



CELEBRATING
20 YEARS OF
ENERGY STAR



Product Retrospective: Computer Power Management

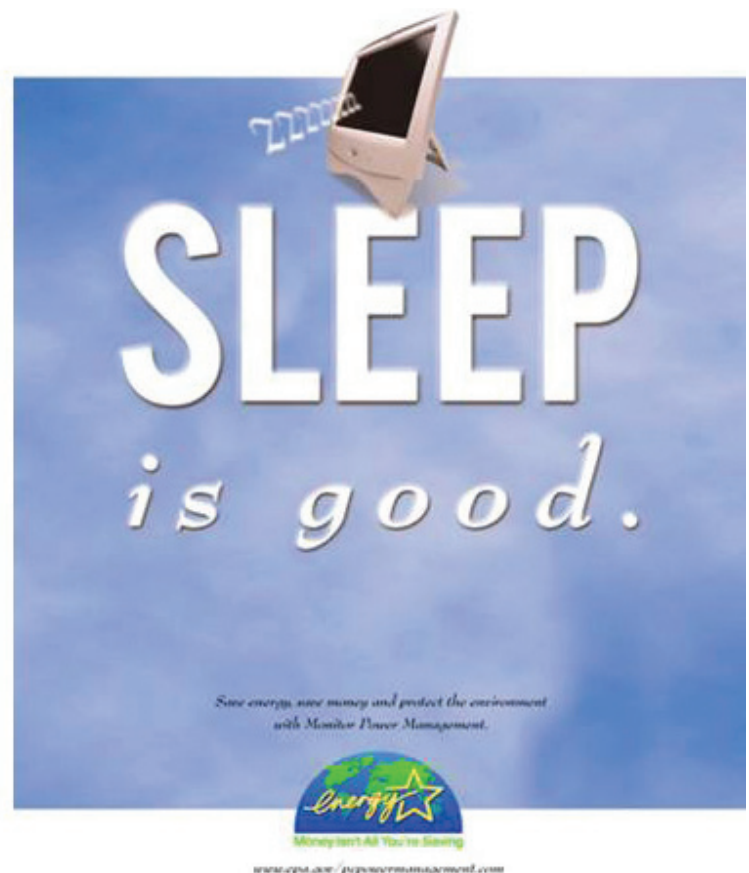
Since 1992, ENERGY STAR qualified computers and monitors have had the ability to go into sleep mode, powering down after a period of inactivity. Unfortunately, as corporations began managing computers through centralized networks and computer operating systems became more complex, it became apparent that these features were not being used extensively and, in some cases, were disabled. The ENERGY STAR promise of saved energy and environmental protection was not being fully realized. In 2001, Lawrence Berkeley National Laboratory estimated that only 56 percent of personal computers had power management settings on monitors activated.¹ Key barriers included lack of understanding about the importance of power managing office equipment, as well as inconvenience—it was difficult for network administrators to easily enable sleep settings across their organizations.

To tackle these challenges, the U.S. Environmental Protection Agency (EPA) launched the *Million Monitor Drive* campaign in 2001, focusing on monitors because they generally consumed more energy than computers and because IT managers were more amenable to power managing them. The campaign included public events, media outreach and direct outreach to large, computer-intensive organizations. The goal was to activate the sleep setting in one million monitors the first year. The campaign went a step beyond typical program offerings by providing technological solutions—a free software tool developed by the U.S. Department of Energy (DOE) called *EZ Save* that allowed network administrators to manage power settings from a central server and companion, web-based software, *EZ Wizard*, which allowed individuals to activate monitor power-saving features in mere seconds.

Offering a set of “Sleep is Good” themed materials to help educate corporate executives, IT managers and computer users, the ENERGY STAR *Million Monitor Drive* gathered pledges to change from a wide range of organizations: large corporations such as Ford Motor Company, General Motors, General Electric, Wells Fargo, Citigroup and Boeing; schools and universities including Fairfax County public schools in Virginia, New York City Department of Education and Harvard University; and more than 50 state, county and municipal governments across the nation. Less than four years later, 6.4 million monitors had been power managed, saving an estimated 660 million kilowatt-hours (kWh), and significantly exceeding campaign goals.

In 2008, this effort evolved into the *Low Carbon IT* campaign, with a focus on computer power management and other IT equipment. The ENERGY STAR website became a hub of technical information about power management.

Getting network administrators to manage the power-saving features of computers proved more challenging. EPA developed additional software, *EZ GPO*, to allow network administrators to centrally



manage sleep settings for both computers and monitors, but the technical solution was only partially successful due to operating system limitations. Fortunately, the campaign continued to make national headlines and captured the attention of Microsoft executives, including Microsoft Chairman, Bill Gates. EPA and Microsoft discussed the obstacles to broad power management, and Microsoft resolved many of the outstanding technical issues in updated versions of Windows. Momentum grew in other ways. Entrepreneurs saw an opportunity with energy management and formed more than a dozen private software companies, offering technical assistance and power management solutions for organizations. Utility programs began to offer incentives for organizations to power manage their IT equipment, and in 2007, President Bush issued an Executive Order requiring that all federal agencies power manage their computers and monitors.

Today, approximately 95 percent of office monitors² and 25 percent of office desktop computers³ have power management features enabled, saving more than 10 billion kWh per year and preventing greenhouse gas emissions equivalent to those from 15 million vehicles.

ENDNOTES

¹ Webber, C.A., Roberson, J.A., Brown, R.E., Payne, C.T., Nordman, B., and Koomey, J.G. (2001, September). Field Surveys of Office Equipment Operating Patterns (LBNL-46930). Berkeley, CA: Lawrence Berkeley National Laboratory. Retrieved from <http://enduse.lbl.gov/info/LBNL-46930.pdf>.

² Based on U.S. EPA calculations.

³ Lawrence Berkeley National Laboratories, U.S. EPA, Climate Savers Computing Initiative, and The Cadmus Group, Inc. (2011). Summary of Workgroup Findings: Estimated U.S. Enabling Rates of Computer Power Management in the Non-residential Sector.



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