

How Technology Has Defined Energy Efficiency and What Trends will Shape its Future

What do you view as the major technology breakthroughs over the last 25 years?

Jim Dixon
Vice President, Energy Services
ConEdison Solutions

The widespread use of microprocessor controls and associated state of the art software programming has made significant contributions to energy efficiency in the following areas:

- Building and management system controls for controlling, tracking and monitoring of energy usage within a building. The use of a “state of the art” DDC controls system allows for a variety of energy savings strategies tied to HVAC and lighting to prevent conditioning space when it is not needed and includes energy savings strategies such as night setback/set forward, scheduled on/off times, economizer control, and demand control ventilation.
- Equipment microprocessor controls and associated state of the art software programming embedded in equipment such as chillers and boilers to make them more efficient, while allowing effective equipment interfacing with the building control systems.

Energy Efficient Lighting including the use of improved fluorescent T-8 and T-5 technologies with electronic ballasted lighting, as well as emerging technologies like induction lighting and LED lighting, to significantly reduce energy with fast paybacks and improve color rendition and lighting quality.

Improvements in Compressor Technology resulting in higher cooling efficiency in HVAC equipment.

John Mahoney
Chief Operating Officer
Chevron Energy Solutions

Technologies coming down the cost curve. The most significant development in technologies has been the reduction in cost to acquire, install and maintain key technologies. Costs for solar, wind, controls, energy storage, and lighting have come down dramatically, improving the benefits equation for consumers. If a building has not had an energy efficiency retrofit within the last 10 years, it has missed a sea change. But it’s not too late.

Dave Birr
President
Synchronous Energy Solutions

High efficiency lighting products, especially LEDs, new HID products and high efficiency fluorescent lighting systems have dramatically reduced the amount of energy required to produce a lumen of light output.

Improvements in the quality of Variable Frequency Drives and DCV have also significantly improved matching energy use to actual load requirements.

Modular pulse combustion boilers have been used to design heating systems with much higher seasonal efficiencies than old boilers with limited burner turndown ratios. The kw/ton of central chillers has also improved significantly.

Heat pumps have come into their own as high efficiency heating and cooling systems in the right applications.

Water efficiency measures have vastly improved their performance and become a new source of efficiency for some building owners.

Randy Breske

Vice President, Stay-Lite Lighting, Inc.

President of the interNational Association of Lighting Management Companies

(NALMCO™)

Craig DiLouie

Principal

ZING Communications, Inc.

T8 lamps: T8 lamps are now standard in new construction and therefore are becoming the “new T12”—the new standard to beat. Lighting technology has already moved past this remarkable, highly efficient light source with “energy-saving” versions (25W, 28W, 30W) and high-output versions (“3100+ lumen Super T8”). Potential energy savings can be as high as 18-30 percent—or more, if lower light levels are acceptable.

Electronic ballasts: In terms of both dollar and unit volume sales, electronic ballasts dominate the fluorescent lighting market after a meteoric rise since the early 1990s. Like the T8 lamp, manufacturers are already moving beyond the “standard” electronic ballast to offer premium versions. A major example is the “high-efficiency” electronic ballast. This type of ballast provides the same level of light output as a standard electronic ballast, but does so more efficiently—reducing lighting power by another 2-5W, typically 3W.

T5HO and T8 hi-bay systems: Indoor spaces with high ceilings, such as factories, warehouses, big box retail stores, gymnasiums and all-purpose rooms are often lighted by probe-start metal halide lighting systems. Starting January 1, 2009, the Energy Independence and Security Act of 2007 will begin to regulate the efficiency of ballasts in new light fixtures containing 150-500W metal halide lamps, with some exceptions. In existing buildings, a wave of retrofits have occurred driven by the efficiency of T5HO and Super T8 hi-bay lighting fixtures, which promise up to 50 percent energy savings over probe-start metal halide fixtures.

To read NALMCO’s full article, [click here](#) (link to this

http://www.naesco.org/news/industry/documents/Lighting_technologies%20NALMCO.pdf)

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What industry trends and evolving technologies inspire you with optimism about the growth in energy efficiency opportunities?

Jim Dixon

Total available energy supply in the future will continue to decrease while world demand will continue to increase, driving up energy prices.

Global warming will continue, leading to government-sponsored solutions promoting energy reduction through rebates, tax breaks and legislation.

