

IBM energy management solutions: help cut costs and boost compliance



Challenge

Organisations in all industries are under pressure to cut energy costs and emissions, yet getting the right data to make effective decisions is a major challenge. Most organisations are already measuring electricity consumption – particularly for the IT infrastructure – but are likely to lack a joined-up view of energy expenditure across all functions, and may struggle to create and implement a strategic plan for reducing costs and emissions.

IBM proposal

Those responsible for the electricity bill can take advantage of new technologies to improve the quality of energy consumption monitoring and measurement across their entire estate. IBM can share its long experience of designing and running effective energy monitoring initiatives, as well as providing all of the supporting consultancy, software and hardware.

Business opportunity

Improving the monitoring, measurement and management of energy consumption can potentially deliver significant long-term cost savings, as well as help support Corporate Social Responsibility (CSR) policies and compliance with Carbon Reduction Commitment (CRC); gaining a clear view of energy consumption helps enable more accurate charge-backs; organisations with the tools to measure and manage energy consumption can better identify ways to use less energy, generate less CO₂ and make better use of existing facilities.

Rising cost and regulation

Responsibility for energy expenditure may be split across different functions and job titles; in some organisations, the facilities management team has ultimate responsibility, while in other organisations, the IT function manages its own usage and expenditure. Whoever pays the bill, it is clear that the pressure is on to reduce costs and curb rising emissions.

Energy prices have risen sharply in recent years, making electricity a significant element in the annual budget for the typical organisation. A recent survey by IBM showed that the vast majority of organisations are already carrying out basic measurements of their electricity consumption, but that it remains an area of concern – particularly in the IT infrastructure.

Bryant University worked with IBM and APC to create an energy- and space-efficient data center that reduces energy consumption by 15 percent and operational costs by 30 percent.

“IBM software gives us the ability to actively manage and reduce power usage in our datacenter. Our current work with IBM will help us realize an estimated 15 percent savings in energy consumption.”

*Rich Siedzik, Director of Computer and Telecommunications Services,
Bryant University*

Typically, measurements are at the level of an entire building, with no lower-level detail available. This makes it difficult to identify the areas that require the most focus if the organisation is to meet its targets for energy reduction. In most cases, cost is the key driver for improving energy management, but there is growing awareness of the likely impact of the Carbon Reduction Commitment (CRC), which comes into force in 2010 (see back page for a summary of the CRC penalties). Only one-third of survey respondents had detailed information on IT energy expenditure, although two-thirds had at least assessed the efficiency of their data centres.

Without effective measurements and benchmarks for energy consumption across the entire estate, it can be difficult even to identify the best opportunities for improving efficiency, let alone actually achieve lasting benefits. The good news is that new methods and technologies enable more detailed and accurate monitoring, better aggregation of data, and improved planning and control over energy consumption.

What part does IT play?

In non-manufacturing firms, up to 45 percent of all energy usage may be attributable to IT, and energy consumption in the data centre is likely to be rising rapidly. The typical data centre can consume 10 to 100 times more energy per square foot than the average office building. IT is fast becoming the single largest component of many companies' energy costs.

The Co-operative Group worked with IBM to re-engineer in-store systems and enable 'Wake on LAN' for 45,000 POS-related devices.

The ability to switch off non-essential devices at night could save 1.68 million kilowatt hours annually, reducing the organisation's annual electricity bill by an estimated £120,000.

To help achieve the best outcome for the organisation, it is important to gain a comprehensive, tightly integrated view of energy management that encompasses both IT and non-IT usage. The delivery of IT services is evolving, as organisations move towards virtualised infrastructures that use business rules to dynamically adapt to changing requirements in real time. Technology can dramatically reduce energy consumption in the data centre, which makes the IT infrastructure a “low-hanging fruit”. Equally, more effective facilities management in the future will draw heavily on information technology resources – not least in providing tools for monitoring and measuring energy consumption. Equally, more effective facilities management in the future will draw heavily on information technology resources – not least in providing tools for monitoring and measuring energy consumption.

Part of the difficulty in controlling energy costs is the fact that organisations tend to have a piecemeal approach to the problem. By working together and pooling their resources and knowledge, IT and line-of-business energy managers can potentially achieve the ultimate goal of cutting energy consumption without reducing service levels or restricting growth.

