



PC Power Management and the ENERGY STAR Low Carbon IT Campaign: Energy Savings Sitting on Every Desk

Steve Ryan, US EPA Energy Star Program



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Today's Agenda



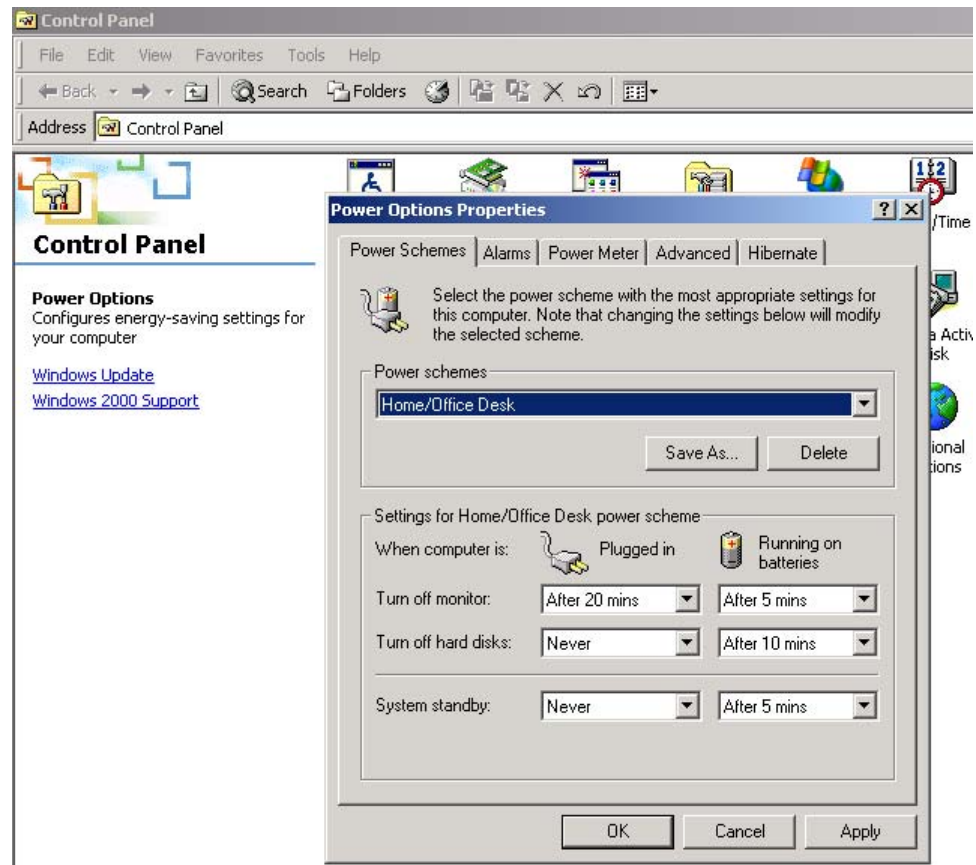
1. What is power management?
2. Putting computer power management into context
3. ENERGY STAR: minimizing computer electricity use
4. Implementation challenges
5. How to move forward in your organization: next steps
6. Resources available through the ENERGY STAR Low Carbon IT Campaign



What is Power Management?

What is Power Management?

- Monitor power management (MPM) places *monitors* into low power sleep mode after period of inactivity
- Computer power management (CPM) places the *computer* (CPU, hard drive, etc.) into sleep mode
- Built into Windows 95,98, ME, 2000, XP and now Vista
- Settings simply need to be activated



Why Power Management?



- Use less electricity
 - Half of energy used to power PCs is wasted
 - Save \$50 or more per computer annually
- Reducing cooling loads
 - Typical office bldg with internal heat load and moderately efficient system saves an additional 15%
 - In southern climates savings can be 30% or more
- Reduce peak load demand charges
 - Some utilities charge up to \$200 per kW per year, many charge \$150/year
 - Roughly every 150 PCs or monitors power managed saves 1 kW of peak demand
- Executive Order 13423
 - Requires federal agencies to activate ENERGY STAR “sleep” features on computers and monitors

