

# Storage Solutions

---

## Beating the Power Crunch



Just as any political scandal will inevitably be referred to in the popular press as “something-gate”, it is now *de rigueur* to refer to a crisis in supply of anything as a “crunch”. It therefore comes as no surprise that Datacentre managers are talking of an impending “Power Crunch”.

Over recent years, Datacentre power consumption has come under more rigorous scrutiny. Rising energy prices and corporate focus on environmental issues have forced IT departments to look for ways to reduce power consumption and carbon emissions. At the same time, continuing growth in demand for Datacentre services and higher component-level power requirements have exerted pressure in the opposite direction. Now there is a new element to consider. Increasingly, limits are being reached on the amount of power that can be provided to the Datacentre as a whole. Where previously there were very persuasive arguments to reduce consumption, now there is no alternative.

Datacentres are massive consumers of power. For example, datacentres account for approximately 1.6% of all electricity used in the US. However, it's worth noting that only around 45% of the power consumed by the average Datacentre is used to run IT assets.<sup>1</sup> There are some aspects of basic facilities management that will help reduce consumption. Air-ducts, ventilation routes and raised floors are often blocked by networking and power cables. Blanking panels are not fitted appropriately and doors are left off racks after hardware maintenance procedures. All these factors combine to reduce the efficiency of the datacentre cooling system.

Anything we can do to increase efficiency of cooling and ventilation systems is welcome, but what if we just turn off the chillers completely? There is renewed interest in Free Air Cooling or FAC; using outside air for most of the time and only running the chillers during hot weather. We may complain about the great British weather, but it can be the Datacentre manager's best asset in reducing energy bills by facilitating FAC for almost the entire year. FAC was once the norm and power limitations suggest a large-scale return for new-build datacentres.

Technology adoption and exploitation also has a major role to play in reducing demand for power. Virtualising server and storage resources can significantly reduce power consumption as well as delivering other benefits. Computacenter's experience suggests large-scale server virtualisation projects can deliver reductions in power consumption of greater than 80%. Further, once the IT estate is largely virtualised, automation and orchestration tools can be used to drive further power efficiency. For example, virtual servers can be moved seamlessly between physical hosts to consolidate applications onto a smaller

---

<sup>1</sup> Source : Creating Energy-Efficient Datacentres, US Department of Energy, Datacentre Facilities and Engineering Conference, May 2007

physical footprint. