

Energy Savings Solutions for Data Centers and IT Departments.

Fact

The Environmental Protection Agency reports that by 2011, under current efficiency trends, data centers in the United States will consume more than 100 billion kilowatt hours per year, representing an annual electricity cost of \$7.4 billion.

Reducing the energy needed to run and support information technology systems helps IT departments contribute to the business' financial performance.

ENERGY ASSESSMENTS LEAD TO SAVINGS

While best practices in data center energy management are growing as fast as the innovations in technology themselves, industry experts agree on one thing: An energy assessment can identify how to manage energy costs associated with this critical area of operations.

An energy assessment looks at your building's equipment controls and energy supply sources in relationship to your data center, IT equipment and infrastructure. Typical energy assessments consider:

- How server equipment is configured and racks are organized; how warm air generated by the equipment moves in and around the racks; and how cool air circulates throughout the space as a whole.
- How UPS systems are configured and operated, and the value of installing more efficient systems.
- How desktop systems such as computers and monitors are managed.

The assessment should also include the cooling plant, air-management controls and lighting. Ultimately, it should recommend a plan for managing your data center's energy costs today — and mitigating rising costs in the future.

IMPLEMENTING ENERGY RECOMMENDATIONS PAYS OFF

In 2009, CDW released its “Energy Efficient IT Report” that found 52 percent of organizations actively working to reduce energy consumption have cut IT energy costs by 1 percent or more. Based on actual implemented projects reported by the U.S. Department of Energy's Industrial Technologies Program, the ranges of realized benefits were as follows:

Energy Savings	1.5 to 3.1 GWh
Cost Savings	\$181,000 to \$343,000
Payback	1.2 to 2.2 years

Your business can use the same tactics those companies employed to create an energy efficiency program for your computer operations.

IDEAS TO HELP YOU MANAGE YOUR ENERGY USE

START AT THE BOX

Server virtualization saves on physical space, power consumption and heat output by consolidating physical servers that are in partial use.

- Server virtualization can help reduce energy costs by as much as 80 percent.

MANAGE YOUR COMPUTER POWER

Personal computers and monitors can account for 10 to 20 percent of total building power use. Take advantage of new desktop energy-management software designed to better manage power settings. Implement ENERGY STAR® recommendations for desktop settings to start saving immediately.

- Set system standby or hibernate 30 to 60 minutes after inactivity.
- Set monitors to sleep mode after 5 to 20 minutes and disable screen savers.

IMPROVE AIRFLOW AND HVAC EFFICIENCY

HVAC equipment greatly impacts your data center’s energy use and performance. Optimizing airflow throughout the equipment racks is critical to managing temperatures and creating efficiencies with the cool air supplied by your HVAC units.

- Raise the data center temperatures to the ASHRAE- and manufacturer-recommended levels.
- Check the placement of air-supply vents to ensure airflow is efficient and adequate for operations.
- Install air handlers and economizers to help increase airflow and exchange during peak periods of computer and server equipment use.
- Add variable speed drives (VSDs) to HVAC equipment to better match supply with demand.

TURN DOWN THE LIGHTS

Lighting in server rooms, computer rooms and other IT areas is often inefficient and unnecessary, which increases costs and adds to the heat output.

- Install high-efficiency overhead fluorescent lighting.
- Convert exit signs to LED signs and de-lamp any unused lighting.
- Install sensors and timers to automatically turn off lights when unneeded.

CONTROL YOUR ENERGY USE

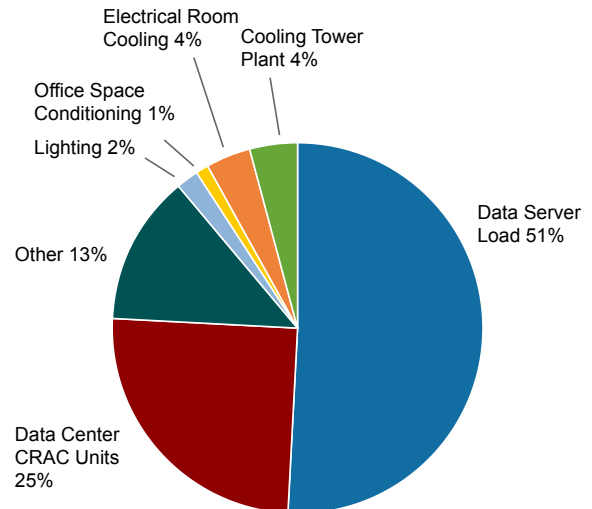
Implementing building energy-management systems — programmable thermostats and lighting, occupancy and daylight sensors — can significantly optimize your building’s energy performance.

- Talk with your building manager and ask to schedule an energy assessment.
- Take advantage of APS incentives for equipment upgrades to help lower your energy use.

TRACKING CONSUMPTION

New tools are available to evaluate energy efficiency opportunities including the DC Pro Software Tool Suite, developed by the DOE’s Industrial Technologies Program, and Microsoft’s Green IT Solution Calculator.

PERCENTAGES OF USE IN DATA CENTER (TEST CASE)



Tschudi, William, P.E. "Data Center Assessments to Identify Efficiency Opportunities" Lawrence Berkeley National Laboratory, U.S. Department of Energy. November 2008.

START SAVING WITH APS REBATES

High-efficiency HVAC, lighting and control equipment may qualify for Prescriptive incentives that pay rebates for:

- Energy-efficient AC units
- Air- and water-cooled chillers
- Air economizers for air-cooled AC units
- Programmable thermostats
- Variable Speed Drives (VSD)
- Energy-efficient lighting

Server virtualization and desktop energy-management software are eligible for rebates under the Custom incentives.

Contact Us to Get Started

Visit aps.com/businessrebates or call 866.277.5605