# Con Edison drives demand reduction by promoting energy efficient IT.

## Overview

- ***Business Challenge***
  *Companies are facing an increasing challenge in getting enough power into—and heat out of—their data centers, even as computing volume is growing. Coupled with the growing need for sustainable energy practices, companies are looking to gain more control over one of their biggest sources of consumption—their data centers—but have been stymied by a lack of transparency.*
- ***Solution***
  *IBM, in partnership with Con Edison, is developing new energy demand management programs aimed at helping businesses of all sizes reduce energy consumption. Major elements include educating IT departments on energy consumption, targeting specific projects that offer immediate energy reduction, helping customers monitor and verify progress, and applying for incentives that reward energy reduction.*

*Consolidated Edison Company of New York (Con Edison), a regulated utility, provides electric service in New York City and most of Westchester County, and uses IBM technologies and services for its data centers.*

- ***Key Benefits***
  - *Average achievable energy savings of 40 percent or more*
  - *Average payback period of less than two years*
  - *Ability to earn verified energy credits*
  - *Deferral of new data center investments*

Environmental responsibility has emerged as one of those rare issues whose impact is felt across businesses of all sizes and in all industries. Companies are taking a fresh, top-to-bottom look at their operations with an eye toward reducing their carbon footprint and following more environmentally sustainable practices. What is perhaps most noteworthy about the rise in carbon consciousness is how serious companies are taking it. By and large, the embrace of pro-green practices is neither symbolic nor an afterthought—but a top strategic priority that has an impact on most every

**Business Benefits**

- Ability to accurately assess existing IT infrastructure
- Lower data center deployment costs through the use of pre-architected data center designs
- Improved efficiency through server consolidation and application virtualization
- Lower cooling costs through the use of innovative new cooling technology
- Ability to monitor, control, report, cap, cost, and allocate energy consumption

part of the business. This rapid and continuing rise in importance is being driven by both strategic and operational factors, not least of which is the growing societal consensus that environmental sustainability is simply "the smart thing to do."

While important, that's only part of the story. Though the drive for corporate social responsibility provides a guiding framework for companies to implement environmentally friendly practices that will pay off in the years to come, companies are also acting with a clear eye on today's bottom line. As the global appetite for power has steadily grown, the cost of producing and distributing it has grown along with it. For companies, the rising cost of energy has an across-the-board impact on the ongoing cost of operations. Nowhere is this more evident than the power costs associated with IT. With computing volume increasing, data center power costs have become one of the fastest-growing expense line items, threatening to place an increasing drain on long-term profitability. Even more pernicious is the potential for IT power requirements to spill into—and ultimately distort—business decision-making. That's exactly what happens when companies put off initiatives because they can't get enough power into their data centers, or when they can't meet the mushrooming cooling requirements that typically come with heavy data center processing.

**Improving the posture of energy efficiency**

In addition to recognizing the need to reduce emissions, utilities also face mandates from state governments to improve energy efficiency. In 2008, the New York Public Service Commission established New York's Energy Efficiency Portfolio Standard (EEPS). This statewide program has a goal of reducing New Yorkers' electricity usage 15 percent of forecast levels by the year 2015. But for energy efficiency to work, customers need a granular, timely way to measure actual consumption. While Con Edison (www.coned.com) saw a tremendous payoff for implementing energy efficiency in New York City's many data centers, it faces the barrier that only one in four IT managers has visibility into their data center's energy consumption. To bring energy efficiency into its customers' data center operations, Con Edison needed a way to provide customers with both visibility into consumption and expertise in designing data centers for maximum efficiency.

> *"The ability to accurately monitor and verify the efficiencies gained is especially important as environmental regulations emerge, which could have a significant effect on our large and small data center customers."*
>
> – *Rebecca Craft, Director of Energy Efficiency Programs, Consolidated Edison Company of New York*

In a good team, each member possesses a unique capability that enables the group to accomplish more collectively than the individual members could alone. To assist Con Edison, IBM has partnered with Neuwing Energy Ventures, a private, New York-based company that provides total energy management solutions. As the leading third-party verification expert in the burgeoning field of Energy Efficiency Certificates, Neuwing was selected to help IBM pave the way toward the greening of the data center in the New York metropolitan area.

