

January Program Meeting



TOP ATTENDANCE – More than 140 members and energy-efficiency stakeholders attended CEE's January Program Meeting in Long Beach, Calif.

Efficiency industry puts up record numbers

In 2005, CEE member programs accounted for \$35 billion in savings

We're all a part of something big, and it's getting bigger every day.

Big, as in billions of dollars. In 2006, efficiency program administrators in the U.S. invested more than \$2.6 billion of public funds in energy-saving programs. That's an increase of 13 percent over 2005.

Virtually all of these programs were run by CEE members. The exact numbers are detailed in CEE's recent report, *U.S. Energy-Efficiency Programs, a \$2.6 Billion Industry* (available at www.cee1.org).

CEE members accounted for 90 percent of the publicly-funded electric programs and 99 percent of the gas programs.

Although a precise measurement of cost-effectiveness is not possible, CEE member programs are making a major impact on energy consumption and utility bills. Member programs resulted in electricity savings of 47,384 GWh,

CEE's Gas Summit: Stepping up to the challenge

As part of its expanding commitment to gas-efficiency programs, CEE held the first Natural Gas Demand-Side Management Summit in Dallas Nov. 6-7.

This eight-hour conference, split over the two days, concentrated on identifying key North American roles to advance natural gas savings. Twenty-two organizations from the U.S. and Canada



BRUCE JOHNSON
'Now we have the resources'

2006 energy-efficiency budgets*	
Total of all U.S. programs	\$2.6 billion
Increase from 2005	13 percent
2005 savings impacts for CEE members*	
ELECTRIC PROGRAMS	
47,384 GW	
1 percent of U.S. consumption	
\$35.2 billion in consumer savings	
GAS PROGRAMS	
161 million therms	
0.1 percent of U.S. consumption	
\$212.3 million in consumer savings	
2005 environmental impacts*	
(from CEE member programs)	
Metric tons of CO ₂ prevented	30.3 million
This is equivalent to removing 6.6 million passenger cars from the road for one year.	
<small>*Totals are estimates. For sources, see <i>U.S. Energy-Efficiency Programs, a \$2.6 Billion Industry, 2007</i>, www.cee1.org.</small>	

more than 1 percent of 2005 U.S. electric consumption. The average retail value of these electric energy savings totaled \$35.2 billion.

Continued on next page

participated in this workshop.

"The summit was truly a great opportunity to work with other gas utilities from across the country to identify and develop a forward-thinking strategy for natural gas energy efficiency," said Charlie Olsson, Manager of Residential Energy-Efficiency Services for NSTAR.

"More importantly, the summit resulted in providing a great platform and opportunity for CEE to really strengthen its position in the natural gas energy-efficiency arena and

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'Everything is coming together' to support efficiency in California

When regulatory policy, state energy policy and legislation align to drive energy efficiency, the results can be dramatic.

"Everything is coming together to support energy efficiency," said Lynda Ziegler, Senior Vice President of Customer Service at Southern California Edison, at the January Program Meeting.

"The convergence of policy issues is giving us this opportunity. Building codes, standards and energy-efficiency measures are really producing results. It's tremendous."

According to a chart Ziegler used in her presentation, the average American accounted for about 12,000 kWh of energy usage in 2005; the average California resident consumed around 7,000 kWh that year. And while overall U.S. per capita energy consumption has steadily increased for the past five decades, per capita consumption in California has remained level since the mid-'70s.

'The convergence of policy issues is giving us this opportunity.'

*Lynda Ziegler
Southern California Edison*

California's four investor-owned utilities have been funded for \$800 million to run energy-efficiency programs (and evaluation of these programs) from 2006-08. The projected savings are more than 300 billion kWh with impacts of 800 MW. "We're projecting that ratepayer investment in energy efficiency will be capable of avoiding the construction of three 500 MW power plants over the next three years," Ziegler said.

One of the keys to success, noted Ziegler, is passing energy-efficiency legislation. "Institutionalizing the policy around efficiency has been successful here in California," she said. "The way

to get policy really embedded is through legislation. Regulators come and they go. What you need is legislation that supports energy efficiency."

Southern California Edison has also heavily marketed energy-efficiency programs to its customers, developing promotional materials in several different languages and conducting community outreach. In addition, SCE will be piloting 5,000 "smart meters" this year. This equipment allows customers to save money by reducing energy consumption during peak demand periods.

"The smart meters empower our customers," Ziegler said. "The meters show customers when and how they're using energy, and how they can save."

Pending the results of the pilot program, Southern California Edison plans to begin changing out meters in 2008, with the goal of replacing all meters by 2012.

Efficiency industry puts up record numbers

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In 2005, CEE member gas programs resulted in gas savings of 161 million therms. Gas programs are just beginning to grow – yet they saved an amount equal to almost one-tenth of one percent of all U.S. natural gas consumption in 2005. The average retail value of these gas savings totaled \$212.3 million.

Not coincidentally, CEE membership is also growing. The number of CEE members has more than doubled in the last 10 years, expanding to Texas, the Southwest and major parts of Canada. In the Southeast, programs are

sprouting up and interest in CEE – once non-existent – is showing signs of life.

At CEE program meetings, attendance continues to grow. More than 140 people attended the January meeting in Long Beach, Calif., making it the largest CEE program meeting ever.

Credibility, partnerships, savings

CEE's report gives efficiency program administrators a vehicle to present their combined significance, reach and opportunity as a North American industry. This invites other industries to build meaningful industry-to-industry

partnerships that result in increasing savings.

CEE has committed to collect and publish budget and impact data annually. In 2007, it is hoped that data from Canadian programs can also be included.

The collection and compilation of this budget and impact information, in itself, is a significant achievement. Prior to 2005, no current-year estimates of the funding for U.S. energy-efficiency programs had been published. Estimates of the aggregated impacts of CEE members' programs were also not collected or reported.

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UPCOMING EVENTS

Date	Event	Contact
March 12-14	2007 ENERGY STAR Lighting Partner Meeting ATLANTA	www.2007lightingmeeting.com
March 14	MDM Webcast: Increase Profitability through Motor Management	www.motorsmatter.org jharvey@cee1.org
March 20-21	ACEEE-CEE National Symposium on Market Transformation WASHINGTON, D.C.	302-292-3966 www.aceee.org
April 23-27	ACI Home Performance Conference CLEVELAND	800-344-4866 www.affordablecomfort.org
May 10	Northeast Energy Efficiency Summit PROVIDENCE, RHODE ISLAND	781-860-9177 www.neep.org
June 13-14	CEE Program Meeting BOSTON	617-589-3949, ext. 206 www.cee1.org
June 13-15	CEE Board of Directors Meeting BOSTON	617-589-3949, ext. 206 www.cee1.org
June 24-27	ACEEE Summer Study on Energy Efficiency in Industry WHITE PLAINS, NEW YORK	302-292-3966 www.aceee.org

CEE meetings

• MT Symposium March 20-21

The 11th annual National Symposium on Market Transformation, co-sponsored by CEE and ACEEE, will be held March 20-21 at the

Omni Shoreham Hotel
2500 Calvert Street NW
Washington, D.C.
202-234-0700

The Symposium will address opportunities and challenges within the field of energy-efficiency programming, providing updates on current program approaches and new strategies for program design.

Sessions will examine innovative program planning and marketing strategies to expand the reach of market transformation, both geographically and into new product areas.

For further information, see www.aceee.org or call 302-292-3966.

• CEE Program Meeting June 13-14



CEE's summer Program Meeting will be held June 13-14, followed by the Board of Directors Meeting on June 15.

Meetings will be held at the Hyatt Harborside, located at 101 Harborside Drive, just minutes from Boston's Logan Airport.

CEE's discounted room rate is \$195 per night.

Additional information will be posted on the CEE Web site when it becomes available.

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Comments, story ideas, news items and calendar listings should be sent to CEE Communications Director Howard Newman at hnewman@cee1.org.

Commercial Buildings Workshop examines program approaches

CEE's Commercial Buildings Workshop, held Jan. 16 in Long Beach, Calif., provided a forum for discussion of the commercial whole-building program opportunity. It also provided an opportunity to learn about programs that are incorporating whole-building, energy-efficiency approaches.



BRENNA WALRAVEN
BOMA Chair

The day-long workshop, which had 40-plus attendees, also enabled participants to examine relevant national initiatives and market sector trends.

Speakers and panelists included representatives from EPA, Southern California Edison, the Northwest Energy Efficiency Alliance, NYSERDA, Xcel Energy and Pacific Gas & Electric. They discussed their programs, exploratory efforts and how whole-building approaches are gaining traction within commercial markets.

