

## Next Steps

In the coming months we will seek detailed feedback from product designers about these recommendations. Later, we will do some testing of these to check to see if they “work” for ordinary users, and do so better than alternatives. Also, we will be addressing some of the other topic areas in our plan, such as what events wake up a sleeping device, and how complex controls can be presented simply to the user.

## Funding

This project is made possible by funding from the California Energy Commissions Public Interest Energy Research Program.



## Interested?

Further details can be found at: <http://eetd.LBL.gov/Controls>  
Also, ask to be put on an email list for occasional project updates.

Bruce Nordman  
BNordman@LBL.gov  
510-486-7089



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ERNEST ORLANDO LAWRENCE  
BERKELEY NATIONAL LABORATORY

# Power Management Controls



## Our Goal:

To save energy, by increasing enabling rates of existing power management capability in office equipment.

## Our Method:

Make power management more consistent and intuitive to users across all office equipment (via a voluntary standard).

## Five First Steps

The “Power Management Controls” project is working with major manufacturers of office equipment to define common elements and principles for user interface design. As background, LBNL has reviewed the key “Institutions” (such as standards organizations), relevant literature, and assessed the power controls on many pieces of office equipment and consumer electronics. Our detailed plan covers 22 separate topic areas.

We have focused initially on the “hard interface”— the words, symbols, switches, buttons, and indicators on the outside of devices. The five recommendations on the following page form a foundation; other recommendations will be added over time.

These are proposals for discussion by LBNL. The project’s final recommendations will be guided by the results of testing and the decisions of the Professional Advisory Committee (PAC).

# Five First Recommendations

*For the most part, these recommendations codify the design practice that is used most commonly on current products.*

*These are **not** the final project conclusions, but only show here for purposes of discussion.*

## Three power states: On, Off, and Sleep

Many devices only have two or three power states; some (including most computers) may have many. Whenever possible the user should only have to see or know about three. Within each state, the device will appear consistent (e.g. displays and indicator lights), and behave consistently (e.g. what wakes it up or turns it on).

## Use the word “Power”

For terminology about power, use “Power”. This covers the power **button** or **switch**, and the power **indicator**.



## Use “green/amber/off” for power indicators

**Green** for **on**; **amber** for **sleep**.

We suspect that some current standards incorporate usage; we have yet to identify them. Red should be reserved for warnings, alarms, or errors. Avoid flashing for permanent states, although use it during transitions.



## Drop the ⓪ symbol.

Use ⏻ for power buttons and indicators.

This would require changing the current ISO/IEC standards for symbols on equipment, but is most consistent with actual usage on current products. The standards have ⓪ as an on/off button, and ⏻ as “Standby” (whatever “standby” means — who knows!). The symbols are too similar to use both — one should be dropped. ⏻ is used more and more for power indicators, and seems to have greater visual appeal.



## Use the “sleep” metaphor

The device is “in sleep” or “asleep”; it “goes to sleep” or “wakes up”. Use the moon symbol for sleep, such as on a sleep button or occasionally a sleep indicator.

