



# Reducing Storage Power Consumption

Five Green Advantages of the OneStor™ ESP Family



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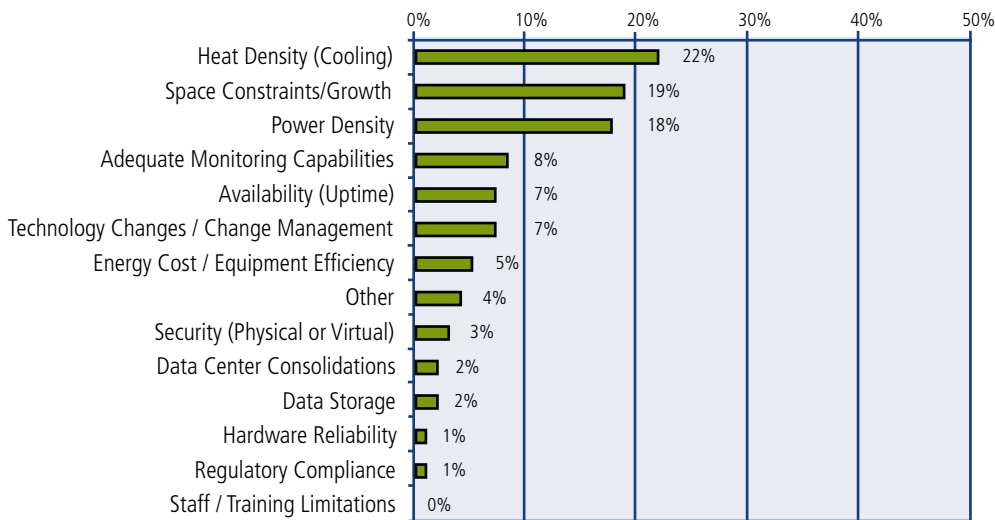
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## Introduction

According to IDC® the cost of providing power and cooling to the world’s spinning disk drives exceeded \$1.3 billion in 2007. (1) Additionally, the “new” data center is full of multi-core processors and high-density blade servers to support the on-going server consolidation that is taking IT departments by storm. These advancements are creating new challenges for IT managers to provide adequate power and cooling for their datacenters. Manufacturers must start to deliver solutions that reduce power consumption.

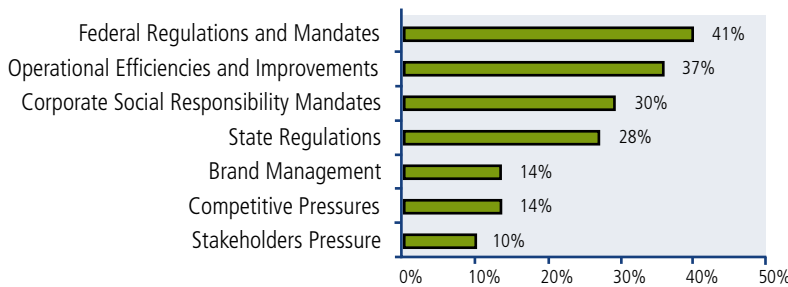
Fortunately, the IT industry is responding with a number of broad initiatives and alliances to “green” the industry’s manufacturers and to improve overall data center energy efficiencies. Some of the leading industry groups include: The Green Grid and SNIA Green Storage Initiative. The key question to consider in light of this development is — what is your vendor doing to reduce power consumption and lower your datacenter cooling costs?

## Drivers of Green Initiatives



Courtesy: Liebert

**“According to Liebert, cooling is the largest single concern for 22% of data centers and power availability is the top concern of 18% of data centers.”**



Source: Aberdeen Group, March 2008

**“According to Aberdeen, 41% of U.S. executives stated that adopting green practices and systems is due to U.S. Federal regulators and mandates.”**

## Five Green Advantages of the OneStor™ ESP Family

1. Environmentally Friendly Design
2. Highly Efficient Power Conversion
3. Advanced Adaptive Cooling
4. Individual Drive Power Control
5. 2.5" SFF Consume Half the Watts of 3.5" HDD

Below are five distinct ways that Xyratex is achieving new, lower levels of power and higher operational efficiency with its OneStor ESP (Extensible Storage Platform) family of storage arrays.

