

Specifying Energy-Efficient Products

A Guidebook for Third Party Architects/Engineers Who Work with State and Local Government Property/Facility Management Organizations

Prepared for the Consortium for Energy Efficiency

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Paul P. Hlavac & Associates

Note: This guidebook is intended for third party architectural and engineering firms. Typically, these third parties are hired by state, county or local government property or facility management professionals who are responsible for numerous capital projects of varying sizes. Early in each project, the third party architectural or engineering firm prepares a preliminary design and develops an overall project budget. This budget includes the cost of many different types of energy-using products, although their actual dollar amounts are often buried in larger figures. At a later stage, a third party firm will usually prepare more detailed plans and budgets that also include these products' costs.

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This guidebook is for third party architects and engineers who work with property and facility management professionals in state and local governmental bodies. It is designed to help these third parties learn more about the many important reasons to specify energy-efficient products for new or renovated facilities. It discusses:

- The many advantages of specifying energy efficient products
- A way to begin specifying these products
- How to be an “energy efficiency champion”
- Where to go for more information and assistance.

Why Specify Energy-Efficient Products?

State and local government facility and property management organizations often hire third party architectural and engineering firms to do the design work on new or renovated facilities. Many of the products used in these facilities – items such as lighting products, HVAC equipment, water heaters, motors, and so forth – are costly to operate. A major reason is that they use a great deal of energy (electricity, gas, or oil). Your state and local government clients can save a lot of expense with a properly structured program for specifying energy-efficient products.

Sometimes your clients may specifically require energy-efficient products, but often they may not provide any guidance. In either case, you can take the lead by specifying energy-efficient products wherever appropriate.

As their name suggests, energy-efficient products use less energy than their inefficient counterparts. How much less? ENERGY STAR®, a collaboration of the U.S. Department of Energy, the Environmental Protection Agency, and private companies, was created to help organizations specify energy-efficient products. Specific brands and models of products with an ENERGY STAR label exceed minimum federal standards. For example, ENERGY STAR labeled furnaces exceed them by 15%. Products without federal standards must meet specified high levels of efficiency to be ENERGY STAR compliant.

Energy Star labeled air conditioning systems exceed federal standards by 20%.

In fact, there are actually three important benefits that result when you specify energy-efficient products for your clients’ new construction and renovation projects:

Cost Savings

- **Utility bills are drastically reduced.** Energy-efficient products use less energy, so your clients’ utility bills decrease. For example, the City of Phoenix, Arizona used energy-

Toledo, Ohio upgraded to energy-efficient lighting and HVAC systems in 30 buildings, reducing annual utility bills by \$440,000.

efficient designs and products in its new \$84 million, 600,000

square foot City Hall. To date, the City has saved a total of \$22.8 million because of this and other energy efficiency projects. The University of California at San Francisco now saves over \$2 million annually on utility bills just because it installed energy-efficient lighting.

- **Maintenance costs are lower.** Many energy-efficient products last far longer than the typical product of their type. This results in lower maintenance costs because energy-efficient products are replaced less frequently. For example, compact fluorescent lamps typically last 10 times as long as standard incandescent lamps and thus reduce your clients' maintenance bills.

**Montgomery County, Maryland
recoups the cost of lighting
retrofits in 4 years just from
reduced maintenance costs.**

- **Special financing is often available.** Some energy providers offer rebates to customers who install energy-efficient products and equipment, and others offer 0% or low-rate financing. Furthermore, your clients may be eligible for below-market financing or other financial incentives from the federal government and from state energy financing programs.

**Portland, Oregon received
\$420,000 in rebates as a
result of its energy
efficiency program.**

What all this means is that **energy-efficient products are very often cheaper** than their inefficient counterparts when all of the costs (such as purchasing cost, energy cost, and maintenance cost) are considered over the products' entire lifetime. This is called *life cycle cost*, and it is a proper way to compare products to decide which provides the best value. The purchase price of some energy-efficient products may be higher, but their life cycle costs are usually lower, so your clients will **save taxpayer dollars** when you specify them.

**Your government
clients will appreciate
your helping them buy
ENERGY STAR
labeled products that
save substantial tax
dollars.**

Better Operating Efficiency

- **Improved operating characteristics, comfort, and quality.** Your clients will be pleased to learn that ENERGY STAR compliant products often work better and are higher quality. For example, energy-efficient lighting can offer more light, with better colors and less flickering. The University of Cincinnati replaced old boilers with energy-efficient ones that increased efficiency from 76% to 86%. This higher efficiency caused energy consumption to decrease by 88 million BTUs per year, reducing annual energy costs by \$300,000.

**The G. Pierce Wood
Memorial Hospital in
Arcadia, Florida
retrofitted with T8
lamps that increased
lighting levels by 21%.**

- **Greater reliability and longer product life.** Many energy-efficient products provide more reliable performance, often over a much longer life. LED exit signs last 10 to 20 times as long as conventional signs and are more reliable because they are less likely to burn out.

Environmental Responsibility

- **A cleaner, healthier environment.** Most energy is produced by burning coal, oil, or natural gas. Unfortunately, carbon dioxide and other greenhouse gases are created and emitted into the atmosphere during the process, and these gases are extremely harmful to the environment. Because they use less energy, ENERGY STAR compliant products are responsible for fewer of these dangerous emissions, resulting in a cleaner, healthier environment for everyone. More and more state and local governments are committing themselves to help reduce pollution, and you can help them do it by specifying ENERGY STAR labeled products.

The energy saved by 100 ENERGY STAR compliant exit signs yields pollution reductions equivalent to taking 46 cars off the road for a year.