"Participants explained how they have begun to use whole-building approaches to achieve energy savings over time," said CEE Commercial Program Manager Jason Erwin.

"We also learned how some administrators are leveraging state and national initiatives to support their own programs and to help them reach out to specific market segments, like the commercial real estate office market."

The workshop, held one day prior to CEE's Program Meeting, examined a number of program approaches including:

- Engaging building owners, operators and managers by using industry forums and developing relationships with building owner industry groups, like the Building Owners and Managers Association (BOMA)
- Leveraging ENERGY STAR® Benchmarking and other national efforts
- Integrating operations and maintenance elements into programs (e.g., incorporating the Building Operator Certification (BOC) training program)
- California's experience with its Commissioning Collaborative and energy savings potential of retro-commissioning in the office sector

Presenters also discussed additional national resources and initiatives relevant to program administrators. Mary Colvin, of the National Renewable Energy Laboratory (on behalf of the DOE Building Technologies Program), kicked off the workshop by presenting findings from a new DOE commercial office building market study.

Her presentation underscored the importance of engaging the commercial office sector, which consumes the most energy of all commercial building sectors nationwide (19 percent of the total energy usage of commercial buildings).

Presentations from the workshop are available at www.cee1.org.

Leveraging industry forums

One avenue to engaging the commercial office sector is

through the Building Owners and Managers Association (BOMA), an organization representing 19,000 members nationwide and with which CEE has created a strong relationship in recent years. BOMA Chair Brenna Walraven, and CEE members discussed how collaboration can be fruitful for both program administrators and local building owners.

BOMA, in a partnership with ENERGY STAR®, developed the BOMA Energy Efficiency Program (BEEP), a Web-based seminar that educates real estate professionals about low- and no-cost energy-saving opportunities in their buildings. BOMA licenses use of the BEEP material to its local chapters, who can then work out financial arrangements with area utilities. Several CEE members have worked with their "BOMA locals" in a variety of different ways.

The Northwest Energy Efficiency Alliance (NEEA), for example, has found it effective to convene lunch meetings that include its own program staff as well as area real estate professionals and local BOMA representatives. "It's a more personal, interactive approach that allows for networking," said Jack Davis of NEEA.

Peter Turnbull of Pacific Gas & Electric reported that his company takes a more "hands-off" approach, funding local BOMA chapters in San Francisco to license, arrange and deliver the BEEP training in PG&E's service territory.

Members, ENERGY STAR address the opportunities

At CEE's Commercial Buildings Workshop, participants examined a number of key, whole-building program approaches to promoting and delivering energy savings within the commercial office sector.

Discussion included the leveraging of existing national programs like ENERGY STAR® Benchmarking, communicating and building off of emerging local and regional initiatives as well as new research efforts. Many of these workshop presentations are available at www.cee1.org.

Leveraging national efforts

Several CEE members are beginning to leverage EPA's ENERGY STAR® initiatives. Tracy Narel of ENERGY STAR provided information about two relevant initiatives: the national 10% Challenge and the on-line benchmarking tool.

Through its 10% Challenge, ENERGY STAR has connected with a number of commercial real estate stakeholders and more than 20 states to set energy-reduction goals, benchmark their buildings and continue to reduce energy usage across their building portfolios.

Narel also mentioned that ENERGY STAR's benchmarking tool, which scores a building's relative energy performance compared to similar building types, is gaining more users nationally. The tool now includes a database of almost

Continued on next page

Commercial Lighting Initiative includes reduced-wattage systems

Responding to member interest, CEE's High-Performance Commercial Lighting Committee has expanded the initiative's portfolio of specifications for lighting systems.

Following approval by the CEE Board of Directors on Jan. 19, the initiative now includes reduced-wattage T8 systems. Because low-wattage systems save energy, provide comparable light to older lighting systems and are relatively easy to change out, they are becoming a popular choice for existing building installations.

Members saw an opportunity for a CEE specification to provide clarification on the technology and facilitate potential energy savings in replacements and retrofits.

Manufacturers were also interested in the development of this specification, and provided their input in the process. Industry has been heavily promoting these systems as an energy-efficient option and the systems have made



significant inroads in the T8 marketplace. With CEE's specification, there now exists an industry-accepted definition of efficient reduced-wattage T8 products.

The reduced-wattage T8 specification, now available on the CEE Web site (www.cee1.org), includes application guidance as well as product parameters.

"There are applications where reduced-wattage systems are not optimal and we want members to be aware of this," explained CEE Program Associate Susan Loucks, who is managing the initiative. "These lighting

systems can be very efficient, though, when used in the right situations."

The initiative also promotes high-performance T8 systems, which provide more light output and have fewer performance limitations than reduced wattage systems.

High-performance systems appear to be well suited for use in new construction or major renovation applications, where the need for fewer fixtures can be included in the lighting design.

CEE members now have two viable options for promoting commercial lighting in their programs, one that is better suited to replacements and one for new construction and renovation.

"The reduced-wattage systems save energy and they don't require a comprehensive effort to install," said Loucks. "We hope program managers will be able to use this new specification to provide information and guidance on a wider portion of commercial lighting needs."

Members, ENERGY STAR address the opportunities

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15,000 buildings, up from about 7,000 in 2004. For more information on these initiatives, visit www.energystar.gov.

The Northwest Energy Efficiency Council reported on its Building Operator Certification program (www.theboc.info), which is a nationally recognized energy-efficiency training and certification program administered by local efficiency organizations. At present, nearly two dozen CEE members have incorporated Building Operator Certification training into their commercial building programs.

Doug Gatlin of the U.S. Green Building Council (USGBC) discussed the Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) program. LEED-EB, a voluntary green building certification program for existing buildings, enables building owners to gain points toward certification by achieving high ENERGY STAR benchmarking scores.

While LEED-EB considers other sustainability criteria that do not specifically



Participants at the Commercial Buildings Workshop learned about member programs.

address energy performance, CEE's Commercial Building Performance Committee will continue to monitor LEED activities and inform members about potential opportunities.

Other efforts

The Northwest Energy Efficiency Alliance's Building Performance program employs a market sector focus to work with service providers, building market awareness, providing training and other on-line building operator tools.

Retrocommissioning, a process that seeks to optimize building operating performance in existing buildings, was an important topic of discussion. Phil Welker of Portland Energy Conservation, Inc. (representing the California Commissioning Collaborative) presented case studies and described the lessons learned from retro-commissioning projects in California office buildings.

The California Commissioning Collaborative (www.cacx.org) is a nonprofit organization committed to improving the performance of buildings and their systems. On its Web site, the CCC provides free guidelines for building commissioning and retro-commissioning.

A Southern California Edison project called "Office of the Future" is in the process of developing guidelines for the "next generation of leading-edge offices."

Southern California Edison's Doug Avery is spearheading this project, which is run by a collaborative of six utilities.

CEE Board endorses exploration of efficient data centers

Data centers were a hot item at CEE's January Program Meeting in Long Beach. With the rapid growth of the information technology industry, issues and opportunities have arisen concerning the cooling requirements and space needed for computer systems.

With a need for greater space and increased cooling, energy consumption is quickly rising.

In addition, major breakthroughs in technology are also fueling a movement toward more efficient systems.

The U.S. market for computer servers is expected to grow from 2.8 million units in 2005 to 4.9 million units in 2009, placing a growing demand on energy supplies. After conferring on the topic, the Board of Directors agreed to endorse the establishment of a CEE committee that would pursue program and market approaches for servers and data centers.

"Given the significant energy savings potential, the pace in which this industry moves and recent strong interest by the industry to collaborate, there is a real need to fast-track a CEE effort," said Roland Risser, Director of Customer Energy Efficiency at Pacific Gas & Electric and Secretary of the CEE Board.

In November, PG&E announced the first known utility incentive program for data center owners that employ "virtualization" software, specific airflow controls (for cooling) and power distribution systems.

Data centers run the gamut from small "closet" centers to huge "Enterprise" centers that house tens of thousands



Data centers require large amounts of electricity for computer operation and cooling.

of servers. Google has a data center the size of two football fields.

Operation of the computer systems produces heat so energy demand includes not only electricity to run the servers but air conditioning to adequately cool the space.

With energy costs rising over the past few years and commercial computer space dwindling, the computer and software industries are quite motivated to make their products and operations more energy efficient.

A number of recent national activities underscore the importance of data center energy efficiency. In December, President Bush signed a bill (H.R. 5646) that required EPA to:

- 1) project the growth in energy use of computer servers and data centers, and
- 2) assess the energy savings potential and potential incentives and voluntary programs for promoting energy-efficient computer servers and data centers

EPA's findings are expected to be presented to Congress in June of 2007. As part of the bill, ENERGY STAR is also evaluating its role to develop new product specifications for enterprise servers and a new benchmark for data centers.

