

How Desktop Displays Can Help Minimize Expenses

Organizations of all sizes have many costs. In addition to large expenses like employee salaries and healthcare, there is still rent, technology, and utilities. Companies are prepared for these costs. They expect the hefty prices associated with heating, cooling, and lighting systems and they take precautions to guard against excessive energy expenditure. However, they may not be guarding against hidden costs that come from unexpected places.

The Hidden Cost of Typical Desktop Displays

Desktop displays are part of what energy researchers refer to as miscellaneous electrical load (MEL), electricity consumed by objects that are not part of heating or cooling systems, lighting or large appliances. While MEL typically refers to energy consumption in the home, it also largely affects commercial businesses as well. A contributing factor to MEL, is that many of the items that make up this type of power consumption are never really turned off, so they continue to eat away at energy resources even when they are not actively in use.

This is also true for desktop displays. A recent study of 125 office desktop computers showed these devices spend 61 percent of their time on, but userinactive, meaning the displays were turned on, but no one was using them. There are many reasons for this. Employees spend large portions of their day away from their desks. Meetings, lunch breaks, and off site visits can keep workers busy, but not necessarily active on their computers.

"If you think about the standard nine hour workday with a one hour lunch, a ninth of your power consumption everyday that's being wasted when a monitor is left on," says Art Marshall, senior product manager for desktop displays at NEC. "Even a relatively moderate display that might consume 20-25 watts of power, over the course of the week, that's the equivalent of having a light bulb on for hours."

Think about how bright your office would be with all of these additional light bulbs on. Now multiply that by the number of employees in the office and you begin to see just how costly it can be to keep desktop displays powered on throughout the day.

On average, a desktop computer alone can consume 250 watts of power. A display can add another 20-40 watts an hour on top of that. This is one reason many offices have switched to laptops rather than desktop computers. Laptops consume far less energy than desktop computers, but the small size reduces productivity and larger desktop monitors are still needed.

It's typical for employees to work with multiple displays, as many as two or three in a cubicle



setting, allowing employees to move seamlessly between tools while maintaining productivity. In more specialized settings, such as security or healthcare, the number of desktop monitors can easily double, which only adds to energy costs.

In recent years, there has been a growing awareness about energy consumption and likewise the number of green technologies on the market has continued to expand. In December 2016, California adopted the nation's first energy efficiency standards for computers and monitors. These new standards call for more energy efficient monitor screens, improved sleep modes for computers not in use, and enhancements in automatic power management.

The California Energy Commission (CEC) estimates these improvements could save 2,332 gigawatt-hours per a year, and reduce combined utility bills by \$373 million annually once less energy efficient computers and monitors are replaced with newer models that meet the standards. These estimates reflect residential savings, but there are huge implications here for companies of all sizes. Investing in energy efficient displays is a small step towards big savings.

"Organizations that are financially savvy are always looking for ways to reduce costs in any way possible," says Marshall. He's seen companies reduce in-office hours and purchase ultralight laptops to cut energy consumption. This is particularly common in what Marshall refers to as "leading edge" organizations, including financial companies and large corporations.

Much as companies have begun to invest in smart thermostats or lights that turn off when they stop sensing movement, they're beginning to set aside resources to upgrade to energy efficient displays. Of course, the actual savings a company could see by investing in energy efficient

technology varies. It depends on usage, technology make and even model. But, the results are promising and more companies, particularly large enterprises are beginning to see that.

How One Company Is Solving This Problem

Fortunately, displays with energy saving features are not as expensive or as difficult to find as they once were. NEC has come to market with two display lines that offer reduced energy costs at a price point comparable to its less green competitors.

The MultiSync EA line of displays is designed for corporate environments and boasts an LED backlight technology that reduces power consumption by 52% compared to its predecessors. This line includes power saving features like ECO mode, ambient light sensors, a carbon footprint meter, and a human sensor.

ECO mode lowers the maximum brightness output of a display. Companies have the option to control this feature, giving them the ability to reduce costs by setting limits on the brightness of a display. For example, an organization could decide that desktop displays are not allowed to be brighter than 30 percent of the display's maximum power, reducing power consumption by 36 percent on a typical 24-inch display. ECO mode could be used to ensure employee displays do not exceed the established standards.

Ambient light sensors adjust the display's brightness to the optimal setting depending upon the ambient light in the room, screen content, or both. This prevents the display from using a higher brightness setting than necessary and does not rely on an employee to recognize this and manually adjust the settings.

The human sensor is essentially an idleness setting. It activates when an employee is away from his desk or has left the display unused for an extended period of time. It's a common misconception that screen savers indicate the computer is in a lower power setting, helping to conserve energy and ultimately saves the company money. Unfortunately that's not true. Screen savers do not save you money and, in fact, may end up costing you. Animations and graphic-intensive screen savers can burn twice as much energy and even prevent your computer from entering sleep mode. Features like human sensors actually detect a lack in use and automate a reduction of power of up to 95 percent.

NEC has a second display line that offers many of the same green features. The MultiSync EX displays offer the same ECO mode, ambient light sensors and human sensor as the MultiSync EA series, but with a minimalist design. The displays feature an ultra-light weight and ultra-thin bezel. When used in a multi display configuration, the EX line has very little gap between screens, resulting in almost seamless imaging.

The benefit to this is two-fold. One, it provides a significantly better experience for end users particularly in the financial and medical fields, or in control rooms where continuity of imaging is especially important. Two, from a business perspective, the slim design of the EX line makes it ideal for office settings where desk space is typically limited. Like the EA series, the EX line is ENERGY STAR compliant. An added bonus that comes with power saving features is that they not only lower your energy costs, they extend the life of your displays.

You Don't Need to Sacrifice Power for Performance

If you're worried that investing in an energy efficient desktop display means that you'll have to settle for lower performance or a less aesthetically pleasing design, then you can rest assured this isn't the case. Take the EA series displays, for example. The power saving features have little to no impact on imaging or general performance.

"If you were to turn on ECO mode, a maximum brightness cap is applied, but in terms of other imaging performance they're still great displays with very crisp IPS panels," Marshall says.

The real difference in these types of displays is the lower total cost of ownership. Price will vary by vendor and some models may cost more upfront than traditional displays, but in general, energy efficient displays are an affordable option even for those in the small business world with more limited budgets.

"The interesting thing is that the price premium for the types of displays with these features is very minimal," says Marshall. "Over the cost of the life of the display, the overall cost is very comparable and can often be lowered."