Monitor Power Management: A No-Brainer



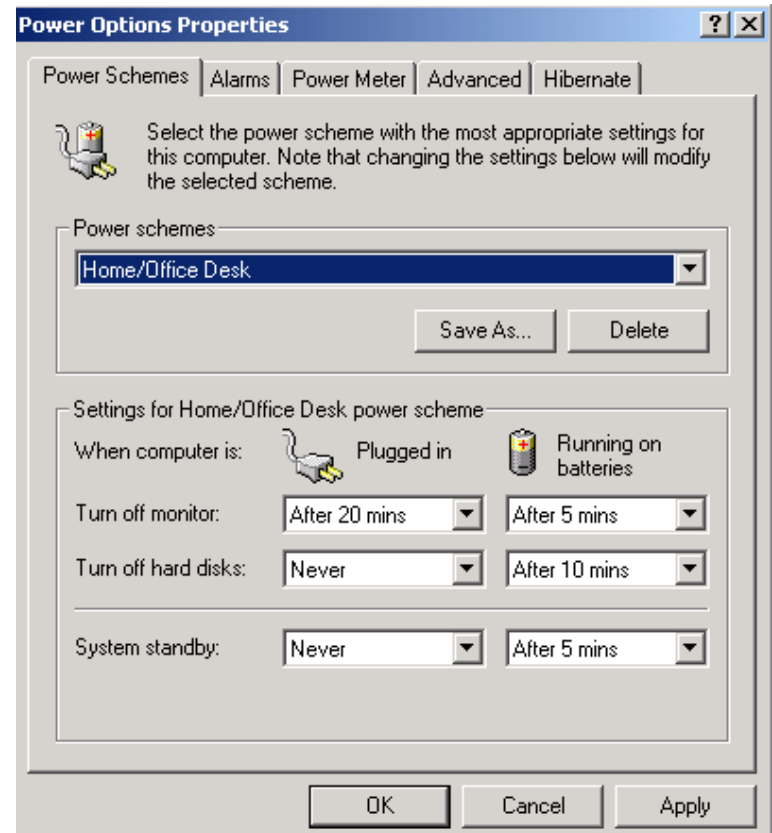
- Stable
- Easy to activate
- Saves \$10-35+ per monitor annually

Most organizations already utilize MPM features

Different Types of CPM



- System Standby (S3)
 - Drops power to 1-3 W
 - Wakes up in seconds
 - Saves \$10-40+ per computer annually
- Hibernate (S4)
 - Drops power to 1-3 W
 - Wakes up in 20+ seconds
 - Saves work in the event of power loss
 - Saves \$10-40+ per computer annually



Recommended Settings



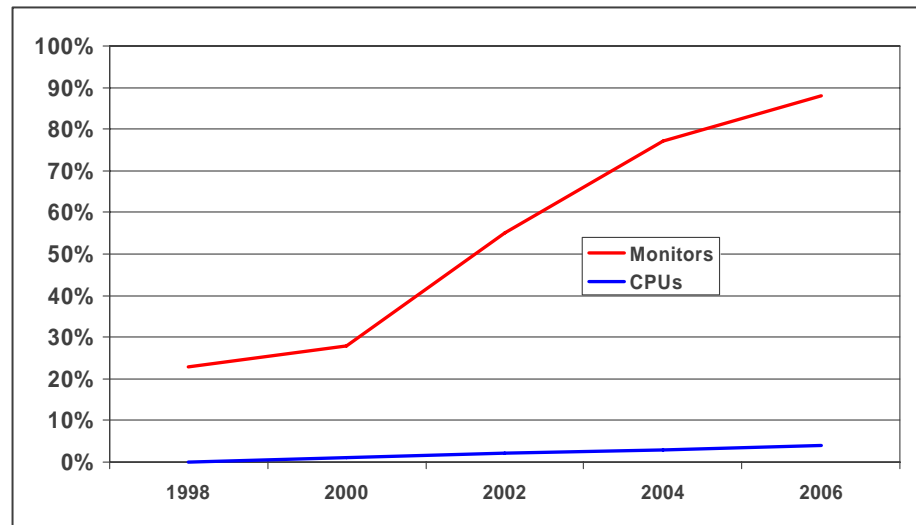
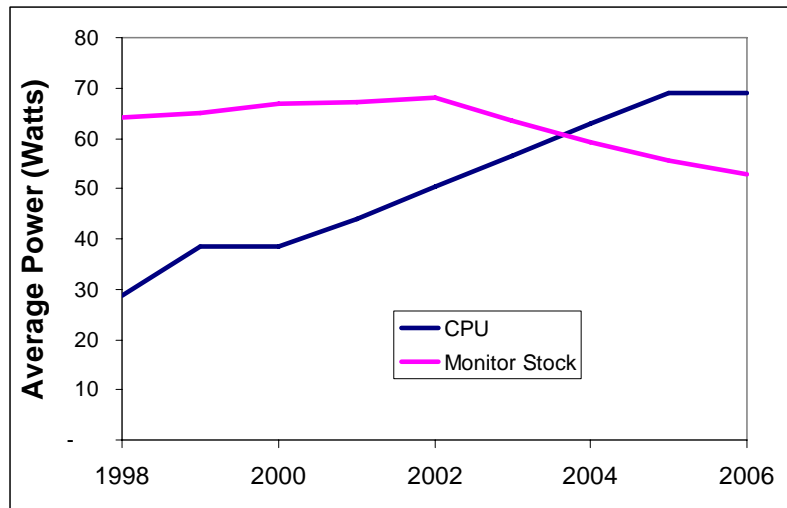
- To maximize power savings, EPA recommends:
 - Setting **monitors** to enter sleep mode after 5 to 20* minutes of inactivity
 - Setting **computers** to enter system standby or hibernate after 30 to 60* minutes of inactivity

* The lower the settings, the more energy you save
- On laptops, be sure to activate these settings in the AC power profile — not just the DC (battery power) profile.
- Don't bother with “Turn off hard disks” on desktop PCs: negligible energy savings



Putting Power Management Into Context

Energy Use and PM Utilization Rates



- Computers use increasingly more energy than monitors
- CPM is activated less than 10% of time in organizations. MPM is already activated at over 80% of organizations
- **CPM saves more than MPM**

What Could a 1,000-Computer Organization Save?