Public awareness with green technology and sustainability has become mainstream since the general population has become interested in reducing energy consumption in order to be better stewards of our planet. This will encourage end users to invest in long term green and sustainable solutions such as solar PV, solar Domestic Hot Water and wind power.

John Mahoney

Rising energy costs. Capital costs for new generation plants are rising dramatically due to the skyrocketing costs for the raw materials needed to build the plants. The current price tag for a new generation plant is double what it was just a few years ago. These increases in building costs will cause the price for natural gas and electricity to rise significantly and in the end these costs will be passed on to the consumer. These market conditions will increase the demand for ESCOs who can deliver energy efficiency and alternative energy solutions.

Strong linkage between energy efficiency, the environment and sustainability. As organizations become more concerned with climate change and reducing greenhouse gas emissions, they will recognize energy efficiency as the best new source of energy. In addition, organizations are evaluating energy efficiency projects not just in terms of payback periods but they are also looking at how these projects help them to develop more sustainable business practices, improve their environmental record and ultimately increase the value of their brand.

Integrating renewable energy and energy efficiency. The future is all about “negawatts and green megawatts.” Organizations are taking a holistic approach to their energy systems and looking to not only reduce their energy usage but also to generate their own green energy. This makes sense from a risk perspective; by generating green energy on-site they shield themselves from rising energy costs. By combining renewable power generation solutions such as solar, wind, and waste to power with energy efficiency, organizations have a broader and more meaningful impact than implementing either individually.

Tax credits and cap and trade policies. Renewal of the Production Tax Credit (PTC) and Investment Tax Credit (ITC) will continue to drive the consumer’s desire for energy efficiency and alternative energy. Other policies such as the implementation of a carbon or greenhouse gas emissions cap and trade program would have a positive impact on the ESCO industry for years to come.

Water efficiency. Over the years water saving projects have become increasingly integrated with energy efficiency projects. Many of the same principles and technologies used in efficiency projects can be applied to water, making it a natural fit for ESCOs. Like renewable energy, water efficiency projects can be implemented as standalone projects but consumers have come to realize the power of marrying these retrofits with a program that also includes traditional retrofits and alternative power generation.

Brad Jenkins
National ESCO Manager
OSRAM SYLVANIA

LEDs. Over the next 10 years, LEDs will move from a niche-lighting application to a mainstream light source. Today, using LEDs can create opportunities to achieve major efficiency gains and maintenance savings in specific applications but the future holds great promise for more widespread use and value in performance contracting.

Lighting Controls. The future will see major growth in lighting controls. The Energy Policy Act of 2005 offers tax deductions for including lighting controls and many state building codes are mandating controls. More holistic controls, wireless controls, and improvements in the cost effectiveness, from an installed cost perspective, are also driving the market.

Demand Response. With energy prices escalating and real-time electricity pricing gaining ground, demand response programs will be a driver for more controls and lighting innovation.

Kurt Minko
President
Retro-Tech Systems

LEDs. LEDs are a small light source that are easily dimmed, not affected by the cold, easy to mass-produce, and last a long time. Because of their small light source, they can be easily used to address any lighting need. Lighting designers can use LEDs to make truly unique lighting arrangements. LEDs can move lighting from a functional necessity to also being an aesthetic choice.

Growing energy demand. Our dependence on foreign oil and the rest of the world's growing appetite for energy will be a driver for energy efficiency. We cannot continue to consume the same levels of energy. While switching to renewable energy is a good path, the switch needs to be coupled with reductions in energy use.

Progressive policies. Implementing energy efficiency projects takes hard work. The public demand to increase efficiency, reduce dependence on fossil fuels and reduce carbon emissions is helping to bring efficiency to the forefront. Regulations requiring more energy and water efficient buildings will go a long way to getting more retrofits projects done. I hope that one day, inefficient buildings will go the way of asbestos filled-buildings – you won't be able to have one.

Mark McClear
Director of Business Development
Cree, Inc.

Light Emitting Diodes (LEDs) have gone through an incredible technology leap in the last 24 months. Today, the brightest LEDs can deliver more than 700 lumens, and leading-edge luminaire manufacturers are integrating small arrays of these LEDs into indoor and outdoor lighting systems delivering tangible energy and maintenance savings in real-world applications. The U.S. Department of Energy predicts LED lumen per watt performance will improve another 50% in the next four years, while LED pricing is expected to continue to come down over the same period. As LEDs continue to progress technically and continue to come down the cost curve, we expect that LED High Bay lighting systems will be able to deliver substantial energy and maintenance savings relative to even the most efficient fluorescent systems.