Directly following the Jan. 19 Board meeting, CEE began assessing energy savings associated with hardware upgrades and "virtualization" (software applications) as well as system savings such as cooling load and data center design and management. CEE will also work closely with EPA and other industry and member efforts.

"As an outgrowth of this work, CEE expects to identify recommended market actions that can accelerate adoption of efficient hardware, software and design practices," said CEE Deputy Director Ed Wisniewski.

To receive further information about CEE's Data Center Committee, contact Rachael Swain at rswain@cee1.org or 617-589-3949, ext. 206.

Revised HECAC specification includes two new tiers

On January 19, the CEE Board of Directors approved a revision to the High-Efficiency Commercial Unitary Air Conditioning and Heat Pumps specification. With new federal minimum standards set to take place in January 2008 for small commercial unitary equipment (and January 2010 for larger unitary equipment), CEE's Commercial HVAC committee determined that a specification revision was appropriate at this time.

Committee research had revealed that today's top-performing models were 5-15 percent more efficient than the tier level promoted in the 2006 specification.

After a review of the latest performance data from the Air Conditioning

and Refrigeration Institute (ARI) directory and manufacturer correspondence, two additional tiers for unitary air Conditioning and heat pump efficiency levels were developed.

"The new specification represents three performance levels based upon demonstrated equipment performance," said CEE Commercial Program Manager Afroz Khan.

For unitary heat pumps rated at 65,000 Btu/hr. or greater, the Commercial HVAC Committee did not develop a performance level in Tiers 2 and 3 because of limited equipment availability.

The revised specifications are available on the CEE Web site (www.cee1.org).

Commercial Kitchens Initiative adds two new product categories

Specs for steam cookers, hot-food holding cabinets now available

CEE has expanded its Commercial Kitchens Initiative to include two new product categories, steam cookers and hot-food holding cabinets.

The initiative now comprises seven commercial food service products, giving CEE members a wide choice (or combination) of products to promote in their service territories.

Because of the significance of the added water savings achievable in many food service products, initiative participation has been expanded to include sponsoring water agencies.

High-efficiency steam cookers, for example, have the potential to save 90 percent of water usage as well as 30-50 percent of gas or electricity consumption.

The specification for commercial steam cookers, which are found in both full-service and quick-service restaurants, is based on the ENERGY STAR® requirements for energy usage, with the addition of a water component developed by the committee. There are separate specifications for electric and gas models.



CEE's high-efficiency specification for hot-food holding cabinets is based on ENERGY STAR performance levels and a maximum idle energy use. Sizes for this equipment vary greatly.

Tier 1 performance is the ENERGY STAR level of no more than 40 watts/cu. ft. and Tier 2 is 50 percent more efficient than the base ENERGY STAR level or 20 watts/ cu. ft. or less.

High-efficiency hot-food holding cabinets, which are used in full-service type restaurants as well as the hospitality sector, have the potential to reduce energy costs by 40-50 percent.

The full specifications for both new products can be found on the CEE Web site (www.cee1.org).

For further information about CEE's Commercial Kitchens Initiative, contact Afroz Khan at akhan@cee1.org.

SoCal Gas provides tour of Energy Resource Center

On Jan. 18, CEE's Commercial Kitchens Committee visited the Southern California Gas Company Energy Resource Center in Downey, Calif.



MELISA MARKS
SoCal Gas

Built in 1995, this LEED-certified building includes a dozen specialty rooms featuring air quality, combustion, climate control, industrial process technology, residential new construction, food service equipment, natural daylighting and natural gas vehicles.

A primary goal of the design and construction of the ERC was to be able to advance energy-efficiency and environmental innovation for others.

Melisa Marks of Southern California Gas provided a tour of the facility, including details about how the center meets the needs of their customers in the food service sector.

Twenty-two participants, representing 10 CEE member organizations, took the tour.

Highlights of the tour included hands-on contact with a large array of energy-efficient commercial cooking equipment as well as witnessing actual customer testing of products, such as pizza and pasta preparation.

Specifications for commercial clothes washers are revised

New levels are identical to those of residential washer initiative

Revised specifications for CEE's Commercial, Family-Sized Clothes Washer Initiative were approved by the Board of Directors on Jan. 19.

These new specifications are now identical to those applying to residential clothes washers in CEE's Super-Efficient Appliances Initiative.

The change also coincides with a revision to the ENERGY STAR® specification for commercial clothes washers.

In many cases, the same manufacturers make commercial, family-sized washers and residential washers, which are often based on the same technology platforms and are similar products

(with the exception of an added coin box or card reader).

Thus it is now easier for manufacturers to work with a single set of consistent clothes washer specifications.

The updated specifications, along with a revised qualifying products list, are posted on the CEE Web site (www.cee1.org). Some models and brands on the 2006 qualifying products list no longer qualify for the revised list.

In addition, no current commercial models meet CEE's Tier 3 specifications. Many residential clothes washers qualify at the Tier 3 level, however, so the levels were deemed technically feasible.

CEE is encouraging manufacturers to produce commercial washers that

CEE commercial clothes washer specification

Effective Jan. 1, 2007

Level	MEF	WF
Tier 1	1.8	7.5
Tier 2	2.0	6.0
Tier 3	2.2	4.5

MEF=Modified Energy Factor WF=Water Factor

meet these performance levels and will be monitoring the market throughout 2007.

CEE's efforts in 2007 also include development of a savings calculator to help programs determine energy and water savings associated with the new specifications and exploration of potential cooperative efforts with water-efficiency stakeholders.

Motors industry values program partnerships through MDM

North American campaign is extended for three years

At its January meeting, CEE's Board of Directors authorized a three-year extension of the *Motor Decisions Matter* campaign. In Phase 3, the campaign will focus on local coordination between MDM sponsors and their C&I customers.

"Sponsors feel that a greater emphasis on local coordination will result in more facility upgrades and greater implementation of motor management plans," said CEE Program Manager Ilene Mason, who manages *Motor Decisions Matter*.

"CEE will still be working on the national level, spreading the word about the importance of motor management. But sponsors want to make sure that businesses are taking advantage of motor management programs offered by local utilities."

Motor manufacturers are in full agreement. MDM sponsors include 11 major motor manufacturers as well as the National Electrical Manufacturers Association (which represents a large share of motor manufacturers) and the Electrical Apparatus Service Association (which represents motor service centers and distributors).

On behalf of motor manufacturers around the country, Dale Basso, Product Manager at Reliance Electric and Chair of the NEMA Motors Section, delivered a presentation to the CEE Board in support of MDM. "We really do care about efficiency,"



'We really do care about efficiency. *Motor Decisions Matter* is a useful vehicle in this effort.'

Dale Basso of Reliance Electric at CEE's Jan. 19 Board Meeting

said Basso. "*Motor Decisions Matter* is a useful vehicle in this effort."

Basso emphasized the value of the partnership between the motors industry and efficiency program administrators. The partnership has grown over the years as a result of MDM, he said. Basso voiced support for building on that partnership at the local level to deliver MDM's message, tools and relationships in the field.

He noted that *Motor Decisions Matter* adds a "neutral third-party legitimacy"

to the manufacturers' message while providing centralized messages and resources. "The campaign also allows for synergistic messages, such as variable-speed drives, pumps and services," he said.

He pointed out that getting the message to small- and medium-sized end-users is critical. "Large companies often have a person on staff who handles energy efficiency," said Basso. "It's the smaller companies that need our help."

Insights from the motors industry, the motor service industry and the efficiency community were incorporated into the Phase 3 Business Plan. "Motor vendors and service providers are in a position to make contact with those hard-to-reach customers and engage them in motor planning," said Mason. "Partnering with local efficiency programs brings additional credibility, consistency and resources."

This type of partnering also supports CEE member goals. "CEE members have developed program approaches that support motor management in the market," Mason added. "Their results include energy and demand savings, as well as enhanced trade ally partnerships."

There is growing enthusiasm among the sponsors as MDM rolls out the 2007 activity schedule (see "Campaign Events" at www.motorsmatter.org). In addition, the campaign welcomes two new sponsors, Austin Energy and Alliant Energy.

CEE looking to expand Premium-Efficiency Motors Initiative

Taking a step toward the expansion of the Premium-Efficiency Motors Initiative, CEE's Motors and Motor Systems Committee has drafted the *Guidance Specification for Large (250-500 hp), Low-Voltage, General Purpose Motors*.

