

“Who Will Manage Your Industrial Energy Costs?”

There’s an old witticism that goes like this: if the only tool you have is a hammer, then you spend all your time looking for nails. All too often, that kind of thinking colors industry’s approach to energy management. Engineers tend to think of energy solutions as hardware and equipment projects. Finance people see it as a procurement issue. Maintenance supervisors often think in terms of operating procedures.

Many plant managers anticipate using one tool—i.e., a singular approach or form of assistance—to control their energy costs. Each tool, by itself, can yield some results, albeit limited or temporary. The real key to managing energy costs, however, is developing and implementing a business plan that identifies baseline energy consumption and includes an inventory of potential improvements, a work plan for employing available tools, and measures for gauging progress in controlling energy costs. These efforts will involve technologies, procedural changes, employee awareness, and cost-benefit evaluations.

The following is a discussion of the most common energy-saving tools. Each tool can provide value, but there are pros and cons to each. Reliance on one tool to the exclusion of all others can be futile. Imagine trying to build a house using only a hammer....

Tool #1: Lowest-cost energy purchasing. Energy marketers or brokers purchase fuel on a contract basis, sparing the consumer the risk of fuel price volatility.

- Pros: Many consumers are satisfied to simply have level (i.e., predictable) fuel bills from month to month.
- Cons: Focusing solely on price does nothing to capture savings by reducing energy waste. Brokers’ fees are based on the volume of fuel sold, so they’d rather NOT have the consumer consume less. Without knowing their own energy consumption patterns, consumers “drive blindfolded” with respect to fuel price volatility, availability of new technologies, and challenges from evolving emissions regulation.

Tool #2: Consulting engineers. An engineering expert diagnoses and identifies potential improvements, usually focusing on discrete hardware projects.

- Pros: Well-chosen “projects” can cut energy costs. Also, a local consultant can be retained for technical assistance on an as-needed basis.
- Cons: Consultants tends to stick with what they know best. They often bring solutions “looking for a problem” rather than the reverse. Consultants’ solutions tend to be limited to hardware, ignoring managerial or procedural improvements. Paybacks on hardware/technology solutions are vulnerable if the consumer does not complement them with appropriate training and operating procedures.

Tool #3: In-house “energy champions:” A few scattered, self-appointed employees take the initiative to control energy costs at a departmental level.

- Pros: An empowered, knowledgeable champion can be effective on a local basis for leading in-house energy improvement efforts.
- Cons: Usually a single-tool focus. It's either engineering, OR procedures, OR training, OR purchasing – but rarely the coordination of all the above. Effectiveness is limited without corporate support and without having maintenance, operations, and finance people all on the same page.

Tool #4: Training programs: Government and utility representatives boost consumer awareness of new technologies and energy practices. They usually offer one-day workshops, diagnostic software, Internet websites, and site demonstrations.

- Pros: Lots of comprehensive info made available to industry at low or no cost.
- Cons: Trainees tend to be industry's non-managerial staff that are not empowered to make or are not interested in procedural or managerial changes. Result: a bias for small, quick, easy "projects" with limited and temporary impacts on energy costs.

Tool #5: Equipment rebates, grants, and finance programs: Utilities or government agencies promote the purchase and installation of new, more efficient capital equipment.

- Pros: These can help industrial consumers that have scarce investment capital. Grants and rebates may increase the industry-wide volume of new technology installation, thus lowering the per-unit cost of such hardware.
- Cons: Utilities tend to be hardware-focused. There is little consideration of consumers' abilities to make procedural changes and measure impacts. Utilities work collaboratively with each other to pick "winner" technologies—which may or may not be what every consumer needs. Paybacks on hardware/technology solutions are vulnerable if the consumer does not complement them with appropriate staff training and procedural changes.

Tool #6: Energy service company (ESCO) partnership: The industrial consumer partners with a company that provides on-site energy management functions for a contractual period of time. The ESCo establishes a business plan for energy improvements that recognizes procedural changes, training needs, and capital projects to be implemented.

- Pros: Consumers obtain results quicker and more thoroughly when partnering with a good ESCo than by muddling through on their own. Paying the service company helps the company realize savings faster than the do-it-yourself approach, which involves a learning curve.
- Cons: Consumers must surrender a portion of the savings, or a fee, as compensation to the energy management partner. The consumer can make it too easy for the energy service company if the consumer does not first capture large, easy savings as prescribed by an initial energy audit.

Bottom line: Energy cost control is not a one-time event, and it takes more than one tool to make progress. A number of people, both internal and external to an industrial facility, can contribute to effective energy management. It is a process that must be supported by a business plan and backed with management support. That business plan will identify not only the tools, but the starting point, the goal, and the players that make results happen.
