

Why are you paying for **wasted energy** in IT?

Energy costs continue to climb and yet up to **a third of the money that companies spend on power could be wasted**¹ due to inefficient IT infrastructure. Power demands are predicted to outstrip supply in the next few years, so those costs won't come down. **Energy regulations** and **carbon reduction targets** are adding to the pressure. **So why aren't you taking a serious look at your IT energy use?**

What if there were a way to **reduce IT power consumption up to 80% and cut floor space requirements up to 90%?**²

Rationalising and consolidating IT infrastructure coupled with **new delivery models** can help businesses to achieve those goals, while reducing carbon emissions and improving efficiency.

ENERGY: THE NEED TO DO MORE WITH LESS

According to the UK's Confederation of Business and Industry (CBI), the Carbon Reduction Commitment (CRC), carbon price floor and the hikes in oil and gas tax are adding unprecedented energy specific cost pressures³ to businesses. The president of the CBI went so far as to warn that the UK could lose businesses due to energy pressures.⁴ A recent study predicts an annual increase of 19 per cent in worldwide data centre energy use, equivalent to "the annual electricity consumption of almost six million households".⁵ And Ofgem issued a warning that power cuts could start as early as 2016 if energy demand outstrips supply as predicted.⁶ **This is no longer the "green agenda" – it's the cost of doing business.**

KNOW YOUR SYSTEMS

How can businesses address these issues quickly and at what cost?

First, determine how much energy is being consumed and where.

Some 40 per cent of an average business's total energy bill is eaten up by IT and information systems equipment.⁷ Of that, approximately 40 per cent is consumed by data centres. IT infrastructure burns fuel, requires air conditioned floor space and staff to operate and maintain. Businesses looking for ways to reduce energy use and carbon emissions successfully need to focus on their IT infrastructure.

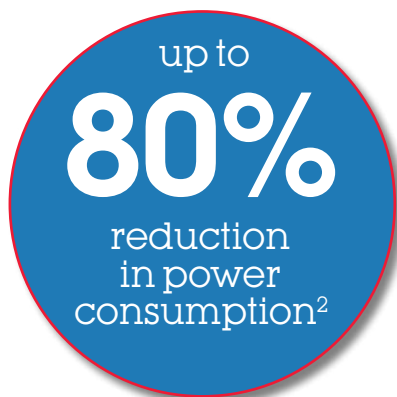
Second, define your workloads. Different workloads use different styles of computing, each with its own energy profile. Systems that are sitting idle are drawing power unnecessarily. By defining workloads, businesses will be able to streamline systems in order to yield the best performance with the most efficient energy use.

- Transaction processing and database involves thousands of online users, large transactional databases and 24x7 operation.
 - Business intelligence and analytics has fewer users but more complex queries, multiple data sources and a large data warehouse.
 - Business process management unites content, people and process flows, orchestrating multiple services and empowering business users.
- Smarter IT systems deal with each workload according to its needs, creating a more efficient draw on power. Workloads designed and deployed in a smarter way will help improve this efficiency while introducing greater capability in the system. **Re-deploying existing workloads can improve performance** and overall service levels. **New workloads can be deployed** more quickly by taking advantage of existing skills, allowing IT infrastructure to be scaled alongside the needs of the business. This will create workload-specific systems that need less energy, fewer people and less space to operate with optimal efficiency.

More with Less: improve performance and efficiency while cutting costs

An integrated IT solution provider for banks cut its cooling requirements with up to a 50 per cent reduction in energy use and approximately 10 per cent improvement in performance. IBM was able to deliver the performance required and the savings needed through a combination of improved data centre and systems management. Automated procedures for firmware upgrades produced time savings. Major cost savings were achieved in energy consumption in terms of primary power, heating and cooling.

Similarly, a manufacturer of fittings for the furniture industry used IBM's infrastructure solutions to cut its IT power usage approximately in half, reduce back-up times up to 30 per cent and improve scalability, while reducing its IT management costs.



More efficient energy consumption will help reduce emissions as well as other scarce resources across the enterprise, creating a more sustainable IT environment in the organisation.

Third, consolidate, rationalise and look at new delivery models.

Consolidating workloads can reduce data centre complexity, making them easier to manage and improving their overall efficiency. Most systems include spare capacity in order to meet unspecified future demand. This is an ongoing power drain and is an inefficient use of assets. Rationalising IT will reduce equipment – and therefore excess heat and power use – as well as minimising the need for staffing and floor space requirements, while ultimately helping to “future proof” the infrastructure.

New IT delivery models offer an opportunity to both consolidate and rationalise systems while producing savings. For example, cloud computing offers scalable efficiency and analytics reduce reporting and information management requirements. Working with IBM, the Bank of Russia rationalised its server estate and was able to reduce technical staff server support requirements by 85 per cent⁸ while streamlining their systems.