This *Guidance Specification* provides general performance and application information for program administrators to consider when developing incentive programs for motors in this category.

The current initiative covers motors addressed by the Energy Policy Act of 1992, i.e., 1-200 hp, low-voltage, general-purpose motors, and aligns with the NEMA Premium® efficiency levels for this range of product. As proposed,

and if approved by the Board, the revised initiative would recommend a custom approach to addressing motors in the 250-500 hp range rather than the prescriptive approach recommended for the 1-200 hp size class.

"Because of their size, large motors are more expensive, consume more energy, and have a greater potential for energy savings than their smaller counterparts," explained CEE Industrial Program Manager Ilene Mason.

"Correspondingly, duty cycle, loading factor, operating hours and other application parameters have a greater impact on overall efficiency and energy savings than for smaller motors. Given this greater variability in savings, it

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New aeration monitor: potential for big savings in wastewater plants

For most wastewater treatment facilities, the process of dissolving oxygen into wastewater, known as aeration, is the most energy-intensive portion of the treatment process.

By introducing air in the form of very small bubbles, fine-bubble aeration systems can increase oxygen-transfer efficiency (OTE) and save energy. Unless treatment systems are properly maintained, however, oxygen transfer can decrease and degrade system efficiency.

At the Jan. 17 Program Meeting, Diego Rosso of UCLA's Civil and Environmental Engineering Department and Southern California Edison's Lory Larson presented information about a new technology in wastewater treatment, an off-gas analyzer that measures oxygen-transfer efficiency.

By quantifying the levels of oxygen transferred in treated water, this instrument can determine the



According to Diego Rosso (above), checking the off-gas analyzer once a week can translate into big energy savings.

effectiveness of a fine-bubble aeration system.

The project is funded by the California Energy Commission (CEC) and managed by Southern California Edison. The UCLA Engineering Department has built the prototypes and provided technical support.

Aeration accounts for 40-75 percent of the energy consumed during wastewater

treatment. "Fine-bubble diffusers are more energy efficient than large-bubble diffusers," explained Larson.

"Unfortunately, the diffusers also tend to clog and this wastes energy. The solution is to clean the tank and the diffusers."

To clean or not to clean

How often should the tank be cleaned? No one seems to know. Unless the tank is completely drained and the aeration system examined – a costly and time-consuming exercise – it's difficult to pinpoint. So the cleaning process takes place infrequently, wasting significant amounts of electricity.

"There are no identified protocols," Larson said, "so most plants don't do it. They clean when they think they need to."

By measuring the oxygen-transfer

Continued on page 19

SCE's pump-testing program has plenty of eager customers

While aeration is the largest consumer of electricity in wastewater treatment plants, water pumping is the biggest energy-user in drinking water systems. Representing more than 80 percent of the electricity used in water treatment plants, water pumping represents a significant opportunity for programs to achieve energy savings.

At CEE's January Program Meeting, the CEE Municipal Water and Wastewater Committee received a briefing on Southern California Edison's Hydraulic Services (Pump Test) Program, one of the largest and longest running pump-related, energy-efficiency programs in the country.

The presentation is part of CEE's ongoing exploration of successful program approaches to achieve energy savings in the municipal water and wastewater sector.

Program Manager Gary Suzuki explained that SCE provides free pump tests to customers pumping potable water, such as agricultural irrigation and water agencies.

The pump test determines overall system efficiency, electrical motor performance, pump hydraulics and water well characteristics. The test compares the relationship between energy consumed (kWh) and water flow (gallons per minute) at a given pumping head (feet). The result is a computer-generated report containing the estimate of

overall efficiency of the motor, pump assembly and applicable distribution systems (pumping plant).

Tests are administered by SCE and independent contractors, using a common procedural manual. After the test, facility managers receive a letter detailing the pump's efficiency.

If a pump passes the efficiency test, it's a congratulatory letter. If not, the letter contains a cost analysis which describes upgrades, potential savings and paybacks. Southern California Edison's Danny Johnson noted that most of the savings opportunities are related to adjusting the bowl and impeller assembly – pump overhaul or pump replacement.

SCE does not work with customers to determine the cost of the repair work; customers are expected to follow up with their contractors for that information.

Based on the pump test results, customers are invited to participate in SCE's Agricultural Energy Efficiency Program, where they are eligible to receive an incentive of 8 cents per kWh saved, capped at 50 percent of the project cost.

Based on program experience, approximately 20-40 percent of those getting the pump test report letter, complete the repair work and participate in the incentive program. The

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SCE's Hydraulic Services Program has 17 full-time staff who test about 4,400 pumps annually. The tests identify 25-33 million kWh of potential savings a year.

Stepping up to the challenge



Facilitator Doug Brookman worked with participants to develop lists of drivers and opportunities for gas efficiency as well as a vision (next page).

Continued from page 1

hopefully attract even more [gas] members.”

Drivers and opportunities

The stated objective of the Summit was to develop a shared vision for the future of gas efficiency and identify concrete actions to pursue this vision.

Toward that end, Summit participants listed and discussed the drivers of gas efficiency, the pressures being faced by program administrators and the program opportunities across North America.

The drivers for gas efficiency were categorized as:

- Environmental concerns
- Regulatory trends
- Policy and political issues
- Utility economics
- Technology factors
- Customer needs
- Utility corporate concerns
- Cross-cutting considerations

Historically high prices, increasing political pressure on energy use, concerns about climate change and customer satisfaction resonated as common themes from the participants.

Summit Participants

ACEEE
Aquila
Bay State Gas
Berkshire Gas
California Energy Commission
Energy Trust of Oregon
Gaz M tro
KeySpan Energy Delivery
MidAmerican Energy Company
Natural Resources Canada
NSTAR Electric & Gas
NW Natural
NYSERDA
Pacific Gas & Electric
Puget Sound Energy
San Diego Gas & Electric
South Jersey Gas Company
Southern California Gas
Union Gas
Vermont Gas
Wisconsin Focus On Energy
Xcel Energy

Another major topic of discussion focused on the growing reliance on natural gas for electricity generation.

Since natural gas-powered electricity generation tends to be efficient and less polluting than alternatives such as coal plants, it is expected that demand

for natural gas electricity generation will continue to grow. This has put pressure on gas supplies at a time when domestic gas production is outpaced by overall demand.

This discussion of drivers was followed by a session on opportunities, in which attendees generated an extensive list of gas-saving opportunities, for both near and long-term consideration.

This list of opportunities provided a starting point for thinking creatively about efficiency programs and prioritizing areas for working together through CEE.

Opportunities for gas efficiency were divided into the following categories:

- Program design
- Technology
- Regulation
- Program expansion
- Partnerships
- Research

“CEE’s Natural Gas Summit was helpful and exciting because it addressed natural gas energy efficiency from technological and regulatory perspectives, both of which are important to increasing the amount of natural gas energy

DSM SUMMIT

efficiency," said David McCamant, Energy Efficiency Product Manager at MidAmerican Energy. "Addressing regulatory barriers is a necessity to help CEE members expand natural gas energy efficiency programs to additional states and provinces."

Developing action plans

Discussing the opportunities and drivers for gas efficiency led to a dialogue about strategies for cooperative efforts.

Participants selected five priority areas for working together. The first four centered on major end-use areas: residential space heating, residential water heating, commercial laundry and commercial space heating.

The fifth area addressed potential regulatory solutions that could support gas efficiency. For each of these areas, attendees drafted action plans that will serve as the basis for planning future work for the CEE Gas Committee.

These action plans, as well as an overview of the Summit, are available in CEE's *Report from the Summit: Outcomes and Next Steps*.

Contact Kara Rodgers, CEE's Senior Program Manager for natural gas programs (krodgers@cee1.org) for an electronic or hard copy version of this report.

In addition to critically examining drivers and opportunities for gas efficiency, a number of other relevant topics were discussed.

Fred Gordon, Director of Planning and Evaluation at the Energy Trust of Oregon, briefly discussed his organization's recent study of gas savings potential and several other similar studies.

Martha Brook, Senior Mechanical Engineer at the California Energy Commission, spoke about funding for gas technology research through the Public Interest Energy Research (PIER) program. Ed Wisniewski, Deputy Director of CEE, discussed innovative program models. Bruce Johnson, Director of Energy Management for KeySpan Energy Delivery New England, gave a



presentation about his company's efforts to increase efficiency for its 2.6 million gas customers.

Further details about these presentations, plus information about obtaining the PowerPoint slides, can be found in the *Report from the Summit*.

