



A New Natural Resource... Energy Efficiency

STORY BY RICH BAILEY

Energy efficiency may not be “the new black,” but to hear Steve O’Neil talk it’s pretty close to it.

Energy efficiency isn’t sexy, but it should be,” according to the Chattanooga-based energy consultant. “It’s so cost effective, so economically and environmentally beneficial and, frankly, so easy, that it needs to be one of the first tools that companies reach for when they want to reduce costs or go green.”

With energy efficiency starring on a *Time Magazine* cover story (Jan. 12, “Why We Need to See the Light About Energy Efficiency”) and in President Barack Obama’s energy policy, O’Neil may get his wish about energy efficiency taking on a higher profile.

Steve O’Neil is founder and president of Applied Energy Conservation Systems (AECS), which offers industrial and commercial companies an unusual value proposition: if they invest in a new layer of simple technology that can reduce electric bills by 10-30%, he will guarantee the savings, including a specified return on investment that can be anywhere between 25-50%. The guarantees are backed by a surety bond underwritten by Lloyd’s of London.

AECS uses technologies and techniques developed by Energy Automation Systems, Inc. (EASI), headquartered in Hendersonville, Tennessee. In 27 years of operation, EASI’s technologies have been implemented across the country in major companies, including Coca-Cola, General Electric, Ford, Samsung, General Mills, Shell Oil, Carrier, and many more.

Industries that have been served include manufacturing, hotel/motel, office, retail, utilities, colleges and universities, hospitals, and amusement parks. AECS is currently working with several Chattanooga companies.

In 2008, EASI won a new contract with the U.S. General Services Administration that will allow federal government agencies to purchase the company’s energy-saving technologies, systems and services from affiliates like AECS using pre-approved price lists. According to the GSA, the federal government spends approximately \$9 billion on energy bills every year nationwide, which includes electrical energy expenses for 500,000 federal government facilities.

With protocols for pricing and services having been posted on the GSA web site in January 2009, O’Neil anticipates serious interest this year from federal facilities in the Chattanooga area. “By reducing the government’s energy bills, we can save significant taxpayer dollars, at a time when that money is needed to rebuild the economy,” he says.

According to O’Neil, there are many technologies on the market dealing with sustainable power generation (like solar, wind, and geo-thermal) and lower power use (such as tankless water heaters and high efficiency HVAC, motors and lighting), but few companies are addressing electrical distribution efficiency.

“When a lot of industrial managers hear the word ‘efficiency,’ they think they have to replace a hundred-thousand-dollar piece of equipment, but we find efficiencies without replacing equipment,” says O’Neil. “We’ve developed a particular niche with mitigating line loss and improving motor load efficiencies by applying passive technologies that generate impressive kilowatt hour savings. We treat the equipment that is already in place, without interrupting business operations, and our solutions are paid for by the savings we create.”

“There’s a stunning amount of low-hanging fruit when you start taking a close look at the energy profile of most companies,” adds O’Neil. “Energy was so cheap for so long that we never really felt like we had to build for efficiency.”

So most industrial operations and commercial buildings built more than a dozen years ago can, for the most part, be significantly improved. For companies that have invested heavily in equipment that they can’t afford to replace, an efficiency program makes a lot of economic sense.

O’Neil’s engineering work begins with a detailed energy audit in five primary categories: motor loads, heating and air, lighting, electronics, and refrigeration. The inventory of all electrical equipment in a plant or building includes horsepower, amperage, voltage, hours of use and phase type for every piece of lighting and equipment.

Based on this analysis, AECS will design and engineer a system of passive technology add-ons that generate the highest amount of savings at the lowest cost. These patented technologies have been proven to achieve savings in various categories of electrical usage: equipment motors, 2-18%; air conditioning, 12-30%; refrigeration, 15-40%; and lighting, 20-50%.

AECS implements its solutions without production down time, involvement from the client company’s staff, or additional maintenance needs. “We do not retrofit or replace the business’s equipment,” says O’Neil. “We do things like putting technology on motors that make them run more

efficiently, switching to high tech lubricants in heating and air conditioning systems, and using modern electronic ballasts and efficient bulbs for lighting.”

“A lighting company or HVAC company is primarily interested in equipment sales, but we are focused on getting the best overall return on investment,” adds O’Neil. “That might mean we would not treat lights that are used infrequently or motors under a certain horsepower because the payback would take too long.”

Steve O’Neil is a long-time advocate of environmental technologies and conservation, and he’s proudly bottom-line oriented in this new company.

“I have seen a lot of environmental technologies come and go, but I feel like this business is finally creating some opportunities for companies to make meaningful changes in the way they operate,” says O’Neil. “What AECS is doing is not solely an altruistic endeavor. With energy costs rising so dramatically, the economics of conservation are driving innovation. Reducing energy costs provides a bottom line benefit for any business.”

He first came to Chattanooga in 1993 working with Dr. John Todd’s “living machines,” which treated water using an assortment of living plants and animals. This experimental technology was proven in the lab to break down the toxic sludges found in Chattanooga Creek, an EPA Superfund site, but was not implemented in the field by EPA. O’Neil stayed in Chattanooga, serving as executive director of Southwings, a conservation aviation service, and of the Chattanooga Nature Center, an environmental education center.

“I’ve been to so many conferences and presentations about how we ought to change the way we use energy,” he adds. “It’s not all that difficult. In many cases the technology has been around for years, but high energy costs are definitely getting companies’ attention lately,” adds O’Neil. “This is one of the most conservative and safe investments a business can make right now.”



PASSIVE TECHNOLOGY ADD-ONS FOR ELECTRICAL USAGE ARE UNOBTRUSIVE—RIGHT FOR EQUIPMENT MOTORS, AND ABOVE FOR REFRIGERATION.

