Life-cycle cost (LCC) analysis is a powerful method of evaluating the total costs over the lifetime of equipment or systems. A basic LCC analysis will reflect purchase, installation, operation, maintenance and disposal costs. Looking beyond the initial purchase price will help you understand where your organization spends its money.

For example, did you know that the electricity used to power a motor represents approximately 95% of its total lifetime cost, including its purchase price? In many organizations, however, typically only the "initial costs"—*such as purchase price and installation*—are considered when investing in new equipment.

Why aren't life-cycle costs calculated more often? For one thing, these analyses require collection of additional financial data beyond initial cost. While the thought of gathering this information may seem daunting, you may need less than you think to get started.

For assessing basic equipment like motors and drives, begin with the following simple formula to get a ballpark estimate of lifetime cost. You'll need to know initial purchase and installation costs (I); expected life of the system in years (L); yearly cost of operation and maintenance (O&M)—*be sure to include energy costs*; expected yearly repair costs (R); and disposal costs (D) or salvage value (S). Make use of accepted industry estimates, spec sheets and your own facility's cost data for similar equipment:

Simple LCC = I + L(O&M + R) + D - S

What can be learned from this basic analysis? In the case of motors, O&M energy costs are often significant—*so much so that they can overshadow initial purchase and installation costs*. Now imagine considering the operation and maintenance costs across your entire system.

Studies show that making investments to minimize energy consumption and minimize unscheduled downtime are some of the most effective ways to improve profitability [1]. Thus, you can see how important it is to conduct an LCC analysis before investing in new equipment or making major changes to processes.

Where can you get further help? A number of excellent resources provide LCC tools and training. For example, the U.S. Department of Energy's Industrial Technologies Program has a wealth of assessment tools for fan, pump, steam, process heating and motor systems to help industry save energy and money and increase productivity. ASTM International documents standard industry procedures for analyzing life-cycle costs. The Motor Decisions Matter SM Campaign has developed a suite of calculation tools and brochures to help you and your team make quick back-of-the-envelope LCC estimates.

Take advantage of these resources. LCC analyses will help you understand the real purchase price of your equipment and keep your operation focused on the bottom line. **LMT**

Reference:

1. "Pump Lifecycle Costs: A guide to LCC analysis for pumping systems", DOE ITP program, www1.eere.energy.gov/industry/bestpractices/pdfs/pumplcc_1001.pdf

For more info, enter 01 at www.LMTFreeinfo.com

The Motor Decisions Matter (MDM) campaign is managed by the Consortium for Energy Efficiency (CEE), a North American nonprofit organization that promotes energy-saving products, equipment and technologies. For further information, contact MDM staff at mdminfo@cee1.org or (617) 589-3949.