Moving forward

Virtually everyone agreed that CEE's Natural Gas DSM Summit was a big boost for gas efficiency programming in North America. The Summit signified CEE's growing commitment to natural gas efficiency.

"The Natural Gas Summit helped to jump-start the dialogue and lead a new charge to emphasize the importance of gas-efficiency programs going forward," said Scott Harrington, Manager of Energy Services for Vermont Gas Systems.

In 2007, CEE is committing additional staff for gas programs, more than doubling the FTE allocation (to 3.0)

from a year ago (see announcement below about CEE's new Senior Program Manager, Kara Rodgers).

CEE is also restructuring member dues requirements to provide added funding for gas work.

Equally important is an influx of new gas members, including Terasen Gas (British Columbia), Cascade Natural Gas (Washington/Oregon), CenterPoint Gas (Minnesota) and NW Natural, a former CEE member.

"We're looking to CEE to play a significant role," said KeySpan's Johnson. "CEE is expanding staff and increasing funding for gas efficiency. We're adding gas members.

"Now that we have the resources, we have to work to make things happen."

One of the objectives of the Summit was to develop a shared vision for the future of gas efficiency in North America.

After about an hour of focused discussion, participants came up with the following statement: "Lead a robust and expanding natural gas efficiency marketplace to achieve a sustainable energy future for North America."

"The Summit was the first step that will enable members to move forward with new energy-efficiency programs that would be far more difficult to develop on an individual basis," said Derek Buchler, Manager of Demand Side Management for Bay State Gas Co.

"CEE has shown that it is serious about gas energy efficiency across all customer sectors."

CEE hires new gas program manager

On March 1, Kara Rodgers joined CEE as the Senior Program Manager for natural gas programs, continuing work that has expanded greatly in the past few years. She has an undergraduate degree and Masters of Business Administration from Yale University.

Most recently, Rodgers served as Manager of Marketing and Strategy for Praxair, the largest supplier of industrial gases in North and South America.

Rodgers's predecessor, Stephanie Jones, is moving to Switzerland so her husband can pursue a career in his native country.

Jones, who worked at CEE for five years and was instrumental in CEE's increased commitment to natural gas programming, is expected to be available for research assignments on a part-time basis.



KARA RODGERS

Board Committee, ENERGY STAR work to bolster value

CEE's ENERGY STAR® Board Committee was formed in 2005 to strengthen the partnership with the ENERGY STAR Program. The committee recognized the important role ENERGY STAR continues to play and challenged CEE members and the federal government to make responsible and full use of this important asset.

The committee has collaborated with ENERGY STAR on:

- maintenance of brand integrity
- increasing brand equity
- brand management
- joint water and energy opportunities
- promotion of "super efficiency"
- expansion for appropriate product areas

CEE's ENERGY STAR Board Committee, which includes 14 Board members, continues to meet with ENERGY STAR representatives – in person and through conference calls – to discuss opportunities of mutual interest.

Much progress has already been made through this collaborative effort, including a report on brand integrity (*Maintaining the Value of ENERGY STAR*, see page 20), an exploration of super-efficient ENERGY STAR product



labeling ("Save More") and a water- and energy-efficiency workshop.

"Save More"

A number of CEE members are interested in using the ENERGY STAR platform while also drawing additional attention to a subset of products that exceed ENERGY STAR's minimum qualifying levels. These would be consistent with CEE performance tier levels.

Along with the promotion of ENERGY STAR levels, CEE often encourages the promotion of higher efficiency levels to generate greater savings, increase program effectiveness and/or accelerate introduction of "a next generation" of efficient products. Programs often link these higher efficiency levels with increased financial incentives.

During recent discussions with the CEE Board Committee, EPA agreed to explore the use of the differentiator "Save More." As contemplated, products associated with "Save More" would

Continued on next page

Mark Gaines joins CEE's Board of Directors

Mark Gaines, Director of Customer Programs for San Diego Gas & Electric and Southern California Gas Company (Sempra Energy), joined the CEE Board of Directors on Jan. 18.



MARK GAINES
Sempra Energy

Gaines is responsible for both utilities' development and implementation of energy-efficiency and demand-response programs for all customers. The budget for these programs exceeds \$120 million per year.

Gaines has worked for the Sempra Energy utilities for 22 years, holding positions of increasing responsibility in engineering, public affairs, environmental solutions and customer services.

A seat on the Board became vacant when Director Athena Besa of Sempra Energy stepped down due to a change in her job responsibilities.

Besa had served on the Board for the past 18 months.

The Board recognized Besa's contributions in a resolution thanking her for her service to CEE.

ENERGY STAR: Success in 2006, big plans for 2007

Awareness, retail participation and utility promotion for ENERGY STAR® all made significant advances in 2006.

"It was a good year," reported EPA's Peter Banwell, Team Lead for ENERGY STAR Product Marketing. "All the work being done [by efficiency program administrators and retailers] is paying off."

Banwell pointed to successes in major retail chain promotions as well as nationwide campaigns such as "Cool Your World" and "Change a Light."

ENERGY STAR enlisted new partners (Menards and Wal-Mart) and established new or revised specifications for 18 product categories. For many of these products, CEE submitted comments on behalf of its members.



PETER BANWELL
EPA

"Awareness is the first step," Banwell said, "and according to CEE's research, national awareness levels are at an all-time high."

Advertisements that featured (or included) ENERGY STAR also continue to be on an upswing, according to Banwell.

In 2007, ENERGY STAR plans to explore additional energy-efficiency opportunities in data centers, computers, televisions and monitors, digital-to-analog (DTA) converters, home electronics and commercial food service.

CEE committees continue to work closely with ENERGY STAR staff, providing input and finding areas for co-promotion in member programs.

In addition to the continued involvement of CEE committees in specific product areas, CEE is also working closely with EPA and DOE to enhance the ENERGY STAR brand to better serve the needs of program administrators (see story above).

UC-Davis creates center for emerging technologies

University of California, Davis, has launched the first university center to focus exclusively on energy efficiency.

Boosted by a \$1 million grant from the California Clean Energy Fund, UC-Davis started the Energy Efficiency Center last year. Pacific Gas & Electric has pledged \$500,000 over the next five years for start-up needs such as fellowships and a major conference that will convene energy-efficiency experts from all over the world.



BENJAMIN FINKELOR
UC-Davis

"The Energy Efficiency Center's goal is to get energy-efficiency technology out of the research stage and into the market," explained UC-Davis Program Manager Benjamin Finkelor, who presented information about this new organization at CEE's Jan. 18 program meeting.

Starting at the foundation of the educational system, the center is aiming to groom a new generation of professionals to develop successful business models for delivering energy efficiency. According to the UC-Davis Web site,

"universities across the nation have paid relatively little attention to energy efficiency in any of its dimensions, ranging from technology development to building design to institutional barriers."

The director of the Energy Efficiency Center is Andy Hargadon, whose background includes not only engineering but management and business. Focusing on "technology transfer," the center will develop profitable business strategies and identify investors and customers. Initially work will concentrate in three areas: buildings, transportation, and agriculture and food processing.

"We'd love to engage external partners," Finkelor said. "We are looking for technologies that need help getting on track."

Members can get involved on several different levels. They can participate in the actual technology development, monitor activities of the Energy Efficiency Center and/or submit projects for development. Members can also help commercialize emerging technologies by running pilot programs and putting together case studies.

For further information, contact Benjamin Finkelor at bmfinkelor@ucdavis.edu or 503-752-7659.

ENERGY STAR Board Committee

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meet the specifications of a designated CEE tier and represent the subset of "super-efficient" products. Financial incentives above those offered for less efficient products would be a condition for use of the term.

BC Hydro, Efficiency Vermont, Pacific Gas & Electric, San Diego Gas & Electric and Southern California Gas have volunteered to pilot "Save More" in retail settings for products where CEE specifications exist and incentives for a CEE tier above ENERGY STAR are offered.

These pilots will be used to determine whether "Save More" conveys the intended message without confusion and increases local program effectiveness. While these pilots are running, EPA will continue to work with CEE and its members to explore other marketing strategies to promote super efficiency.

Water and energy workshop

CEE is also working with EPA ENERGY STAR and EPA Office of Water to conduct a one-day workshop for CEE members and water utilities in April. This workshop will identify potential

program models for collaboration and examine new areas where energy program administrators and water agencies can work together to conserve both resources. The focus is to examine existing efficiency programs where both measures are promoted or an added water or energy conservation component can readily be attached

Premium-Efficiency Motors Initiative to expand

Continued from page 8

is prudent to consider large motors on a case-by-case basis."

Another consideration in developing the recommendation was the difficulty of establishing a nationally applicable baseline for motors above 200 hp.