**The bottom line:
Specifying ENERGY STAR compliant products saves your clients money, provides better performance, and demonstrates your cutting-edge expertise.**

Steps To Take

How do you go about specifying energy-efficient products, especially when you must consider the requirements of your client agencies/departments and adhere to their governmental policies and regulations? Here are some steps to follow:

1. **Access the ENERGY STAR website.**
 - Become familiar with it and the ENERGY STAR Toolkit.
 - Develop an understanding of the magnitude of the cost savings and other benefits that result from specifying ENERGY STAR compliant products.
2. **Learn your company's policy toward energy-efficient products, and determine the extent to which they are specified on client projects.**
 - Find out if your company has specified energy-efficient products in recent new construction or facility renovation projects, and learn how successful they have been.
 - If your company is not yet specifying ENERGY STAR compliant products, suggest that they begin doing so.
 - Products such as compact fluorescent lamps or LED exit signs are excellent places to start because they save tremendous amounts of energy and have a much longer life, so their payback is very short.

3. **Share this brochure with your colleagues, your supervisor, and anyone else who wants to reduce the life cycle cost of your clients' projects and improve client relationships.**

- With more supporters, the chances of success are much greater.

4. **Discuss energy-efficient products with your clients, and explain the benefits of ENERGY STAR compliant products if they are not already familiar with them.**

- Many governmental bodies are already demonstrating leadership in environmental and energy conservation, and others would do so if they had more information about the issue.
- Confirm with your clients that their construction and renovation policies and guidelines are consistent with specifying energy-efficient products.
- Inquire if any environmental, "green," or energy-related legislation or resolutions apply to your clients.

5. **Suggest to your clients that you specify ENERGY STAR compliant products for one of their projects that has not yet begun and for which no construction budget has been established.**

- Use the savings calculator (in the ENERGY STAR Toolkit, and also available on the

San Antonio's Convention Center was built with many energy-efficient features even though the City had no formal energy-efficiency policy. The energy saving initiatives were driven by the general contractor.

ENERGY STAR website) to estimate the cost savings that would result from switching to energy-efficient products for the selected project.

- Show your clients the savings that are possible, and work with them to agree to specify ENERGY STAR compliant products.

- Make certain that your clients

understand the high return on investment provided by energy-efficient products, and why they should survive any cost-cutting or "value engineering" process.

6. **Advise your clients to keep track of the cost savings achieved.**

- The savings can be as high as a 25%-50% reduction in energy costs, and an investment payback of 1 to 7 years.

Become An Energy-Efficiency Champion

Once the process gets going, there is a lot more that you and your company can do to help your clients and, at the same time, gain a reputation as being cost conscious and knowledgeable about energy-efficiency. Your company could do what some of your clients have probably already done: designate someone as an "energy manager." This person would be well informed about energy-efficient products and their benefits, and also be familiar with available information resources. The "energy manager" would play a key part in helping your company completely implement the energy-efficiency concept by, for example:

The State of Tennessee has established a full-time energy unit to promote energy-efficient products and designs in capital projects.

- “Spreading the energy-efficiency word” throughout your company
- Working with clients to explain the benefits of ENERGY STAR labeled products and to help them ensure that their renovation and construction policies and guidelines are appropriate
- Assisting you and your colleagues in specifying ENERGY STAR compliant products
- Representing your company at energy-efficiency meetings and conventions, or even sponsoring such a group on a local or regional basis
- Working with, and learning from, external associations and groups involved in energy-efficiency. The Energy Efficient Building Association, the American Council for an Energy Efficient Economy and many others are involved in energy-efficiency and “green” programs.

Energy-Efficiency Resources

The next step is yours, but you are far from alone. Many organizations are committed to specifying, and helping others to specify, ENERGY STAR compliant products. The following are some resources you can use.

The EPA’s energy-efficiency website and toll-free number are:

www.energystar.gov will introduce you to the ENERGY STAR program. 1-888-STAR-YES will put you in touch with personnel involved in the ENERGY STAR program at the EPA.

The DOE has several important websites:

www.eren.doe.gov/buildings the DOE’s Energy Efficiency and Renewable Energy Network (EREN). The Office of Building Technology, State and Community Programs (BTS) supports both builders (building material and equipment, design, and software tools) and building owners (energy-efficient purchasing, commissioning, and operations and maintenance).

www.energycodes.org is the website for the DOE’s Building Standards and Guidelines Program, a resource on energy codes and standards. They can also be contacted at 1-800-270-2633.

The CREST (Center for Renewable Energy and Sustainable Technology) websites are:

<http://solstice.crest.org> is dedicated to energy-efficiency. It contains case studies, and discusses funding sources.

<http://gem.crest.org> also includes case studies, and has a state-by-state guide to energy efficiency resources.

The website of the nonprofit Energy Efficient Building Association is:

www.eeba.org which promotes education and development of energy-efficient buildings and also offers publications such as the *Builder’s Guide*.

The website of the nonprofit American Council for an Energy Efficient Economy is:

www.aceee.org The ACEEE promotes the development of energy-efficiency improvements in buildings and equipment. It works on standards and codes, retrofit strategies, and emerging technologies. The ACEEE also conducts summer conferences on energy-efficient buildings.

The website of the New Buildings Institute is:

www.newbuildings.org This is a not-for-profit national collaborative that encourages the efficient use of energy in buildings. It specifically supports improved codes and standards, and educates building officials, architects, and engineers about building energy-efficiency.

The website of the Building Codes Assistance Project is:

www.bcap@ase.org This project promotes energy-efficient construction standards. It provides assistance on developing state and local government building energy codes.

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If you have comments about this guidebook, the ENERGY STAR website or the ENERGY STAR Toolkit, if you need more information, or if you would like to submit your own energy-efficiency “success story,” please call: 1-888-782-7937.