White Paper

See the Power: Achieve Plug Load Visibility with Enterprise Energy Management

Introduction

Building management systems have conducted most enterprise energy management over the past several decades. But just as technological advances have made the physical office worker more virtual, physical boundaries such as buildings and campus locations are giving way to borderless IT networks and a broader community of business devices. This can be a challenge for facilities departments tasked with managing and reducing the rising costs and demand for energy across the enterprise. After all, you can't improve what you can't measure.

Power per square foot or power per user calculations have set the standard for determining how much energy a building's IT equipment consumes. But what if you could see actual energy consumption, utilization, cost, and carbon emissions for every device that is plugged into your network? New solutions for enterprise energy management are making this possible and delivering dramatic cost savings: up to 35 percent in some cases.

As energy management becomes IPbased, you gain a detailed view of energy consumption for all your network-connected IT devices, even HVAC, lighting, video, and access control systems. An enterprise energy management solution can benefit facilities by providing detailed visibility into plug load, along with automated power management for data centers, campuses, or distributed office environments, extending into facilities. Organizations can use the solution to automatically manage and reduce power consumption for these devices and systems, saving time and money while helping meet sustainability requirements.

How Does It Work?

For years, solutions to manage energy consumption and utilization at the IT device level have been cost prohibitive, inadequate, and difficult to implement. Today this is changing for the better. With technology available now, enterprises can transition their energy management approach from "always on" to "available when needed" without hurting employee or business productivity or service-level agreements (SLAs). The results of this shift include significant cost savings, reductions in carbon emissions, and increased visibility into energy use that can aid capacity planning, policy decisions, and more.

New enterprise energy management solutions are providing a consolidated energy use dashboard for every network-connected device in the enterprise. This delivers unprecedented visibility into the energy use of every device, system, and facilities asset connected to the network. It also gives organizations the ability to actively monitor and manage power for cost savings, without slowing productivity.

Cisco Energy Management software reduces energy costs by seeing, measuring, and managing energy use of all network-connected devices and systems, with no software agents or hardware meters required. Cisco® Energy Management acts as a virtual smart meter, providing a global view of energy use for a wide range of devices, including desktops and laptops, wireless access points, voice over IP phones, servers, network routers, switches, and more.

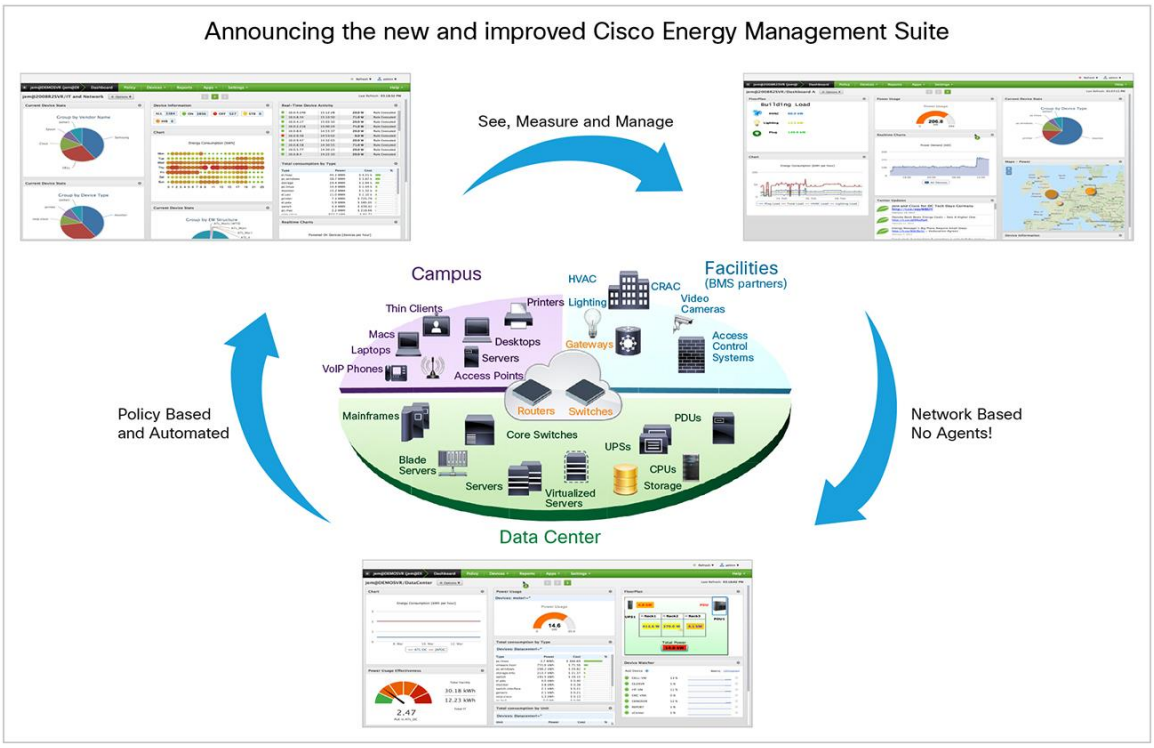
The Four Functions of Enterprise Energy Management

