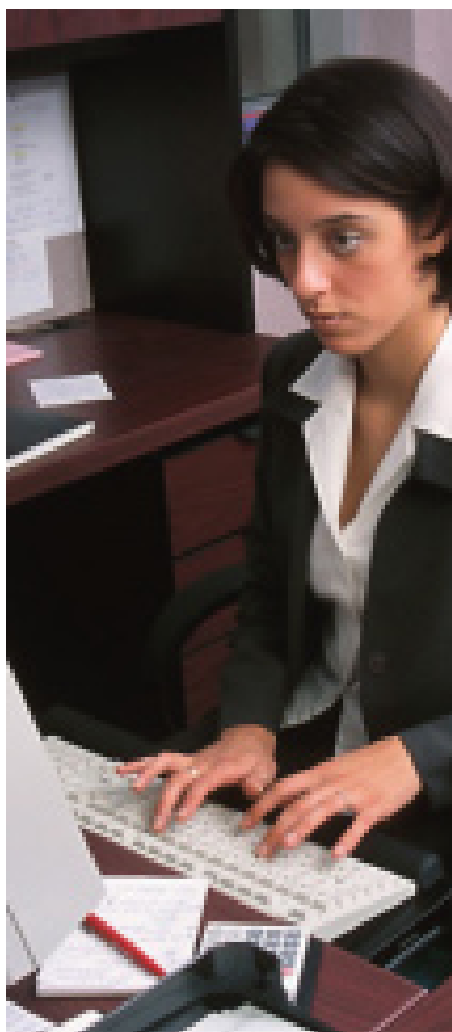


RCM Factsheet

August 2006

Assessing Energy Savings of New Products

By Rob Penney, Energy Engineer, WSU Energy Program



Resource conservation managers (RCMs) often influence which products and technologies are purchased and installed in a facility. As a result, they find themselves in the position of having to assess the validity of energy-saving claims of manufacturers and product vendors. They also need to understand other ramifications of their choices such as the persistence of savings, impacts on maintenance, training needed for proper operation, impact on power quality, acceptance by building occupants, and many other factors important for long-term success.

Due to the increasing complexity of products, the task of evaluating energy efficiency claims is becoming more challenging. The challenge may be compounded by a lack of reliable, comprehensive information about the efficacy of new products and technologies.

Some General Guidelines

The amount of time and effort spent assessing the claims should generally be proportional to the cost, potential savings and potential risk of the product under consideration. It is particularly worthwhile to carefully research costly equipment, as well as products with considerable application potential.

One general rule is to trust your instincts – if it sounds too good to be true, it often is. Sometimes insisting on time alone to consider the literature and perform some research, or having a co-worker look over the facts, can help you avoid being influenced by salesmanship and high-pressure tactics.

If the manufacturer's literature and website include concepts too advanced for typical engineers to understand, don't be daunted – just maintain a healthy skepticism and seek professional advice. RCMs in the Pacific Northwest can contact the *EnergyIdeas* Clearinghouse at (800) 872-3568 for help, or visit their website at www.EnergyIdeas.org. Clearinghouse engineers and building science professionals can help evaluate a new product or technology from a technical perspective, while Clearinghouse research librarians can perform a comprehensive literature search for case studies and articles related to the product.

Before full-scale adoption of a new product or technology, you may want to start with a pilot project. That way, performance can be assessed with a limited number of customers, and in applications where risk is minimal. The down side of adopting this approach is that it will increase the overall cost and timeframe of the project. But if a literature search fails to identify any relevant case studies, and the potential risk is considerable, this may be worth doing. One task in implementing a pilot project is to decide how to measure and evaluate the success of the product or technology. RCMs can contact the EnergyIdeas Clearinghouse for assistance in approaching this task.

Questions to Ask

Here are some good questions to ask a vendor when assessing product claims:

Are the energy savings claims valid?

- Are independent testing results available? If so, what assumptions were made in the savings calculations? Lab tests conducted on one model at one set of conditions for a short period of time may not be indicative of real-world performance.
- Are credible case studies available that show significant savings? Is there someone you can visit or call to discuss their experience? How similar is the application to yours? The fact that cooling energy was reduced in a metal build-

ing in Tucson may not be relevant for a wooden structure in Olympia!

- Is there any guarantee of energy savings? Are guarantee terms reasonable (some require years of pre- and post-installation monitoring)? Be leery of a “guarantee” in which the remedy is to come and take the equipment out.
- How well will the product maintain its energy-efficient performance over time? For example, reflective paints can quickly lose their effectiveness if installed where they collect dust and dirt.

Is the product a wise investment?

- Has the technology been tried before? If so, why was it not adopted more widely?
- What do the company’s competitors have to say about the product?
- Will the product require special staff training for operation and maintenance? As an example, air-side economizers can be very effective in cutting cooling energy costs, but an alarming percentage are not installed and maintained properly, so have little or no positive impact.
- What are the non-energy benefits and liabilities (e.g., health/safety, maintenance and operation, staff productivity, inventory, power

quality)? For example, some products that are energy-efficient may also have the benefit of being smaller or quieter, or require less maintenance. A product’s other benefits (or liabilities) may far outweigh the energy savings.

- Are there local manufacturer’s representatives who can provide prompt application support and replacement parts, or replace failed products?
- Is the device going to save enough energy to make it worth the time and effort of evaluating and implementing it?
- What is the risk if the product fails: reduced savings, or an unusable space?

RCMs should approach new products and technologies with a cautious – but open-minded and hopeful – attitude. Over the past few decades there have been some wonderful advances in energy efficiency, and each year a promising new batch of products and technologies hits the news. It’s important to have a good general plan for evaluating them, either independently or with assistance.

More information

For more information, see the WSU Resource Conservation Management web page at www.energy.wsu.edu/projects/rem/rcm.cfm.

Or contact:

Karen Messmer

(360) 956-2090

E-mail: messmerk@energy.wsu.edu

Washington State University
Extension Energy Program
P.O. Box 43165
Olympia, WA 98504-3165



© 2006 Washington State University Extension Energy Program. This factsheet contains material written and produced for public distribution. You may reprint this written material, provided you do not use it to endorse a commercial product. Please reference by title and credit Washington State University Extension Energy Program.

Published August 2006.
WSUEEP-06-019



This publication was prepared with funding from the U.S. Department of Energy's State Energy Program. The funds are administered by the Washington State Department of Community Trade and Economic Development, Energy Policy Division.