To read Cree's full article, [click here](http://www.naesco.org/news/industry/documents/Light%20Emitting%20Diodes%20--%20Cree.pdf) (link to this <http://www.naesco.org/news/industry/documents/Light%20Emitting%20Diodes%20--%20Cree.pdf>)

**Randy Breske,
Craig DiLouie**

Emerging technologies to watch over the next 25 years include dimmable ballasts, digital networks, integrated lighting control and solid-state lighting such as LED lighting. Major trends within the controls field include daylighting controls, wireless control, demand response systems, fixture-integrated controls such as pre-wired occupancy sensors and photosensors, intelligent lighting systems and distributed intelligence.

Daylighting controls are now considered best practice and will become adopted into energy code standards starting as early as 2010, currently driven primarily by the LEED program and in general the sustainable construction movement.

Integrated lighting control may be the near future due to very promising energy savings. The California Lighting Technology Center (CLTC) recently demonstrated a task/ambient Integrated Office Lighting System (IOLS) combining high-efficacy direct/indirect luminaires with an LED Personal Lighting System (task lighting). The system demonstrated lighting power densities of 0.5-0.7W/sq.ft., 36-55 percent lower than ASHRAE 90.1-2004/2007. The addition of an occupancy sensor controlling the task lighting was found to reduce energy consumption by another 20-30 percent.

Intelligent lighting is about to get a major boost. Many ESCOs are by now familiar with the potential for digital dimming offered by lighting control systems based on the DALI protocol. An interesting development in this area is a new DALI protocol called DALI XP that will include standard DALI control devices, not just the ballasts. With DALI XP, designers can truly mix and match ballasts and controls to create a control system.

Lots of opportunity in existing buildings. About 25 billion sq.ft. of commercial building floorspace is still lighted to pre-1980 design standards and likely using the least-efficient lighting systems allowed by law. The owners of this space represent some of today's most suitable customers for energy-efficient lighting upgrades.

The future of efficiency looks bright. The last 25 years produced a remarkable revolution in energy-efficient lighting that has primarily impacted new construction due to the sustainable construction movement, energy codes and legislation. However, there is still considerable opportunity in the existing buildings market.

To read NALMCO's full article, [click here](http://www.naesco.org/news/industry/documents/Lighting_technologies%20NALMCO.pdf) (link to this http://www.naesco.org/news/industry/documents/Lighting_technologies%20NALMCO.pdf)

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NAESCO UPDATES

[NAESCO's Third Quarter 2008 Advocacy Report](#)

NAESCO's advocacy efforts in 2008 continue to expand to ensure that the growing number of energy efficiency initiatives across the country are cost-effective, sustainable, and offer new opportunities for ESCOs and other NAESCO members.

National (Selected Initiatives)

- Working with the Federal Performance Contracting Coalition (FPCC) and GELAT to develop specific recommendations for Congress and the Administration regarding the need for accelerated ESPC investment across the government and to co-ordinate the lobbying campaign on key issues.
- Working with several national energy efficiency initiatives, including the National Action Plan for Energy Efficiency, Clinton Climate Change and the National Governors Association Securing a Clean Energy Future, to promote the use of performance contracting.
- Promoting state PC programs, in conjunction with ESC. NAESCO is drafting model legislation and regulations, as well as scheduling performance contract training programs across the country.

Regional (Selected Initiatives)

- Participating in legislative and regulatory initiatives in MA, NY and NJ that will increase energy efficiency programs by 3-6 times.
- Participating in regulatory and legislative efforts to initiate and implement large new EE programs in IL, IN, OH, MI and OK.
- Working with various national and regional organizations, including ACEEE, Environmental Defense, NRDC, Southern Alliance for Clean Energy, Energy Futures Coalition and Alliance to Save Energy to modify the Duke Energy Save-a-Watt proposals in North Carolina and South Carolina.
- Monitoring and participating in proceedings to develop large-scale EE programs in MD, TN, and FL.
- Participating in multiple California Public Utility Commission proceedings that will determine the scope of the 2009-2011 utility EE programs.
- Worked with the ESC and the Southwest Energy Efficiency Partnership (SWEEP) to reform performance contracting legislation in Arizona.
- Monitoring the initial project implementation of the CA DGS state building PC program and assisting ESCOs to provide feedback to DGS.