Cisco Energy Management gives organizations the ability to see, measure, and manage power across the enterprise through policy-based energy optimization. Four technology functions enable the see, measure, manage process, including:

- **Discovery and measurement:** Find all the network-connected devices, systems, and facilities assets in the enterprise.
- **Assessment and simulation:** Analyze energy use, temperature, carbon emissions, and costs by device, location, division, business unit, department, cost center, and more; simulate policy scenarios to determine highest cost savings and preserve productivity.
- **Policy and management:** Execute automated energy policies or alerts by device, time, location, or event, resulting in energy that follows the productive user and cost savings.
- **Reporting:** Delivers comprehensive reporting about the way energy is used and cost/carbon savings for individual offices or the entire enterprise.

Cisco Energy Management uses a unique agentless discovery method to automatically find all devices in the enterprise. After discovery, Cisco Energy Management Suite continually monitors and reports energy use. Based on the energy metrics and intelligence collected, organizations use Energy Management to develop policies and rules to optimize energy use and reduce costs on a massive scale. A typical organization can achieve energy savings of 30 to 60 percent annually. Cisco Energy Management also provides robust reporting to support corporate sustainability initiatives and show incremental improvements over time.

This figure shows how the Cisco Energy Management Suite provides energy intelligence to help you gain new visibility into energy use and reduce energy costs.



Cisco Energy Management Suite policies can be implemented by device type, location, priority, and other parameters. In addition, Cisco Energy Management Suite enables load-adaptive computing to allocate the right amount of power only to those devices doing productive work, minimizing the amount of energy supplied when idle or operating at less than maximum performance.

Using Cisco Energy Management to Achieve Energy Savings

Enterprises can use Cisco Energy Management Suite to create policies that automatically and remotely manage power for enterprise devices, powering systems down when idle/not needed. This gives organizations the ability to align energy use with demand across the enterprise through automated policies to achieve significant savings. This shifts thinking and practice from “powered on by default” to “available when needed.”

Organizations that have already adopted an enterprise energy management solution are making some interesting discoveries about employee work habits and the power draws of office equipment. For example, one company learned that its video teleconferencing system was drawing as much power overnight as an entire floor’s worth of equipment. By automating a time-based policy to power down the system during idle hours, the company achieved immediate and substantial savings.

Another organization learned that many of its supposedly mobile devices never left the building. Most of the time, these devices were also left on overnight when not in use. Automated policies that power down idle, unproductive office equipment can save 35 percent in energy costs. An ideal solution will provide opt-in/opt-out policies for end users to preserve productivity.

Event-based policies designed to support energy following the productive user can power up/down campus devices when employees enter and exit a facility. Time-based policies power down desktops and laptops, monitors, access points, printers, copiers, and lights after hours and on weekends.

Teaming with IT to Reduce Energy Consumption

When it comes to implementing enterprise energy management, the facilities and IT groups within an organization must collaborate. Both departments strive to deliver a reliable and stable service to the rest of the enterprise, but the energy concerns of each department vary slightly. Facilities strives for efficiency, keeping costs down while meeting the company’s power needs. The IT department supports and extends computing capabilities for the company while also maintaining SLAs. In general, facilities values efficiency and IT values availability. But with Cisco Energy Management, these goals are not mutually exclusive.

Cisco Energy Management is implemented and managed by the IT department. Its policies are designed to promote availability and SLAs while maximizing energy efficiency. As a network-connected energy management platform, Cisco Energy Management is an IT product. But the budget relief it provides goes directly to the facilities bottom line, with energy savings and reduced carbon emissions.

The most successful enterprise energy management implementations receive support from the facilities and IT departments, regardless of which one initiates the project. If the initiative begins with facilities, it’s important to make a business case for visibility into the energy consumption and utilization of IT devices with a stated goal for cost reduction. IT should be assured that availability, productivity, and SLAs will be preserved.

In addition to energy and cost savings, Cisco Energy Management can provide tangible benefits for the IT department, including sustainable procurement or the ability to factor energy consumption and carbon emission into the purchasing decisions for IT devices and the identification of virtualization candidates.

Cisco Energy Management helps organizations see beyond the physical to allocate energy across virtual machines and applications. It can also be used to identify prime candidates for virtualization and specifically determine underutilized and low-density servers consuming the most energy.

One of the most important criteria for IT departments is Cisco Energy Management Suite network-based approach. With no client-side software to install or maintain, Cisco Energy Management Suite is simple to deploy and manage, delivering results in days, not weeks and months.

Let Us Help

Let Cisco or one of our partners provide you with a Cisco Energy Management Suite discovery service engagement to help you understand your IT energy usage, define a business case, broker internal discussions between facilities and IT departments within an organization, or perform a proof of concept that will reveal energy savings opportunities. To learn more about the Cisco Energy Management suite of products and service and potential energy savings, visit www.cisco.com/go/energymanagement.

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