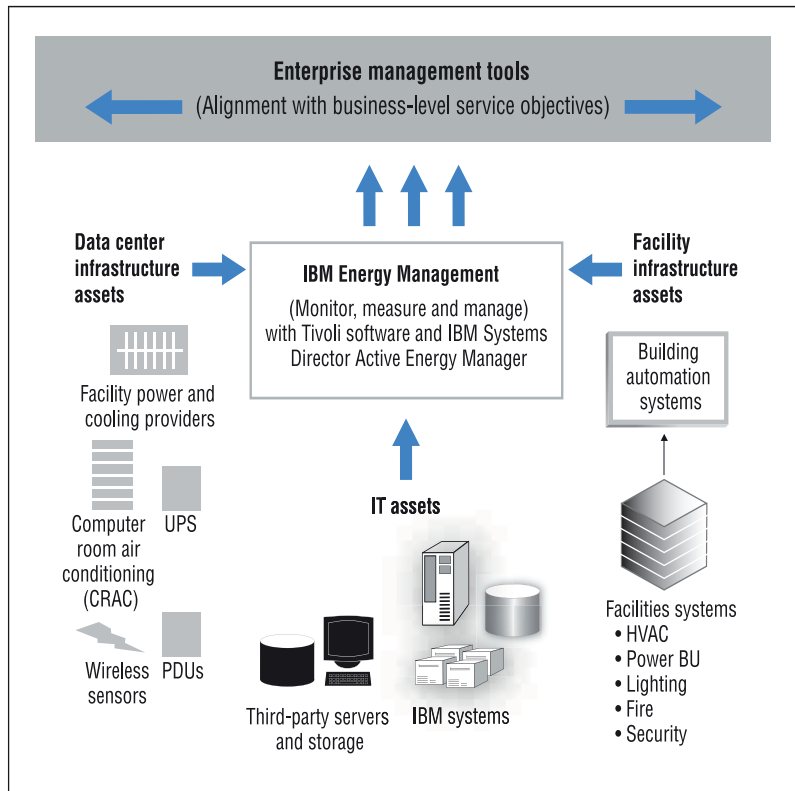
Why IBM?

With its combination of IT expertise and facilities management know-how, IBM is the ideal company for helping organisations create a united front to tackle the issue of energy management. Recent advances in metering technology have simplified the collation of detailed, granular information on energy consumption, and IBM has the tools to help energy managers determine the best decisions based on large volumes of data.

IBM offers a range of services to help organisations achieve sound results in reducing their energy consumption, based on many years of experience of major facilities transformation projects both in its own global estate and for major clients. Equally, IBM offers software and hardware to support more effective measurement, monitoring and management of energy consumption.

IBM can assist in both designing and operating a more efficient, instrumented and interconnected IT infrastructure, and offers comprehensive services to potentially optimise existing data centres.

As organisations attempt to balance the competing demands to energy consumption and expand services, it is typically the lack of consistent data that holds them back. By working with IBM to implement procedures and technologies for monitoring, measuring and managing of energy consumption across the estate, they could potentially achieve significant cost reductions and avoid the risk of financial penalties under the CRC.



IBM provides an integrated approach across the entire energy spectrum

Centrinet worked with IBM to construct Smartbunker, a 30,000 ft² data centre powered by renewable energy and featuring compact, energy-efficient IBM BladeCenter servers.

“We’re environmentally efficient through both our power supply and the IBM computers which help us to cut energy usage by about 60 percent.”

Kelly Smith, Managing Director, Smartbunker



CRC penalties

Failure to register

- Immediate fine of £5,000 for failure to register by the deadline
- Further fine of £500 per working day for each subsequent working day in which you fail to register until last working day of July (the next reporting deadline)
- Publication of the fact that your organisation is non-compliant.

Failure to disclose information

- Where your organisation has a Half Hourly Meter (HHM) that does not meet the qualifying threshold and you fail to make an information disclosure, there will be a one-off fine of £1,000.

Failure to provide a footprint report

- Immediate fine of £5,000 for failure to provide a footprint report by the reporting deadline
- Further fine of 5p per tonne of CO₂ per working day for each subsequent day in which you fail to report, up to a maximum of 40 working days. This part of the fine is doubled after 40 working days.
- Publication of the fact that your organisation is non-compliant.

For further information on the CRC, please visit: <http://www.defra.gov.uk/environment/climatechange/uk/business/crc/pdf/crc-userguide-090312.pdf>

For further information on how IBM can help you reduce your electricity costs and achieve CRC compliance, please visit:

ibm.com/uk/gogreen/index.shtml

IBM United Kingdom Limited

PO Box 41
North Harbour
Portsmouth
Hampshire
PO6 3AU

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