Research and Development, supported by US DOE and US EPA

- Participating in continued research on the US ESCO market in conjunction with Lawrence Berkeley National Laboratory. Focus in 2008 on documenting the current size and potential of the state buildings performance contract marketplace.
- Developing a standardized new M&V protocol for O&M and Capital Cost Avoidance savings that is acceptable to ESCOs and a wide range of customers.
- Continuing to work to help EPA develop ENERGY STAR as a vehicle for promoting comprehensive ESCO projects.

[Read the full update](#)

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NAESCO Spring 2008 Accreditation and Reaccreditation Announcements

The NAESCO Board of Directors voted at its June meeting that the following companies be awarded accreditation or renewal of their prior accreditation. The vote was based on recommendations from the Accreditation Committee which is comprised of independent reviewers unaffiliated with any energy services provider. NAESCO congratulates these companies who underwent a rigorous review process which included follow-up by the Accreditation Committee of each of the company's customer references.

Renewal of ESP Accreditation for a period of 3 years

- Chevron Energy Solutions
- Energy Systems Group
- Johnson Controls
- NORESCO

Renewal of ESCO Accreditation for a period of 3 years

- TAC Energy Solutions

Accreditation as an ESCO for a period of 2 years

- Wendel Energy Services

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NAESCO Market Development Initiatives

NAESCO focuses on creating new opportunities for energy efficiency investment, helping our members accelerate the expansion of new markets, ensuring that energy efficiency as a resource is properly valued, and building the tools with which to measure the market impact of energy efficiency.

Research

NAESCO is part of a research team led by scientists at the Lawrence Berkeley National Laboratory looking at energy efficiency projects and energy savings reported in twelve states. The report, which is expected to be issued in October, looks to identify the factors that are associated with successful state efficiency programs.

NAESCO is part of a research team led by the New York State Energy and Research Development Authority (NYSERDA) completing work on a study looking at quantifying non-energy benefits of energy efficiency projects. The final report is under review.

The results of both of these reports will be presented at NAESCO's 25th Annual Conference.

Training

NAESCO has developed and delivered training sessions in Hawaii, Michigan, and Illinois. Upcoming training sessions will be held in November in both western and eastern Pennsylvania, Hawaii, and North Carolina. Sessions focus on how the use of energy performance contracting can help state facility managers and energy program managers meet their energy reduction, green building improvements, and dollar savings objectives.

Workshops and Conferences

A successful GreenTech workshop was held in Chicago in mid-June. The event focused on the ways in which energy efficiency is the cornerstone of designing green buildings and

implementing green and sustainable strategies in both new construction and retrofitted facilities. Architects, lighting designers, ESCOs, and facility managers talked about the impact of LEED on building design decisions and the enhanced role of energy efficiency in the revised LEED existing building guidelines.

NAESCO produced its first Industry Jobs Fair in New York City on September 10th. Fourteen companies participated in this inaugural event and about 150 attendees met with company representatives. The CBS News local affiliate in New York sent a reporter and a cameraman to cover the event for an upcoming piece on green jobs.

[Upcoming NAESCO Events](#)

The 25th Annual NAESCO conference will be held in Santa Monica, California on October 28-29, 2008. We will celebrate a quarter of a century of achievements and will welcome a diverse group of speakers to help identify and contemplate the tremendous opportunities for the industry going forward. To register for the conference, go to

<http://www.naesco.org/events/conference/annual/2008/registration.htm>

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INDUSTRY NEWS

[ACEEE Names Four Champions of Energy Efficiency](#)

The American Council for an Energy-Efficient Economy (ACEEE) presented four Champions of Energy Efficiency Awards at its biennial conference. These awards recognize leadership and accomplishment in the energy efficiency field. Winners are selected based on demonstrated excellence in program implementation, research and development, energy policy, or private sector initiatives. NAESCO-member **Philips Lighting Company** was one of the Champions recognized for leading the way toward replacement of conventional incandescent lamps in the U.S. market. Philips initiated efforts to set incandescent lamp efficiency standards in the U.S. and played a pivotal role in working with the rest of the lighting industry, energy efficiency advocates, and Congress to negotiate the lamp standard provision that was enacted as part of the Energy Independence and Security Act of 2007. Dian Grueneich, Commissioner, California Public Utilities Commission, ENE (Environment Northeast) and Roger Duncan, General Manager, Austin Energy were also recognized.

