

Eco-Efficient IT

The eco-imperative and its impact on suppliers
and users – 2007-2012

October 2007

EXECUTIVE OVERVIEW

the **451** group

Report snapshot

- Service: 451 Special Report
- Report: *Eco-efficient IT: The eco-imperative and its impact on suppliers and users*
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Key findings

- IT energy use is heading toward the top of the corporate agenda. Over the next 1-5 years, user organizations of all kinds will begin to aggressively tackle IT power use and, to a lesser extent, ensure sustainability of the products they use. The 451 Group's eco-efficient IT survey found that only 21% of respondents claimed that energy conservation had any influence at all on their company's IT purchasing decisions over the past 12 months – but 46% predict that this concern will have an impact in the next 12 months.
- The main reasons why energy efficiency is becoming so important are:
 - To ensure an adequate supply of energy to meet the continued demand for greater computing resources
 - To reduce energy bills (energy use and prices are set to increase steeply)
 - To reduce carbon emissions for environmental, ethical and PR reasons
 - To conform to new legislation (i.e., risk management).
- IT has been identified by many commentators as a primary source of greenhouse gases, and therefore a cause of global warming, because of its high energy use. However, analysis shows actual greenhouse-gas contributions are small when compared with other sources. The 451 Group believes that instead of presuming a defensive position, IT should assert its role as a positive force for change, in which it embraces innovative technologies and uses them to improve energy efficiency across the enterprise. Because of the importance and the power of IT, The 451 Group believes innovative CIOs have an opportunity to be involved in energy management beyond traditional IT, and to take a leadership role – 'driving efficiency through IT.'
- Very significant gains in IT energy efficiency are possible using today's technology, or with only incremental advances in technology. When new and emerging technologies and best practices are combined, substantial and absolute reductions in energy use by IT will be possible in the coming years, even allowing for increased workloads.
- IT suppliers will have no choice but to develop and promote energy-saving or energy-efficient products, and most are already doing so. Technologies involved include semiconductors, servers, desktop and mobile devices, storage, and power supply and cooling systems. Energy efficiency is becoming a core competitive differentiator.
- There is huge over-provisioning and waste in current IT operations. Technologies that address these issues – in processing, power supplies, storage and cooling – are likely to be in demand.
- Datacenters will be a focal point of innovation because they are large consumers of energy (about 1% of all US electricity, and many times higher in some states) and represent significant areas of spending. Servers, storage, efficient design, air conditioning, cooling and power supplies and distribution will all prove important areas of innovation. Applying best practices in datacenter management will also yield significant results.

About this report

Across the world, governments and states are taking action to reduce greenhouse-gas emissions. These actions include the introduction of carbon trading schemes, direct and indirect carbon taxes, the purchase of carbon offset credits, the subsidy and encouragement of the use of renewable energy, and intense public information campaigns. All of these actions are likely to intensify over the next two decades, and they will have a profound effect on businesses and on their behavior.

Until now, the carbon footprint related to the use of energy by IT equipment has been largely overlooked by suppliers, customers, policy-makers and campaigners. But as the scale of energy use by IT becomes clear, and as it continues to increase, there will be a growing focus on this area, from both within the IT industry and outside it.

This report is about energy efficiency – of IT equipment, IT operations and, ultimately, of all organizations that use IT extensively. It is the firm belief of The 451 Group that energy efficiency – for financial, environmental and availability reasons – is heading toward the top of the IT agenda and will remain there for many years.

This report has four primary objectives:

- To explore the role that IT plays in corporate energy use, and ultimately, in the production of CO₂.
- To identify and examine the key technologies and strategies that IT-using organizations can adopt in order to reduce their energy consumption, and to minimize the associated business risks.
- To identify and assess the strategies of some of the key vendors that are directly involved in the new eco-imperative and the strategies of their customers.
- To assess the business impact of the imperative for eco-efficient IT over time.

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3Par	Dell	
Advanced Micro Devices	Eaton	Intel
American Power Conversion	EcoSky	Microsoft
AISO.Net	EMC	Modius
Ask.com	Emerson Network Power	Rackable Systems
BAA	Fujitsu Siemens	Rackspace
BT	Google	SprayCool
Centrinet	Hewlett-Packard	Sun Microsystems
Cisco Systems	HSBC	Verari Systems
Copan Systems	IBM	Verizon Wireless
	Igel	WebCtel
		Wells Fargo