

Professional Advisory Committee (PAC) Meeting

Two dice are shown. The top die has a question mark on its top face, a power button symbol on its front face, and a circle on its right face. The bottom die has a slash on its left face and a crescent moon on its right face.

Improved and Standard
Power Management Controls
for Office Equipment

November 2, 2000

Introductions

- Who are you?
- Who do you represent?
- What is your job?
- What is your relation to PM and/or controls?



Power Management Controls

Professional Advisory Committee Members

Compaq

Vali Ali

EPA (Energy Star)

Craig Hershberg

Hewlett-Packard

Dennis McGavis

IBM

IBM representative

Intel

Nancy Sumrall

ITIC

Ken Salaets

Microsoft

Joel Grossman

Ricoh

Kousuke Ito

Samsung

Ian Miller

Sony

David Traver

Sun

Peter van der Linden

California Energy Commission

Joseph Wang, Ray Tuvell

Agenda

- Background
- Scope
- Institutional Review
- Research Topics / Research Plan
- Marketing / Outreach
- Next Steps / Next Meeting

Any adjustments?



Role of PAC

- Review
- Comment; Steer
- Lead us to people / data
- Attempt consensus
- Spread the Word



Power Management Controls

Berkeley Lab's roles

- Co-instigator of initiatives
- Technical analysis
- Data collection, compilation

Relevant Research Areas

- Office equipment
- Appliances
- Standby power
- Misc. energy use



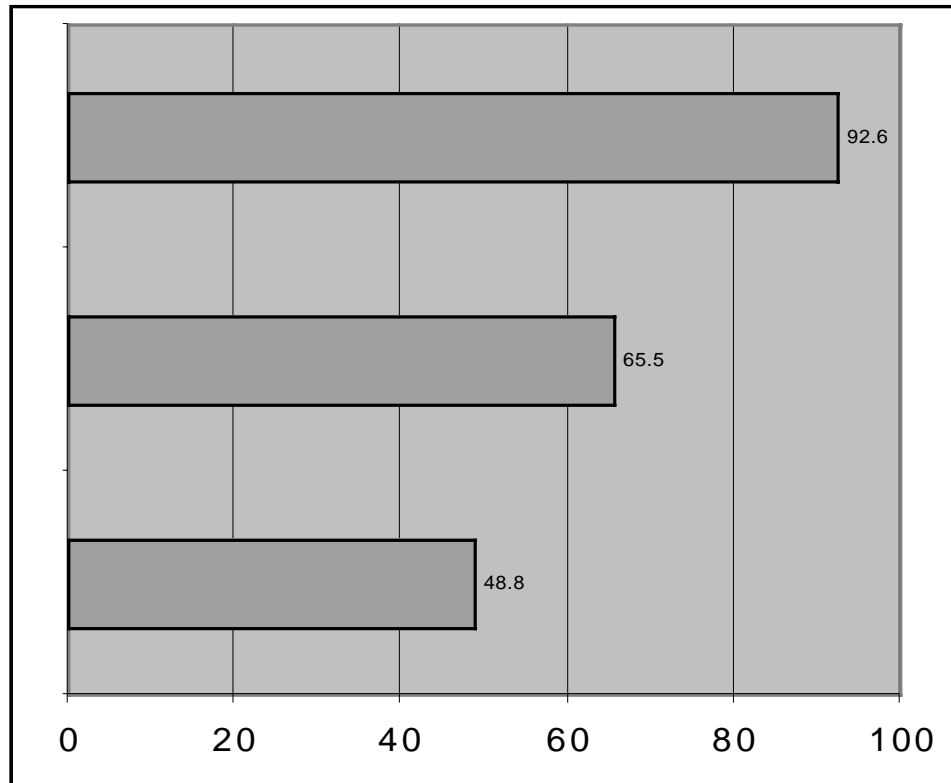
Office Equipment Energy Use

Annual Electricity (TWh/year)

**No Power
Management**

**Now
(ENERGY STAR)**

**Potential
(100% Enabling)**



Energy Savings

	<u>TWh/year</u>	<u>\$billion/year</u>
Existing	27.1	2.2
Potential	16.7	1.3

Current Power Mgmt. Enabling Rates:

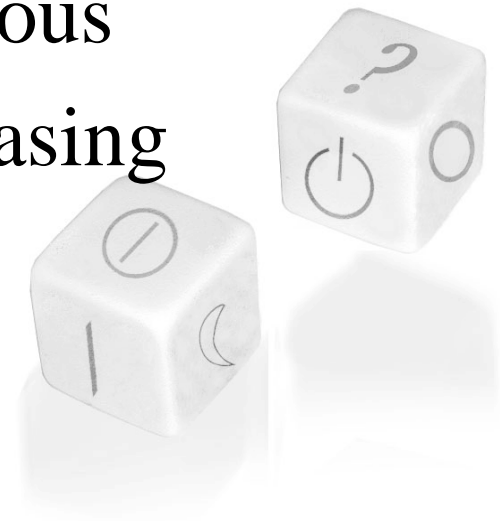
PCs:	25%	Monitors:	60%
Printers:	80%	Copiers:	70%