- A typical* 1000-computer organization can save \$40,000 annually
- Enough electricity to light 240 homes
- Resulting in over 350 tons of greenhouse gas emissions reductions –equivalent to those of 60 cars from the road



*Assumes night-time turn off rate of 36%, that MPM is already activated but CPM is not activated

ES savings calculator can quickly and easily quantify these savings for you at: www.energystar.gov/powermanagement



ENERGY STAR: Minimizing Computer Electricity Use

A Simulation

What is the ES specification for computers and monitors?



- Monitor specification:
 - Requires lower power consumption in off, sleep, and on modes (based on pixels)
 - Most all ES compliant monitors are LCD, almost none are CRT
- Computer specification:
 - Requires lower power consumption in off, sleep, and idle modes (based upon computer type)
 - Sets efficiency requirements for power supplies.
- **The Energy Policy Act of 2005 requires federal agencies to buy ENERGY STAR qualified computers and monitors.**

Where Can I Find ES Qualified Computers and Monitors?



- ES qualified product lists are available at: www.energystar.gov/products
- Over 70 different manufacturers make qualified computers.
- Over 50 different manufacturers make qualified monitors.

Minimizing Computer Energy Use



ZZZZZZZ...





Enterprise Implementation Challenges

Two Enterprise Implementation Challenges



1. Activating sleep settings on many computers at once
2. Ensuring that sleep settings do not interfere with the distribution of administrative software updates
 - E.g., Windows security patches, antivirus



Numerous solutions exist, including free software, and software tools that you may already own



How To Move Forward In Your Organization

Suggested Next Steps



1. Review current enterprise power settings and policies
 - Are sleep features enabled on monitors?
Computers?
 - Are users asked to leave PCs on at night?
2. Join the ENERGY STAR Low Carbon IT Campaign
 - Simply pledge to activate power management features on your monitors and computers
 - Sign up at www.energystar.gov/lowcarbonit

Resources Available

Through the ENERGY STAR Low
Carbon IT Campaign

5 Reasons to Join The ENERGY STAR Low Carbon IT Campaign



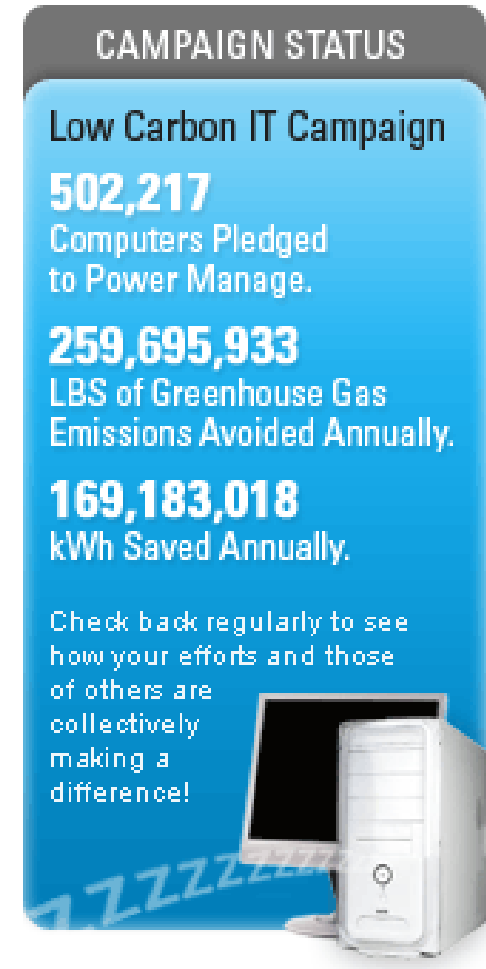
1. Free technical expertise and assistance
2. An estimate of your organizations' energy and carbon savings
3. An official certificate of recognition from EPA
4. Template materials to publicize your efforts
5. Possible national recognition from EPA



Organizations Like Yours are Already Saving



- Participants include corporations, government agencies, and nonprofits of all sizes
 - For example:
 - FedEx
 - Verizon
 - CA Dept. of Motor Vehicles
 - County of Erie NY
 - City of Newton MA
 - University of Baltimore
 - Brentwood School



Summary



- Implementing MPM and CPM can save \$50 or more per PC annually
- Many organizations are already saving using a variety of solutions
- Join the ENERGY STAR Low Carbon IT Campaign for technical assistance and recognition
 - www.energystar.gov/lowcarbonit

Contact Information



- Additional information at:
www.energystar.gov/lowcarbonit
- Contacts:
 - Steve Ryan, US EPA Energy Star Program Manager: 202-564-1254,
Ryan.Steven@epamail.epa.gov
 - Robert Huang, The Cadmus Group: 617-673-7117,
rhuang@cadmusgroup.com
 - Mike Walker, Beacon Consultants Network Inc. (EPA Technical Support Contractor): 617-921-8445,
mwalker@beaconconsultants.com