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Study Benchmarks Energy Use
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BERKELEY, CA—Cleanroom operators plan to reap impressive energy and money savings once researchers at Lawrence Berkeley National Laboratory complete their year-long program in benchmarking cleanroom energy use.

Dubbed the Energy Efficient Buildings for High Tech Industry program, the benchmarking effort will provide metrics that cleanroom operators can use for comparing their energy use to other cleanrooms. Berkeley Laboratory experts will collect energy-use data from facilities with cleanrooms during the next year.

For example, the amount of energy used for a building's cooling system—chillers, cooling towers and associated pumps—will be monitored and compiled into a benchmark, such as kilowatts per ton. The pro-gram, funded by the Pacific Gas and Electric Company, kicked off in January and is slated for completion in January 2001.

'Cleanroom operators know their cleanrooms are expensive to operate," says Dale Sartor, applications team leader at Berkeley Laboratory. 'You can compare BTUs or dollars per square foot in other buildings, but when you start doing that in cleanrooms it's virtually meaningless. We have to peel that onion a little bit and come up with metrics that will allow one cleanroom to be compared to another."

Sartor says that the metrics will allow cleanroom owners to assess savings in energy use. Cleanroom architects and system designers agree that benchmarking energy use is helpful. 'It could be a very practical approach that could lead to some immediate energy conservation," says Michael O'Halloran, director of technology at IDC in Portland, OR. 'Owners could benchmark themselves and know quickly if their cleanroom velocities were too high and make an adjustment and see a gain," he says.

Although benchmarking cleanroom energy use has several advantages for cleanroom owners, some microelectronics manufacturers are worried that the metrics might be used for new energy-use standards or to eliminate a competitive advantage. However, Sartor is confident that Berkeley Laboratory's benchmarking program will be used only to inform cleanroom operators where they stand and to identify high-value research areas.

Semiconductor manufacturers do not want to be saddled with standards or requirements that would slow down their production especially because high yield is a key to revenues. O'Halloran insists that energy reductions can be most effectively achieved through a comprehensive analysis of the entire facility and not just by optimizing one part of the system.

Information on energy efficiency will be presented at a special panel session 'Improving cleanroom energy efficiency" during CleanRooms East 2000 in Baltimore. See www.cleanrooms.com for information on attending.

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