[Read the full press release \(http://www.naesco.org/news/industry/news.aspx?NewsID=38\)](http://www.naesco.org/news/industry/news.aspx?NewsID=38)

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[State and Local Legislation Leveraging ENERGY STAR](#)

State and local governments across the country are adopting policies that leverage EPA's ENERGY STAR tools to reduce energy use in commercial buildings. EPA has released a new document summarizing state and local legislation that references the use of ENERGY STAR tools like Portfolio Manager in project development.

[Read the full document](#)

http://www.naesco.org/news/industry/documents/State_and_Local_Legislation.pdf

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[California Adopts the Nation's Leading Green Building Code](#)

The California Building Standards Commission unanimously approved the nation's first Green Building Standards Codes on July 17, 2008. The codes which contain standards for single-family homes, health facilities and commercial buildings will be voluntary until 2010 when the provisions are expected to become mandatory. The code is intended to reduce greenhouse gas emissions, improve energy efficiency and conserve water in all new buildings.

According to the state, the new standards target a 50 percent landscape water conservation reduction, encourage builders to reduce energy use of their structures by 15 percent more than today's current standards, encourage the use of recycled materials in carpets and building materials, and identify various site improvements including parking for hybrid vehicles and better storm water plans. The implementation of the new building standards are expected to result in increased water and energy savings through a combination of more efficient appliances, use of efficient landscapes and more efficient building design and operation.

[Read the full press release \(http://www.naesco.org/news/industry/news.aspx?NewsID=39\)](http://www.naesco.org/news/industry/news.aspx?NewsID=39)

[Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy](#)

The Political Economy Research Institute released "Green Recovery", a new report showing that the U.S. can create two million jobs in two years by investing in a \$100 billion green economic recovery program. The program would aim to boost private and public investment in retrofitting buildings to improve energy efficiency, expanding mass transit and freight rail, and constructing 'smart' electrical grid transmission systems, wind power, solar power, and next-generation biofuels.

[Download the report](#)

http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/peri_report.pdf

Other News of Interest

A September 3rd article in the New York Times entitled "Old Facades Refreshed for Efficiency and Higher Rents" reported that a private equity firm in Washington, DC converted a drab 12-story building in Washington built in 1968 with an exterior of windows spaced five feet apart to full-floor glass with improved energy efficiency and has been able to rent the space at a 40% premium per square foot. The article said that the project represents a national trend as owners of middle-aged buildings use energy efficiency to attract tenants who are willing to pay for well-sealed facades and higher performing insulated glass that more-effectively filters sunlight while better illuminating the interior.

According to an August 27th article in the New York Times subtitled "Consultants in Everything Green Become Mainstays", there is a growing group of consultants specializing in helping developers, architects, and sometimes tenants get LEED certification. At the end of 2006, the Green Building Council's membership included 679 consultants but by July 31 this year, there were 1,590. The article said this mirrors the rapid increase in the number of buildings certified by USGBC; in 2005, there were 404 buildings that met LEED standards. Midway through 2008, 1,705 buildings have been certified.

A September 9th article in the Wall Street Journal entitled “Cutting Tech's Energy Bill” reported that big computer makers including IBM and HP are spotting opportunity in customers' desire to curb electricity usage in large corporate data centers, where energy use has soared in recent years. According to the article, EPA states that power use in data centers has doubled from 2000 to 2006 and now accounts for about 1.5% of U.S. electricity consumption. The article quotes IBM Chief Executive Samuel Palmisano who told stock analysts that IBM expects more than 70% of the world's biggest companies "will modify their data centers significantly in the next five years" to deal with energy shortfalls and rising costs.

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MEMBER NEWS

For a full list of all NAESCO Member News, please visit <http://www.naesco.org/news/press/members/default.htm>

Projects and Products

[Chevron Energy Solutions and the City of Millbrae Turn Kitchen Grease Into Biogas to Power Wastewater Treatment Plant](#)

http://www.naesco.org/resources/casestudies/documents/CaseStudy_Millbrae_WPCP.pdf

Chevron Energy Solutions and the City of Millbrae completed new facilities at Millbrae's Water Pollution Control Plant that use a common urban waste – inedible kitchen grease from restaurants – to naturally produce biogas for generating renewable power and heat to treat the city's wastewater. The system includes a grease receiving station and an expanded cogenerator as well as other upgrades that result in annual revenues and energy savings of \$366,000 for Millbrae while nearly doubling the amount of "green power" produced at the plant.