Unlike motors in the 1-200 hp range, there is no federal minimum efficiency standard for these motors. The *Guidance Specification* provides information about member approaches for establishing baseline efficiency as well as information on some common data sources on efficiency for motors in this size range.

The proposed *Guidance Specification* is currently being circulated among

without compromising the original savings goals.

Appliances, home energy and water audits, water- and energy-efficient new homes, commercial kitchens and commercial buildings are expected to be addressed. Contact John Taylor, CEE's ENERGY STAR liaison, at jtaylor@cee1.org for additional details.

motor industry stakeholders with final comments due by March 14.

The committee will consider all comments received and develop a final recommendation for consideration by CEE's Board of Directors.

In the second quarter of 2007, the committee is scheduled to begin exploring the inclusion of other motor categories, such as medium-voltage motors and special and definite-purpose motors, to the initiative.

For additional information or if you would like to participate in this project, contact Ilene Mason at imason@cee1.org.

A more detailed version of this story can be found on the CEE Web site (www.cee1.org).

First solid-state lighting competition produces four winners

Although the technology has great potential and significant advances have been made in the past few years, solid-state lighting (SSL) for residential applications remains very much a work in progress. Solid-state lighting includes both light-emitting diodes (LEDs) and organic light-emitting diodes (OLEDs).

One of the main challenges in the commercialization of SSL is that fixture manufacturers are not fully educated about how to take full advantage of its unique characteristics in their products.

Toward that end, the first *Lighting for Tomorrow* solid-state lighting prototype competition was recently completed, with the announcement of four winning designs last December.

Lighting for Tomorrow is a national lighting fixture design competition jointly managed by CEE, the American Lighting Association (ALA) and the Department of Energy (represented by Pacific Northwest National Laboratory).

The solid-state competition solicited lighting fixtures that use white LEDs as their sole light source. It encouraged fixture manufacturers to begin working with the technology and provided valuable technical feedback to all entrants.

Building awareness

"The industry is still learning how to use this technology," said CEE Senior Program Manager Rebecca Foster. "Right now, *Lighting for Tomorrow* is concentrating on building awareness and understanding in the market about what solid-state lighting can do, and where it might go in the future."

Manufacturers and designers were invited to submit SSL prototypes in several niche lighting applications, including under-cabinet, task and outdoor lighting. These niche applications were chosen because 1) they take advantage of the directional nature of LEDs, 2) the light source is relatively close to the surface being illuminated and 3) the potential for significant energy savings exists.

The competition encouraged and recognized innovation, lighting quality and energy efficiency in the use of



LIGHTING FOR TOMORROW SSL WINNERS

Manufacturer	Product name	Type	Total fixture input power
American Fluorescent (above left)	Diode 28	Under-cabinet	5 Watts
Lucere Lighting	Linear	Under-cabinet	18 Watts
Lucesco (above right)	Halley	Portable desk/task	19 watts (dimnable)
Progress Lighting	Lakeland	Outdoor	3.5 Watts

See www.lightingfortomorrow.com for photos and additional information.

SSL technology.

The winning entries were produced by American Fluorescent, Lucere Lighting, Lucesco and Progress Lighting. In addition, io Lighting, Albeo Lighting, American Lighting LLC and Osram Sylvania received honorable mentions.

Winners were displayed at DOE's annual Solid-State Lighting Workshop Jan. 31-Feb. 2 in Phoenix. These solid-state fixtures will also be displayed at other lighting industry events throughout the year, including LightFair International in New York City May 8-10.

LED design charette

In addition to the SSL competition, *Lighting for Tomorrow* organizers hosted a two-hour LED design charette at the ALA Annual Conference in Las Vegas last September. Manufacturers, manufacturer representatives and lighting showroom representatives attended.

The focus was on education and information exchange. Among the discussion topics were technical concepts, status of LED standards and test procedures, current applications for SSL and where it might be used in the future as the technology improves.

CEE is working with ALA and PNNL to

plan a similar workshop for the 2007 ALA conference. These activities should help prepare and encourage manufacturers to produce lighting products that meet consumer expectations and deliver energy savings to efficiency programs. With the rapid advances in SSL technology, the widespread adoption of these lighting sources may not be far off.

Niche applications

Today, SSL can be competitive in certain applications. While the higher first cost and lower light output mean that white LEDs are not appropriate for most traditional uses, their long life can be a big plus in applications where there are extended running hours and/or difficult access for replacements.

LEDs are also durable and resistant to damage from vibration, making them good candidates for outdoor applications and those that involve motion.

CEE's Residential Lighting Committee is monitoring and researching the solid-state lighting market, keeping members informed about the latest developments and potential program opportunities. For details, contact Rebecca Foster at rfoster@cee1.org.

Lighting for Tomorrow 2007 is launched in Dallas

With separate events in place for compact-fluorescent fixture families and solid-state lighting fixtures, *Lighting for Tomorrow 2007* was officially launched Jan. 19 at the Dallas Lighting and Accessories Market.

Lighting for Tomorrow is organized by CEE, the American Lighting Association (ALA) and the Dept. of Energy (represented by Pacific Northwest National Laboratory). Nearly two dozen CEE members in the U.S. and Canada combined to pledge approximately \$150,000 to sponsor the 2007 competition.

Since its inception in 2002, the fixture design component of *Lighting for Tomorrow* has pulled new high-efficiency residential lighting products into the market.

For the first three years, the competition sought only the fixtures using pin-based compact fluorescent lamps (CFLs); for the first time in 2006, a separate competition for solid-state lighting was held.

Beginning in 2005, *Lighting for Tomorrow* required manufacturers to submit entries of fixture "families" for indoor and outdoor lighting products. Similar to last year, a large number of fixture family winners will be featured in the 2007 *Lighting for Tomorrow* Yearbook that includes color photographs, program information, technology updates, and other useful information for consumers, retailers and builders.

CEE lighting workshop examines research needs of members

Due to the significance of commercial and residential lighting energy use and the need to explore long-term energy savings opportunities for member programs, CEE turned its focus to lighting-efficiency research during a recent workshop.

The event was held Jan. 16 in Long Beach, Calif., one day prior to CEE's Program Meeting.

There were two goals – one specific and one general – for the workshop:

- 1) Provide useful input to those involved in developing the lighting research agenda for the California Energy Commission's Public Interest Energy Research (PIER) program
- 2) Initiate discussion with all lighting stakeholders about the efficient use of limited research funds

The day-long session was attended by a wide array of lighting stakeholders, including seven CEE members, four manufacturers, three trade associations, DOE (represented by Pacific Northwest

'We wanted to provide a forum to discuss what research areas were being covered, where the opportunities for collaboration lay and how duplication of effort could be avoided.'

Susan Loucks
CEE

National Laboratory), EPA, the California PUC and the California Lighting Technology Center.

Prior to the workshop, CEE gathered information about the lighting research projects and goals of 20 organizations from the above groups.

This information was compiled into a summary-type report and distributed to the participants. The strategy behind this report was to create a catalog of lighting research programs to identify gaps and other areas of importance.

"We wanted to provide a forum for the



IMPORTANT DATES IN 2007

- | | |
|-------------------|--|
| March 31 | Intent-to-submit forms due |
| May 31 | Prototype or production-quality fixtures due |
| Sept. 9-11 | Winners to be announced at the ALA Annual Conference in San Antonio, Texas |

The Yearbook will be distributed to lighting showrooms and homebuilders across the U.S. and Canada.

The deadline for entries is May 31. Winners will be announced during an award ceremony at the ALA Annual Conference in San Antonio Sept. 9-11. For guidelines and rules for the 2007 competition, see www.lightingfortomorrow.com.

organizations involved in efficient lighting research to discuss what research areas were being covered, where the opportunities for collaboration lay and how duplication of effort could be avoided," said CEE Program Associate Susan Loucks, who co-chaired the workshop with Senior Program Manager Rebecca Foster.

"We found that a great deal of the research about efficient lighting was difficult to access and use, and we want to further engage the group on that issue."

Michael Seaman of the California Energy Commission unveiled plans to work with the California Lighting Technology Center to host biannual meetings – one on the west coast, one in the east – that would share lighting research.

A planning committee made up of CEE workshop participants will help create the agendas for these meetings.

For further information, contact Susan Loucks at sloucks@cee1.org.

Super-Efficient Home Appliances Initiative gets an overhaul

Although the overall goals of CEE's Super-Efficient Home Appliances (SEHA) Initiative remain essentially the same, the initiative is undergoing a major overhaul. Changes to the SEHA Initiative were approved by the CEE Board of Directors on Jan. 19.