HOW IBM CAN HELP

A one-size-fits-all approach is not always the best option when it comes to **creating a more energy and performance efficient data centre.** Instead, IBM designs IT systems that are fit for purpose, taking advantage of existing IT infrastructure, supporting specific workload in the right way to deliver IT in an optimised fashion, as well as considering the physical environment in the process.

For example, IBM has developed a system that can depict temperature distribution of data centres in three dimensions. Called Mobile Measurement Technology (MMT), the system measures temperature and humidity within the physical environment, capturing cool air flows, hot spots, cold spots, inefficient circulation of cool air and other weak points.

This data is used to create 3D temperature profile models which are

then analysed to produce new energy efficiency strategies. Streamlining both IT infrastructure and the physical space in which that infrastructure operates – from air flow to cooling systems – is a powerful combination, pulling all components together for optimum performance. Tools like Active Energy Manager allow customers to both quantify and control the power usage.

In IBM’s experience, a smarter computing IT infrastructure is:

Tuned to the task: optimised systems drive greater performance and efficiencies, as well as improving IT economics (total cost per workload can be reduced by up to 55 per cent). A modular approach allows the data centre to be scaled up or down, depending on requirements.

Managed in the Cloud: more efficient than the typical scattergun systems found in most organisations and requiring far less power, the cloud reduces the need for wasteful, costly, standalone servers. IBM cloud infrastructure makes the best use of current structures combined with the latest service delivery models to reach each organisation’s business and IT needs with optimal efficiency.

Designed for data: IBM designs analytics systems that harness all available information with the greatest possible efficiency.

Smarter IT infrastructure will help reduce energy use and cut carbon emissions and taxes. IBM can help businesses get there through data centre environmental studies, IT audits, online IT energy assessment and a range of workshops, including:

Carbon Strategy Workshop: Review good practice in energy management, set principles and objectives, and develop a roadmap to achieve those objectives.

Smarter computing workshop: Designed to help organisations review their IT estate in order to optimise their infrastructure using the latest and most cost effective delivery models.

Infrastructure consolidation studies: Determine how to minimise data centre complexity while reducing energy consumption, thereby improving efficiency while reducing the total cost of ownership for IT infrastructure.

Proving the power of the Cloud

Working with IBM Cloudburst technology:

- **CITIGROUP** reduced the average delivery time for new resources from months and weeks to days and hours. Systems administrators who supported 50 physical servers now support more than 600 servers in the cloud. This represented over 200 per cent increase in system admin productivity while reducing the energy consumed by idle and under utilised systems.
- **ACXIOM** improved capacity five-fold in their existing data centre footprint using a cloud-based model, improving customer retention and capturing new business.
- **THE CITY OF NORFOLK** improved storage performance up to 40 per cent and cut power consumption approximately in half, enabling it to deploy automated parking systems and police in-car video surveillance.

CONTACT US

To find out how your organisation could do More with Less, contact your IBM representative, or:

Pete Kearney

Mob: +44 (0) 7802 245354

Email: kearnep@uk.ibm.com

Estelle Andlauer

Mob: +44 (0) 7879 641546

Email: estelle_andlauer@uk.ibm.com



© Copyright IBM Corporation 2011

IBM United Kingdom Limited

76 Upper Ground

South Bank

London

SE1 9PZ

The IBM home page can be found at ibm.com

IBM, the IBM logo and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries.

A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates. Copying or downloading the images contained in this document is expressly prohibited without the written consent of IBM. This publication is for general guidance only.

All rights reserved.

References

- 1 "Watt a Waste: 32p in every pound powering IT and general office equipment". Richard Lanyon-Hogg, IBM Chief Technology Officer for Energy Efficiency. [egovmonitor.com](http://www.egovmonitor.com/node/43723). 13 September 2011. <http://www.egovmonitor.com/node/43723>
- 2 "Smarter Computing". IBM presentation aligned with CIO study. May 2011.
- 3 CBI chief calls for Carbon Floor Price exemptions for energy intensive industries. CBI press release. 14 June 2011. <http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/470e82f74b3130db802578ae00570348>
- 4 "UK faces job losses as businesses threaten to flee abroad to escape green energy levies". Robert Mendick, Edward Malnick and Andrew Cave. The Telegraph. 12 June 2011.
- 5 "UK datacentre investment is 2nd highest in the world – but expansion rate is 2nd slowest". Cliff Saran. ComputerWeekly.com. 7 September 2011.
- 6 "Britain 'facing electricity blackouts'". The Telegraph. 21 April 2010.
- 7 "Watt a Waste: 32p in every pound powering IT and general office equipment". op cit
- 8 "Bank of Russia expands services by reducing data centers". IBM case study. http://www.ibm.com/smarterplanet/in/en/banking_technology/examples/index.html
- 9 "Energy Efficiency Approaches". Presentation by Nichol Riggott. Executive Consultant, IBM GTS.