in West Michigan are affected by the increased cost of utilities and resources. They are also dealing with reduced operating budgets for their grounds and facilities. The current LEED for Existing Buildings: Operations and Maintenance Version 2.2 (EBOM v2.2) standard proposes that by reducing or eliminating the mercury content of the lamps purchased for your facility, you will not only have a positive impact on the environment — you will also see a reduction in bottom-line operating costs.

The LEED Materials & Resources Credit 4 makes three valid points for your business case to replace conventional lamps with low-mercury lamps:

- 1) Low-mercury can be comparable or slightly higher in cost than conventional lamps, but they may also have a longer life and a higher lumen output than conventional.
- 2) Mercury-free lamps, such as light-emitting diodes (LEDs), can have a much higher lumen output and use significantly less energy. The cost per lamp may be higher, sometimes up to 10 times higher than lamps containing mercury, but overall there will be a positive impact on your bottom line with reduced utility bills.
- 3) The return on investment of purchasing LEDs or other low-mercury lamps can be justified, as they often outperform conventional, incandescent and even compact fluorescent lamps (CFLs). For example, LEDs have a 10- to 15-year life span, which will keep re-fixturing costs down over their lifetime. Due to the lamp's minimal heat output, energy costs to air-condition the area also will be reduced.

Most businesses today are substantially over-lit. New design standards emphasize lower lighting levels that enable people to move throughout a building safely while providing task lighting at each work surface appropriate to the individual task. Using natural light from nearby windows also offers an efficient and acceptable lighting reduction alternative. These strategies can deliver significant reductions in energy use and cost savings.

An added benefit to the elimination of mercury from lamp purchases is the reduction of waste handling and recycling fees. Conventional lamps — including fluorescent, CFL, high-pressure sodium (HPS), mercury-arc, metal halide (HID), ultraviolet, and some neon — contain anywhere from 9mg to 100mg of mercury. These lamps may or may not be accepted by your local waste hauler and landfill. Even if accepted, you may be paying a fee for handling and recycling.

Additionally, there can be significant operating expense for storing and handling mercury lamps in your facility, and if a lamp happens to break, the EPA has specific hazardous material guidelines for proper cleaning and disposal.

The fact that low-mercury lamps, i.e. those with 3.5mg of mercury or less, fall below the EPA limit does not mean that they should be landfilled. They still require special handling and may carry recycling costs. The EPA estimates that of 670 million mercury lamps sold in the U.S. each year, approximately 76 percent are improperly discarded at the end of their useful life. Although the amount from one lamp is small, collectively, large numbers of fluorescent lamps contribute to the amount of mercury released into the environment.

Other factors to bear in mind when developing a purchasing strategy for lighting should include the looming government ban on non-energy-efficient lamps and the mandatory ruling that commercial buildings must recycle mercury lamps. Early adoption can save your organization money if sensible changes occur sooner rather than later.

Whether or not you plan to LEED-certify your building, there are definite advantages to reducing or eliminating mercury-based lighting from your sustainable purchasing plan. Besides the obvious environmental benefits, there are several equally important economic advantages including reduced energy consumption, reduced number of lamps purchased, and reduced time and money spent on recycling processes, handling and fees. At the end of the day, collectively they will have a positive impact on any company's bottom line.

The U.S. Green Building Council is a coalition of leaders from across the building industry working to promote environmentally responsible, profitable and healthy places to live and work. The West Michigan Chapter provides and develops leadership through affiliations and education at all levels. Please send comments and column proposals to chuck.otto1@gmail.com.