The SEHA Initiative – which addresses residential clothes washers, dishwashers, refrigerators and room air conditioners – has two primary goals:

- Assist energy-efficiency program administrators in their efforts to increase the sale and market share of super-efficient appliances
- Complement the efforts of the ENERGY STAR program to increase sales and market share of ENERGY STAR-qualified appliances.

As part of the revision, CEE's work with residential clothes washers – formerly a stand-alone initiative – will be incorporated into SEHA. Thus CEE's activities with residential appliances will now be incorporated under one umbrella. This change helps prevent the duplication of efforts that could result from having two separate initiatives.



It also recognizes a shift in how efficiency program administrators view the appliance market. Although residential clothes washers continue to be important components of appliance programs, many CEE members consider clothes washers to be part of broader appliance efficiency efforts.

In addition, the initiative description is being revised while market details and other pertinent program considerations will be updated. This information has not been revised since 1998.

The SEHA strategy includes efforts to keep CEE's residential appliance efforts as consistent as possible with the ENERGY STAR appliances program and to continue to evaluate residential appliance efficiency specifications. These specifications, according to the initiative description, should enable efficiency program administrators to promote residential appliances cost-effectively and provide manufacturers with a platform to market their most efficient products of all sizes.

In the coming months and years, CEE expects to continue working with water-efficiency stakeholders, particularly in the clothes washer and dishwasher product areas. CEE will also explore potential work with appliance retailers, as well as other opportunities, like appliance recycling.

Participation requirements for the SEHA Initiative have not changed. As before, participants must support the ENERGY STAR appliances program while offering financial incentives and/or implementing an educational (or other type) promotional program for SEHA-qualified appliances.

DOE announces winners of Reflector-CFL competition

New lamps provide efficient downlighting and address issues about heat buildup

CEE members interested in helping customers increase the efficiency of their existing recessed downlights now have more robust products to promote in their programs.

The U.S. Department of Energy recently announced eight winners in Phase 2 of its R-CFL Technology Innovation Competition, which is being conducted with assistance from Pacific Northwest National Laboratory.

The winning compact fluorescent reflector lamps are manufactured by GE, Osram Sylvania, and Philips. The lamps passed tests that simulated the environment typically found in recessed downlights.

As part of the competition, each lamp had to maintain acceptable light output levels and reach an average rated life of at least 6,000 hours in high-temperature testing.

Tests of previous prototypes have raised concerns about heat buildup affecting the performance and longevity of the lamps in recessed fixtures located in insulated ceilings.

The eight R-CFLs join other models by Philips and Feit that were identified as winners during Phase I of the competition.



Two of the winning R-CFLs in the DOE competition are shown above.

"These screw-based R-CFLs are an easy and economical replacement for incandescent reflector lamps," said Linda Sandahl, Pacific Northwest National Laboratory's project manager of the R-CFL Technology Innovation Competition.

"They use two-thirds less energy, last five times longer, produce similar light levels, and have excellent color rendition."

For further information about the competition and specific model numbers for the winning lamps, see www.pnl.gov/rlamps.

Additional Phase 2 models are still undergoing testing, with more winners expected to be announced in spring 2007.

CEE and ACCA discuss market introduction strategies for QI spec

CEE and the Air Conditioning Contractors of America (ACCA) are discussing possible terms for a licensing agreement that would allow CEE and its members to use ACCA's specification for the quality installation of HVAC equipment.

The ACCA specification is expected to be finalized in March 2007. With a licensing agreement in place, CEE members would be able to use the technical requirements of the ACCA specification without special permission or additional cost.

These technical requirements can be utilized in HVAC programs to define the minimum requirements for an energy-efficient installation.

When the federal minimum standard increased to SEER 13 in 2006, the potential energy savings from more efficient HVAC equipment diminished; many members feel quality installation (QI) is a better opportunity for optimizing system performance – and saving energy. The ACCA specification would provide a technical standard that has universal support, particularly among HVAC contractors.

The specification addresses installation practices that involve sizing/selection, refrigerant charge, airflow and ducts/distribution.

The ACCA specification could also be integrated into the ENERGY STAR® program, which is hoping to launch a quality installation program in 2008.



In 2006, Pacific Gas & Electric hosted a pilot for ENERGY STAR, testing use of the ACCA specification by local contractors. Southern California Edison and TXU Electric Delivery have agreed to run ENERGY STAR pilot programs in 2007 to test the feasibility and cost of meeting the ACCA specification.

These pilots shall also begin to ascertain the value of the ENERGY STAR brand in the promotion of QI.

The final hurdle for completion of the ACCA specification is recognition by the American National Standards Institute (ANSI). Since there can be only one ANSI standard for a given technical specification, ANSI recognition would establish the ACCA quality installation specification as the only standard of its kind.

ANSI, a nonprofit organization, is the primary administrator and coordinator of the United States private sector voluntary standardization systems.

If and when ANSI recognition is awarded, CEE's Residential HVAC Committee will review the technical requirements of

the specification. If appropriate, the committee will then recommend that the CEE Board of Directors incorporate the technical requirements of the ACCA specification into CEE's Residential HVAC Initiative.

Should the Board elect to adopt the specification, potential next steps to advance market acceptance might include press releases to trade journals, wide distribution to HVAC installation stakeholders and the development of recommended guidelines for verifying adherence to the QI specification.

As a member of the ACCA Quality Installation Committee, CEE's John Taylor has participated in the specification development process over the past 18 months to help ensure it would further CEE member program objectives. Five other CEE members are also serving on the committee, further bolstering its ability to support voluntary efficiency programs.

There is widespread agreement among CEE members that one of the major barriers to quality installation is the lack of clear guidelines supported by key industry stakeholders. Members also see great value in using the ENERGY STAR brand as a symbol and marketing platform for QI programs.

Thus the finalization of the ACCA specification could be a significant step in the development of a national approach to quality installation.

CEE raises the bar for high-efficiency central air conditioners

On Jan. 19, the CEE Board of Directors approved an addition to the Residential Central Air Conditioner and Air Source Heat Pump Initiative specification. Effective April 1, 2007, the CEE specification will now include a Tier 3 (Advanced Tier) for split-system air conditioners.

This tier is designated "Advanced" to acknowledge that these systems are not commonly available, but are technologically feasible in a complete range of sizes. Minimum requirements for this tier are SEER 16, EER 13.

"In promoting this new tier, CEE members will continue to focus the HVAC industry's attention on supplying systems that save energy during peak demand," explained CEE Residential Program Manager John Taylor.

The reference level for federal tax credits under EPAct 2005, which had been established at CEE's Tier 2 (15

SEER, 12.5 EER), will remain unchanged through 2007.

In related news, the Air-Conditioning and Refrigeration Institute (ARI) is now listing precise EER values for all HVAC equipment on the CEE HVAC Directory and on the ARI Certified Performance Directory. ARI has not made this information publicly available since 2002. Precise EER values for all HVAC systems should be a significant boost for evaluation of program impacts.

ARI's willingness to provide the data on the CEE HVAC Directory underscores the success of CEE's residential HVAC initiative. "It's great for efficiency program administrators who are determined to save energy during peak," said Taylor. "It should result in increased promotion of high-efficiency HVAC systems as they are able to claim more precise deemed savings and will be able to calculate an accurate baseline rather than use conservative estimates."

Consumer Electronics Committee explores new products

CEE's Consumer Electronics Committee continues to explore the energy-saving potential of new product areas.

Since its formation in June 2006, the committee has developed comments on the ENERGY STAR® specifications for digital-to-analog converter boxes (DTAs), computers and televisions.

In anticipation of the transition from analog to digital broadcasting on February 18, 2009, the ENERGY STAR DTA specification took effect immediately upon the release of the final version, on January 31. CEE members are now considering whether and how to address DTAs in their programs and CEE will continue to support their efforts.

Additionally, CEE has been monitoring the development of a federal subsidy coupon program for DTAs, which the National Telecommunications and Information Administration (NTIA) will administer.

In a joint proposal to the NTIA, the Consumer Electronics Association (CEA), Natural Resources Defense Council and others recommend the inclusion of an energy-efficiency requirement in the federal coupon program.

In December 2006, CEE submitted a letter in support of this proposed requirement. CEE's Consumer Electronics Committee continues to monitor the federal subsidy coupon program development.

CEE members are also considering how to incorporate the revised ENERGY STAR computer specification into their programs. A recent Pacific Gas & Electric study rated computers, along with televisions, as the highest priorities in consumer electronics.

The new computer specification, which will take effect on July 31, 2007, includes a requirement for 80 percent efficient internal power supplies, a measure that CEE supported in its comments to EPA.