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[Ameresco and Anheuser-Busch Undertake Bio-Gas Project](#)

Anheuser-Busch has entered into an agreement with Ameresco McCarty Energy to purchase biogas from Allied Waste Services' McCarty Road Landfill, making use of an alternative fuel source for the company's Houston brewery. The biogas is a natural byproduct of waste decomposition at the landfill. Currently, some of the biogas from the McCarty Road Landfill is being captured, processed and sold to a local utility, while the excess is flared (burned without energy recovery). Ameresco plans to capture some of that unused biogas and transport it to the Anheuser-Busch brewery through a four-mile underground pipeline.

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[Johnson Controls to Harness Renewable Energy, Improve Energy Conservation Measures for Oak Ridge National Laboratory](#)

Oak Ridge National Laboratory in Oak Ridge, Tenn. has signed an \$89 million energy savings performance contract with Johnson Controls, Inc. to apply advanced energy conservation solutions, including a biomass gasification system, to the campus. As the project's cornerstone, a wood gasification biomass system will take the place of the existing natural gas steam plant and steam distribution system. By using woody biomass from the region as the main energy

source for the facilities, ORNL will reduce fossil fuel consumption by 80 percent. Furthermore, the biomass plant significantly reduces greenhouse gas emissions equal to planting 32 million trees.

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[ConEdison Solutions to Provide Energy Services for the New York Power Authority](#)

ConEdison *Solutions* has been awarded a contract through competitive bidding to provide energy services for the New York Power Authority, also a NAESCO-member. Under the contract, ConEdison *Solutions* will provide energy efficiency upgrades, including the implementation of lighting, motors and controls projects in selected facilities in southeast New York, which includes the five boroughs of New York City and Westchester County. Services will include conducting feasibility studies, evaluating existing and proposed systems, developing designs, purchasing equipment, installation, supervision of installation and commissioning of equipment.

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[Constellation Energy's Projects & Services Group Announces Acquisition of Water & Energy Savings Corporation](#)

Constellation Energy announced that its subsidiary, Constellation Energy's Projects & Services Group, has signed an agreement to acquire NAESCO-member Water & Energy Savings Corporation. W&ESCO will operate under the Constellation Energy brand from its base in St. Petersburg, Florida. W&ESCO provides a full range of performance-based water and energy solutions complementing Constellation Energy's Projects & Services Group existing business lines which include energy consulting, energy services and energy assets.

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[Siemens Helps Allegheny College Launch Energy Reduction Program](#)

College pilots energy efficiency program with Clinton Climate Initiative and Siemens
Siemens Building Technologies, Inc. was recently selected to provide an investment-grade energy audit to Allegheny College, a private liberal arts college in Meadville, Pa. The college is one of several American College and University Presidents Climate Commitment signatories to launch pilot projects through the Clinton Climate Initiative's Energy Efficiency Building Retrofit Program. Allegheny's goal is to replace aging elements of its infrastructure in order to achieve better energy efficiency as well as generate emissions reduction across all facilities at the college.

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[Energy Systems Group and Veolia Environmental Services Announce Landfill Gas-to-Electricity Project](#)

Energy Systems Group and Veolia Environmental Services have reached an agreement to develop a landfill gas-to-electricity project in southwestern Indiana. The 3.2 Megawatt project is a partnership between Veolia ES Blackfoot Landfill in Winslow, Indiana, and ESG Biofuels (Blackfoot), LLC to capture landfill gas and use it as a fuel source to generate electricity.

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[FMI Sees Energy Efficiency M&A Activity Robust](#)

FMI completed two transactions in the ESCO/Energy Efficiency sector in the first half of 2008 and expects M&A activity in the sector to remain robust in the foreseeable future. FMI advised **Custom Energy Services** of Overland Park, KS, in its sale to **ConEdison Solutions** of White Plains, NY. FMI also advised Energy Services Group of Minneapolis, MN, in its sale to **Honeywell Building Solutions** of Minneapolis, MN. Tim Huckaby was the lead banker on both transactions.

