Introduction

Owners and managers of commercial buildings are often contacted by companies promoting various products and technologies that can allegedly improve the energy efficiency of their facilities. Often, it can be difficult to assess which options are legitimate opportunities for capturing energy savings and which may provide a valuable investment for an organization.

This resource provides a list of steps for building owners/managers to consider when evaluating the suitability of new energy-reducing technologies or products for their commercial buildings.

Step 1: Gather Information

Upon receiving a cold call/email from a vendor, gather as much information as possible about:

▶ **The product or technology.**

Request all information the vendor can provide.

- ✓ Did they provide case studies that are relevant to your sector or building type?
- ✓ If selling a product, have they provided performance data based on testing that complies with relevant industry methods of measurement?
- ✓ Is it clear what modification of your existing building systems would be required to apply the product/technology? Is the product/technology compatible with other building systems?
- ✓ Is the product/technology upgradeable? Does implementation of the product/technology position you into a proprietary system that will require you to use the same vendor in the future?
- ✓ Are there other suppliers that provide the same or similar product/technology?
- ✓ Are they offering a maintenance program?
- ✓ Do they provide a product warranty? If so, review the limitations and conditions.

▶ **The vendor.**

What can you tell about the vendor from its company website and other promotional materials? What information can you find about the vendor from outside sources?

- ✓ Check with the Better Business Bureau for any complaints filed against the vendor.
- ✓ What proof of business documents has the vendor provided (e.g., license, insurance, bonding, etc.)?
- ✓ Does the vendor mention any professional memberships or industry-oriented training to verify the level of technical skill?
- ✓ Are references available from the vendor? Are there reviews of the company/product posted online?
- ✓ Are the vendor's corporate stewardship and Diversity, Equity, and Inclusion (DEI) goals and programs consistent with your company's goals?

Step 2: Research the Opportunity and Consult Trusted Advisors

Seek input from colleagues and other trusted contractors/vendors with whom you regularly do business. Consider including sector-specific affiliate groups and trade associations in these inquiries.

▶ **Has the product or technology been validated?**

✓ Search the Better Buildings Solution Center for examples of the product/technology's implementation by peers (filter by technology type to find relevant results).

✓ Contact one of the Better Buildings Technology Research Teams to ask about their knowledge/experience with the product/technology. If you are a Better Buildings partner, your account manager can connect you with an appropriate staff member from one of DOE's national labs.

✓ Consult DOE's Field Validation Results for case studies involving the vendor or product/technology.

✓ See if the product/technology has been investigated by any of these organizations/programs:
   o GSA's Green Proving Ground
   o Emerging Technologies Coordinating Council (researching commercially available technologies in California)
   o Northwest Energy Efficiency Council's Smart Buildings Center—Accelerated Technology Deployment Program
   o DOE's E3 Initiative (for accelerating the adoption of heat pump technologies)
   o New Building Institute's Advanced Water Heating Initiative

Step 3: Quantify Energy Savings

Consider engaging an independent entity to model energy savings from the proposed product or technology. These methods may be options for calculating savings:

▶ **Meter-based savings analysis**

Energy savings is measured at the meter level against a baseline period. Weather normalization is recommended, but not required.

✓ Monthly billing analysis: Use of monthly utility bill data to determine energy savings. Energy Charting and Metrics (ECAM) is a free Excel-based tool that can be used to weather-normalize monthly billing or hourly interval data and measure energy savings.

✓ Automated Measurement and Verification (M&V): Develop an interval data-driven model of baseline energy use utilizing M&V functionality embedded in an energy management and information system (EMIS), or by using other software tools such as Universal Translator, ECAM+ M&V module, statistical analysis software, and Excel.

► **System analysis**

System analysis approaches for estimating energy savings may use Building Automation System trends or short-term measurements as baseline data.

✓ Engineering calculations: Spreadsheet calculations based on engineering equations that often utilize temperature or load-based bin analysis.

✓ Building energy simulation: Modeling whole facility energy use with software such as eQUEST, EnergyPlus, Trane TRACE, or Carrier HAP.

Step 4: Explore Tax Incentives, Rebates, and Alternative Financing Opportunities

► **Is the product or technology eligible for tax incentives or rebates in your area?**

The vendor may provide this information, but you should also confirm with your tax advisor and local utilities.

✓ Check for relevant state/local incentives.

✓ Review rebates available from your local utilities.

✓ The energy-efficient commercial buildings deduction (IRC Sec. 179D) is a popular tax benefit for installing qualifying energy-efficient systems. Consult your tax advisor about this or other applicable tax incentives.

► **Are there financing opportunities that would make the product/technology more cost-effective?**

Use the Better Buildings Financing Navigator to identify options.