Power Management Controls

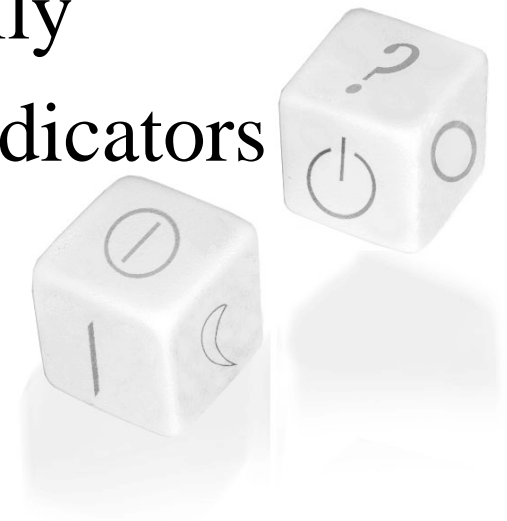
Why Is This Project Important?

- PC power management enabling rates are low; other devices could be higher
- PM Controls and Indicators are inconsistent and often confusing or ambiguous
- Potential PM savings are increasing



PAC Views of Power Management

- Your organization's history / views
- Recent, current, and upcoming issues
- Anecdotes
- How project perceived internally
- Your use of terms, symbols, indicators



Professional Advisory Committee (PAC) Meeting

The image features two dice. The top die shows a question mark on its top face, a power button symbol on its front face, and a circle on its right side. The bottom die shows a slash on its left face, a crescent moon on its right face, and a circle on its top face. The dice are rendered in a light, semi-transparent style with soft shadows.

Improved and Standard
Power Management Controls
for Office Equipment

November 2, 2000

Scope :

Interface Elements

- Terms
- Symbols/Icons
- Indicators
- Operating Metaphors
 - 1 Switches/Buttons
 - 1 Device Behavior

OK?



Power Management Controls



ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY

Scope :

Element Locations

- Outside of devices
- Displays
- Remote devices
- Documentation

OK?



Power Management Controls

Scope:

Types of Devices

- Office Equipment:
PCs, monitors, printers, copiers, MFDs, fax, ...
 - Consumer Electronics
 - Entertainment Devices
 - Information Devices
 - Appliances
- OK?



Power Management Controls

Scope :

- This Project ~~NOT~~ About
- Safety
 - Power levels; delay times
 - Labeling/certification
 - Security
 - Internal protocols/mechanisms
 - Internal terms
 - Intellectual Property

OK?



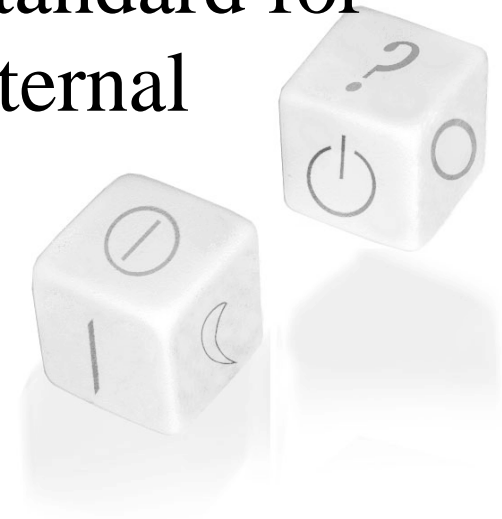
Power Management Controls



ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY

Assumptions

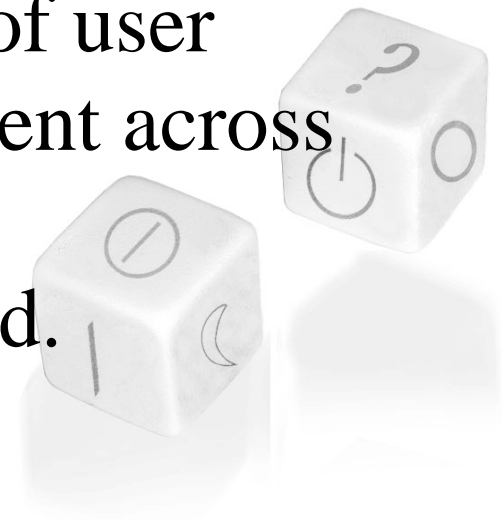
- People will use PM better and more often if they understand its existence and operation.
- Improved and standard user interface elements will improve understanding.
- Manufacturers will adopt the standard for new products if it exists and internal advocates promote it.



Power Management Controls

The Project

- *Goal:* Save extra energy by getting more use out of already existing power management capability in office equipment, and improve the user experience.
- *Means:* Achieve a similarity of user experience of power management across office equipment.
Do this via a voluntary standard.



Intellectual Property

- Our view: not relevant
 - Any result of this project will be sufficiently obvious to be immune to IP claims
- Your concerns?
 - How do we make sure that uncertainties about IP do not impede the **process** or **result** of this project?



Power Management Controls



Power Management Controls