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10 Things You Can Do Right Now To Be More Green

Free & Low-Cost Ways To Reduce Energy Consumption

by Julie Knudson

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Data centers typically consume more power than other departments, and technology's increasing presence will drive their energy use even higher. "The demands on the data center weren't always what they are today, and that demand will continue to increase exponentially," says Julie Brown, marketing manager at Server Technology (www.servertech.com). She notes that energy rates are increasing along with use, prompting companies to adopt aggressive energy reduction plans. "Power is more expensive, and data centers need to find ways to be more efficient," she says.

Key Points

- Look for solutions that save power on both the equipment side and the building side.
- Make sure tile placement, lighting use, and HVAC requirements match today's needs.
- Analyze consumption patterns to identify the best power reduction opportunities.

Although efficiency initiatives are growing, budgets are not. This leaves data center managers searching for inexpensive ways to reduce consumption. As Janet Ferry, director of data center business development at Bluestone Energy (www.bluestoneenergy.com), points out, "Building a new data center—even redesigning an existing data center—is cost-prohibitive for a lot of companies." She encourages IT groups to rethink what's possible and approach problems creatively.

Below are 10 no- and low-cost ways that data center managers can make a quick dent in their energy consumption and move down the path to a greener tomorrow.

Air mixing. Separating hot and cold air is critical for optimal power consumption of servers as well as any CRAC or HVAC units supporting the area. "Focus on eliminating some of the mixing of the hot and cold air, so it allows you to use your equipment more efficiently and reduce some power consumption," Ferry suggests. Establish hot and cold aisles and use blanking panels, kick plates, and curtains whenever possible.

Manage your airflow. While you're in hot/cold mode, conduct a quick audit of your data center and see where the cold air is blowing—if it's pumping into areas where your servers are exhausting warm air, then it's time for some changes. Direct cool air to the intake side and set up your HVAC system to pull out the warm exhaust air.

Maintain proper floor tile placement. Floor tiles in data centers are thoughtfully placed initially and then often never move again. Are your perforated tiles directing airflow to the right places? Are blanking panels placed so they're contributing to your hot/cold isolation efforts? Raised floors have moveable tiles for a reason—use them.

Rethink temperature and humidity specifications. In most cases, it's no longer necessary to set your CRAC to "frigid." Data center operators are beginning to design environments that can handle higher inlet temperatures, some up to 95 degrees. Depending on your region's ambient humidity, you may also be able to put an end to energy-sapping dehumidification efforts.

Put lighting on a motion sensor. Data center lights are usually on, even when no one's home. "Data centers operate 24/7, but unless people are actively involved in a project, they're unoccupied a good portion of the time," says Mike Bailey, PE, director of engineering at Ecos (www.ecosconsult-ing.com). Sensors have improved over the past few years, and placing an inexpensive, off-the-shelf motion sensor on your data center's lighting circuit will help curb unnecessary energy use without irritating occupants. Remember to leave a few fixtures on for emergency egress, so the space is never completely dark.

Check out available incentive programs. Incentive programs exist in a range of flavors, and most utilities can help you determine the potential savings based on your current and anticipated usage patterns. Be aware that some utilities don't truly understand the needs of data centers, especially in regions where heavy IT demands are the exception rather than the rule. If you're not getting the help you need, consider contacting an experienced energy consultant to determine which programs you qualify for.

Partner with your facilities group. Energy efficiency efforts may be a tough sell internally for data center managers, as Bailey explains: "Only about 10 to 15% of IT managers pay the electric bill out of their budget, so even though energy savings are good for the business overall, it's all pain and no gain from the IT perspective." Partnering with facilities is an important first step to spreading labor and expenses across the organization. You'll also gain the HVAC expertise of your building engineers in the deal.

Implement monitoring. A well-planned monitoring system shows where your energy is going. "It gives the data center manager the data he or she needs to make informed decisions on how to improve power efficiency, reduce costs, and go green," Brown says. "Where data center managers may have monitored power in the past, there's a need now to measure to the most accurate level for power management—at the cabinet power distribution unit (CDU) level and down to the per-outlet level," she says.

Planning for future needs is just as important as evaluating current usage. Donald Klein, vice president of business development and marketing at Modius (www.modius.com), says, "The first step is to get organized about data collection. That way, as you put in place future improvements, you know what impact they're having on your facility." Be sure to collect information from your power and cooling chain as well as chassis data from the racks themselves.

Increase server efficiency. Klein notes that while replacing servers is hardly a low-cost option, each upgrade you make will have a cumulative effect. "By upgrading your older volume-based servers to newer-generation servers, you're going to get a much better efficiency ratio," he says. Look for units with low idle power usage. P

Top Tip: Remove Dead Equipment

Ridding yourself of dead equipment often improves efficiency twice—once when you stop powering the unused unit and again when you stop cooling it. But even though flipping the power switch on dead servers seems like the simplest of tasks, the barrier here is often time. "It takes time to verify that you've transferred everything over and that there isn't any legacy software still on there," says Mike Bailey, PE, director of engineering at Ecos (www.ecosconsulting.com). If you can free up the labor to zap these power suckers, you'll move a lot closer to being green.

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