Potential program opportunities

- Televisions
- Digital-to-analog converters and other set-top boxes
- Computers and monitors

Of all consumer electronics products, televisions represent one of the largest percentages of electricity consumption. According to the 2007 Energy Information Administration (EIA) Annual Energy Outlook, in 2005 televisions accounted for approximately 14 percent of miscellaneous residential electricity use, and 4 percent of total residential electricity use.

With screens getting larger and TVs operating for more hours each day, it appears that this trend will persist. CEE will continue participating in the ENERGY STAR television specification revision process and assisting members in their efforts to promote energy-efficient televisions.

Over the past months, CEE has also strengthened its relationship with the consumer electronics industry by working with the CEA. Marc Hoffman, CEE's Executive Director, attended January's Consumer Electronics Show in Las Vegas and participated in an energy-efficiency panel.

At the show, the CEA unveiled a comprehensive energy-use study that covers all consumer electronics except digital televisions. A supplementary study on digital televisions is expected once a revised television test procedure has been finalized.

At the Market Transformation Symposium in March, Doug Johnson of the CEA and EPA/ENERGY STAR's Katharine Kaplan will speak about the proliferation of consumer electronics in the home.

For further information about CEE's Consumer Electronics Committee, contact Erica Schroeder at eschroeder@cee1.org.

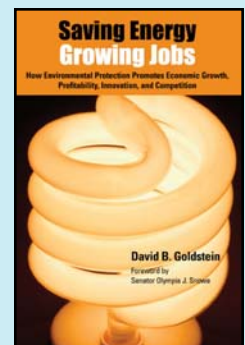
Goldstein book links environment and economy

David Goldstein, Energy Program Director at the Natural Resources Defense Council and currently Vice Chair of the CEE Board of Directors, strongly believes that a healthy environment and strong economy are highly compatible objectives.

In fact, he's written a book, *Saving Energy, Growing Jobs*, that explains how and why this can happen.

In the book, Goldstein ...

- profiles the unexpected success of early energy regulations
- shows how markets actually work and how they fail
- exposes both the myths of environmentalists and anti-environmentalists
- provides a model for well-designed environmental policies
- offers guidelines for transforming the current political debate
- includes suggestions for implementing a combination of incentives and regulations to speed the process



Saving Energy, Growing Jobs: How Environmental Protection Promotes Economic Growth, Competition, Profitability and Innovation by David Goldstein is available from on-line and traditional booksellers, and directly from the publisher (www.baytreepublish.com).

New aeration monitor: potential for big savings in wastewater plants

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efficiency, the effectiveness of the aeration system can be monitored and an appropriate maintenance schedule can be determined.

Progress in technology

"The original prototype [of the off-gas analyzer] was large, cost about \$20,000 and was difficult to operate," said Rosso. "The current prototype is the size of a shoe box, costs \$2,000 and is easy to use. You can easily save 10-30 percent of energy costs. You can save the \$2,000 investment in the first month.

Rosso and Larson claim that monitoring the oxygen transfer each week can optimize efficiency while maintaining the same level of treatment. So what's slowing down the commercialization of this device? Rosso thinks the split incentive is an important barrier.

"People who operate the equipment have no incentive for energy efficiency," he said. "The people working downtown [in municipal offices] pay the energy bills and have the incentive to take action, but don't know how to do it. Somehow, we need to link these two groups."

CEE's initiative

In many respects, the CEE Municipal Water and Wastewater Initiative was developed to help position efficiency program administrators as the link between facility operators and municipal decision-makers. Launched in 2005, CEE's initiative sends a strong message to the water and wastewater industry (and their suppliers) that programs are organized and actively supporting energy efficiency in this sector.

At the same time, CEE's ongoing support for the initiative provides members with the opportunity to increase program effectiveness through greater communication, coordination and development across similar North American programs. Presentations at the CEE meeting on the off-gas monitor and SCE's pump test program (page 9) are good examples.

Members currently address water and wastewater efficiency projects through their custom programs, new construction projects and through standard offer/standard performance contract programs.

During a breakout session, members expressed interest in a number of opportunities to promote efficiency in wastewater aeration systems, including encouraging customers to clean their tanks on a regular basis (at least every 24 months); to use oxygen-transfer efficiency as an energy performance indicator and to develop guidelines for programs on aeration efficiency improvement opportunities.

Commercialization of the instrument

Finally, the group was very interested in the future availability of the off-gas analyzer technology. According to Pramod Kulkarni of the California Energy Commission, the device is scheduled for demonstrations at sites in two major utility service areas.

'The original prototype of the off-gas analyzer was large, cost about \$20,000 and was difficult to operate. The current prototype is the size of a shoe box, costs \$2,000 and is easy to use.'

*Diego Rosso
UCLA Civil and Environmental Engineering Department*

"The demonstrations [are expected to] validate the energy savings over a span of few months," said Kulkarni.

Following the demonstrations, he said, the following steps will be taken:

- Based on the feedback from demonstration sites, develop a final commercial product.
- Ask for bids to mass manufacture the product, select manufacturers.
- Utilities develop rebate programs around the energy savings.
- Active promotion through industry newsletters, energy-saving forums and other venues.

"Program administrators have an important opportunity to educate their wastewater customers about oxygen-transfer efficiency as key performance indicator of their aeration systems," said CEE Industrial Program Manager Ted Jones.

"Moving forward, the Water and Wastewater Committee plans to monitor these efforts to commercialize the technology. The next step would be to begin development of program guidelines on aeration-efficiency opportunities."

SCE's pump-testing program

Continued from page 9

program, which is funded for \$1.7 million per year and includes 17 full-time employees, tests about 4,400 pumps annually. The tests identify 25-33 million kWh of potential savings a year.

"It's a very popular program," said Suzuki. "There is a waiting list for pump tests and a shortage of qualified pump testers. It's cost effective [for the facility] and by targeting market segments, we can realize great energy savings potential."

CEE Program Manager Ted Jones noted that SCE's experience with improving pump performance is of great value to CEE members.

"Later this year CEE's Water and Wastewater Committee plans to develop a program guidance document on water-pumping efficiency measures," said Jones.

"It will be based on successful programs, such as SCE's Pump Testing Service."

Three new staff members at CEE

CEE recently added three new program staff members: Jason Erwin, Joanne O'Donnell and Johanna Krouk.

Erwin and O'Donnell joined CEE in December. Erwin, a Senior Program Manager, is the new team lead for CEE's commercial programs, focusing on whole-building energy efficiency.

Previously, he had worked as an Associate for Booz Allen Hamilton, helping develop energy and environmental policy and energy management programs for government clients.

Erwin is a LEED Accredited Professional and holds a Masters degree in Environmental Science from Lund University (Sweden) and a Bachelors degree in Natural Resources from Cornell University.

As a Natural Gas Program Associate, O'Donnell supports CEE's expanded gas-efficiency efforts, including the exploration of high-efficiency water heating technologies.

She holds three degrees from Boston University: a Masters in Energy and Environmental Analysis, and Bachelors degrees in Environmental Analysis and Policy, and Political Science.

Krouk came on board in January as a Research Assistant after working as a contractor since July. She supports



JASON ERWIN



JOANNE O'DONNELL



JOHANNA KROUK

CEE's evaluation work, including member data collection and maintenance of the Market Assessment and Program Evaluation database.

Krouk also provides support for CEE's research needs in all other areas. She holds a Bachelors degree in Anthropology from the University of Massachusetts-Amherst.

EPA, DOE protect ENERGY STAR integrity

Since its inception more than 10 years ago, ENERGY STAR® has become a critical part of energy-efficiency program development and promotion. To ensure continued promotion of ENERGY STAR by CEE members, the brand must enable administrators to further program goals and maintain relevance and integrity in the marketplace.

Toward that end, the ENERGY STAR Program has instituted several policies and procedures for ensuring brand integrity. EPA and DOE have released an 87-page document entitled *Maintaining the Value of ENERGY STAR*.

It includes information about updating specifications, industry partnerships, the testing of products, assessing consumer experiences with the label, and logo guidelines.

The report also addresses steps taken by ENERGY STAR to obtain market share data (e.g., manufacturer shipment data and retailer sales data) through enforcement of Partnership Agreements. Access to market share tracking data remains a top priority of CEE members.

This report was a direct outcome of the CEE Board Committee's work with ENERGY STAR to document the procedures currently in place to maintain brand integrity (see related story on page 12).

To learn more about the report or to obtain an electronic copy, contact CEE Residential Program Manager John Taylor at jtaylor@cee1.org.