

## 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](mailto: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](http://www.cee1.org)).