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[Tennessee School District Takes Steps to Save Energy with TAC](#)

TAC to Install New Lighting, Energy Management System

The Decatur County School System in Decaturville, Tenn. is implementing more than \$427,000 in facility enhancements designed to improve operations, comfort and efficiency at four schools and the district administration building. The Energy Solutions division of TAC will complete the work as a performance contract with the school system.

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[Honeywell Helps California Schools Soak Up the Sun, Cut Utility Bills](#)

Honeywell is helping school districts in California address global warming and carbon emissions concerns through an innovative solar program. Dixon Unified School District and Riverdale Joint Unified School District in central California have awarded Honeywell solar projects expected to drive more than \$1 million in energy savings for each district over the next 20 years. Under the agreements, Honeywell will install solar panels at several facilities and sell the electricity the panels produce to the districts.

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[Ameresco Awarded Energy Conservation Contract with State of Arizona](#)

The State of Arizona's Procurement Office has selected Ameresco as one of the ESCOs qualified to participate in the State's Energy Performance Contracting work. The award allows the State of Arizona's 20 agencies, as well as state universities, community colleges, cities and counties, to access Ameresco's energy conservation services, in an effort to reduce energy consumption and costs at Arizona's government buildings.

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[Johnson Controls and Oklahoma State University Veterinary Center Report Early Results of Energy Conservation Effort](#)

The Oklahoma State University Center for Veterinary Health Sciences has completed upgrades to five buildings that are expected to realize approximately \$9 million in energy savings over the course of a 20-year performance contract with Johnson Controls, Inc. Based on a utility bill

comparison, the project has already delivered more than \$154,000 in operational savings during the installation period. The savings are a result of upgrades that range from glazing windows and installing lighting controls to retrofitting the buildings' plumbing and air flow systems.

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[Buhler School Facilities Works with Custom Energy Services, a ConEdison Solutions Energy Services Company to Attain EPA's Energy Star](#)

The Buhler Unified School District 313 administration has been awarded the U.S. Environmental Protection Agency's prestigious ENERGY STAR, the EPA's public recognition for achieving superior energy efficiency and environmental protection. To attain this honor, the District worked closely with Custom Energy Services, a ConEdison *Solutions* energy services company, to find a creative solution to reduce the school's energy consumption. Using a guaranteed energy savings performance contract, Custom Energy Services completed \$1.2 million in energy-efficient upgrades in the District's facilities including lighting modifications, new boilers, a new chiller, upgrades to the energy management systems, and water conservation measures.

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[University of Louisville Signs Contract with Siemens](#)

An energy audit at the University of Louisville is expected to lead to energy savings of more than \$33 million by 2020. The university and Siemens Building Technologies have signed a 12-year contract to help the university trim its energy usage through equipment upgrades and better systems for controlling the use of electricity, water and other resources. The audit, now underway, includes nearly six million square feet and 84 buildings. Siemens has pledged to reduce the university's \$13.8 million annual utility bill by about 30 percent per year.

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[Honeywell Working with the Wilmington Housing Authority to Improve 2,000 Low-Income Homes and Save \\$560,000 in Annual Operating Expenses](#)

Honeywell announced a \$6-million energy-efficiency and building modernization program for the Wilmington (Del) Housing Authority. The program centers on a variety of facility improvements that will help the housing authority decrease energy and water consumption, and reduce its environmental footprint.

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COMPANY NEWS

[Advance Awards 2008 "Beyond Illumination" Scholarships Through IALD](#)

In commemoration of its milestone 60th Anniversary and subsequent contribution of \$60,000 to the International Association of Lighting Designers (IALD) Education Trust in 2005, Advance awarded its fourth annual pair of \$5,000 student scholarships to deserving students at the annual IALD Awards Presentation and IALD Education Trust Benefit Dinner. Established in 2005 to recognize outstanding North American-based students and help support pursuit of their on-going

interest and specialized education in the field of lighting, Advance's "Beyond Illumination" scholarships will continue to be administered in the form of two \$5,000 student awards annually through 2010.

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[**Trane Leaders Teach Girls How to Perform a Building Energy Audit at Girl Scouts Leadership Institute**](#)

The Girl Scouts of the USA asked Trane to lead girls through an interactive exercise on how to make buildings more energy efficient and environmentally responsible. Pam Greve, Trane's building automation solutions leader, and Mary Scarbrough, Trane's parts solutions leader led the girls through an energy audit of the Edith Macy Conference Center. They also discussed how careers in engineering can be fun and have a positive impact on the world at large.

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