### Environmentally Friendly Design

Each OneStor is designed to meet worldwide standards for the reduction in the use of hazardous substances and materials during the manufacturing process. To enable this, Xyratex has gone through an extensive material



substitution program to utilize eco-friendly components. All Xyratex storage systems are both RoHS and WEEE compliant in Europe and China. Additionally, all product packaging and components **use recyclable materials** to the maximum extent possible.

### Highly Efficient Power Conversion

Traditionally, the conversion from AC (alternating current - wall power) to DC (direct current) is an inefficient process. The industry average on similar storage products is about a 70% efficient conversion of AC power. Xyratex Engineers have designed a power supply that **converts greater than 85% of the incoming power** supplied to their equipment. That's more than a 20% improvement in power utilization!

### Advanced Adaptive Cooling

Software continuously monitors internal and ambient temperature zones and varies fan speeds to account for dynamic temperature changes, thus **reducing energy requirements**.

### Individual Drive Power Control

Individual drive power control enables applications to precisely **control power consumption at the component level** in the storage infrastructure. With power control at the individual drive level, it is possible to minimize power consumption by shutting off idle disks and then powering them back up again when data access is required.

## 2.5" SFF Consume Half the Watts of 3.5" HDD

The OneStor SP1224s model introduces the new 2.5" 15K RPM Small Form Factor (SFF) disk drives to mainstream enterprise storage. These new disk drives consume approximately half the power of equivalent 3.5" drives and deliver more IOPs per square inch thereby delivering greater performance density with significant energy savings! As well, OneStor supports tiered storage enabling use of 7.2K RPM 3.5" disk drives that are also more energy efficient than 15K 3.5" disk drives. The ability to mix and match drives to meet power, performance, response time, and durability needs is a standout feature of OneStor.

## Tangible Benefits

IT has an important challenge to lower on-going operational costs of their data centers, specifically cooling and power consumption. The OneStor ESP family helps reduce the costs of running storage infrastructure with unique design and technology enhancements. Industry analysts report that operating expenses (OPEX) now account for up to seven to ten times the storage equipment acquisition cost, coming right off the bottom line. This leads to another critical question: what are you doing to minimize this expense in your IT operation?

## Conclusion

In a tight economy, competitive challenges are not the only pressures an organization must face. Cost containment and business efficiencies are viewed by executives as just as real a threat to profitability. Rising energy costs and energy-efficiency have become critical success factors for global IT operations and the businesses that rely on them to. The cost savings through increased energy efficiencies is a quantifiable return on investment. The **unique design of OneStor** enables it to operate in a highly energy-efficient mode without sacrificing performance, reliability, or cost-efficiency. OneStor™ is the one storage platform OEMs can standardize on to optimize their storage portfolios thus also ensuring their competitive advantage.

## References

(1): IDC, The Real Costs to Power and Cool All the World's External Storage (Doc #212714)

## Pillars of Xyratex ECO-Strategy

**Corporate** - community involvement, greening the manufacturing process, reducing facilities energy consumption, and waste recycling programs

**Alliances** - working with our customers, technology partners, and utility suppliers to provide energy optimized solutions

**Products** - optimized storage system power, packaging, and cooling coupled with advanced power management software

**Standards, Legislation, Compliance** - actively driving environmental standards that enable data center managers to monitor and control energy usage, compliance with environmental legislation and standards

## About Xyratex

Xyratex is the ultimate partner to the storage industry. We are a leading provider of enterprise-class data storage subsystems and storage infrastructure manufacturing equipment & automation solutions. Working with over 50 A-list companies, Xyratex ships over 14% of the world's external storage capacity, and 75% of all 3.5" drives are processed using Xyratex test systems. With unmatched expertise and a history of innovation and technological excellence, Xyratex delivers products which are high-performance, energy-efficient and extremely reliable.

For more information, please visit [www.xyratex.com](http://www.xyratex.com)

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