The more complex challenge for the partnership, however, was in constructing a value proposition that would directly address the "green" side of the benefits equation, which is broader and harder to define and—in many ways—more strategically important. Put simply, while corporate environmental responsibility clearly has a strategic and economic value, there is a diversity of preferences among companies as to how that value is expressed. By tapping Neuwing's expertise, IBM and Con Edison customers can enhance the already substantial benefits of projects designed to upgrade their data centers, reduce energy costs and simultaneously decrease carbon emissions associated with the electrical use of their data centers. Energy Efficiency Certificates (EECs) enable these companies to validate their energy conservation accomplishments and potentially hasten the payback on energy-saving projects. EECs are generated through a defined, third-party verified process to quantify electricity use before and after the implementation of energy conservation projects. The potential monetary value derives from the presence of mandated (in some state or regional jurisdictions) and voluntary markets where EECs can be traded.

The energy efficiency partnership between IBM and Con Edison stands out for a number of reasons. One is the way it combines the complementary skill sets of an IT provider and one of the largest investor-owned energy companies in the United States. Another is the partnership's emphasis on sustained efficiency improvements, which are certified by an independent third party, Neuwing Energy Ventures, a leading verifier of energy efficiency projects. Each project begins by conducting a thorough energy audit of a customer's data center energy use and overall power and cooling profiles of the data center. This establishes a baseline to be used for subsequent comparison.

**Teaming up to help customers conserve**

Under the proposed program, IBM's role is twofold. First and foremost, IBM works with the customer to optimize the design of the data center in a way that is consistent with the customer's business process and IT architectural roadmap, while delivering optimal energy efficiency. In addition to its expertise in such critical domains as data center energy efficiency and virtualization, IBM is able to leverage its industry-leading line of energy efficient servers and storage devices. IBM's other critical technology contribution is a range of advanced energy management products that includes IBM Systems Director Active Energy Manager™ software, which enables customers to measure and control all the key hardware components of a data center, from servers and storage to air conditioning and power management systems. Developed as part of IBM's Project Big Green initiative, Active Energy Manager monitors devices through both smart power strips and wireless devices that may extend beyond traditional data center walls.

**Solution Components**

*Software*

- IBM Systems Director Active Energy Manager
- IBM Tivoli® Usage and Accounting Manager

*Hardware*

- IBM System p®
- IBM System x®
- IBM BladeCenter®
- IBM TotalStorage®

*Services*

- IBM Global Business Services
- IBM Global Technology Services—Data Center Assessments and Design Services

*Partner*

- Neuwing Energy Ventures

**Smarter Utilities**

Pressures from customers, regulators, stockholders, employees and other groups mean you need to take action today to become more efficient. "Going green" can yield real and immediate costs savings. Beyond just cost savings, there are very compelling reasons to be ahead of societal shifts and be viewed as a leader in the new sustainable economy.

At the completion of a project, Neuwing Energy conducts a follow up energy audit and from that, calculates the increase in energy efficiency on an annualized basis. Customers are then issued one certificate for each megawatt hour per year in reduced energy consumption. Of the customers that have taken part in the proposed program thus far, the average gain in energy efficiency has been 42 percent. Through server virtualization, customers have also been able to increase utilization levels of their servers and storage devices, while at the same time freeing up valuable floor space in their data centers.

**Helping to meet the goal**

Given the large share of consumption that data centers represent in New York City, Con Edison expects the proposed partnership to play an important role in helping it meet its corporate goal of reducing overall power consumption by 500 megawatt hours by 2015. Such reductions will enable Con Edison to not only avoid the major capital costs of capacity build out—but ultimately to reduce or "deload" a portion of its capacity, and thereby reduce future costs. The other key benefit of Con Edison's involvement in the partnership is its ability to work closely with its customers to achieve energy cost savings in other parts of their operations.

Rebecca Craft, Director of Energy Efficiency Programs for Con Edison, believes that the partnership brings the most essential elements for sustainable energy efficiency improvements. "Con Edison is committed to helping its customers reduce data center energy consumption by leveraging the kind of new technologies and best practices that IBM brings to bear," says Craft. "We think verification is critical to ensure that businesses are achieving real energy reductions, and these certificates could provide the kind of verification we believe is important. We support IBM in its efforts on this front."

**For more information**

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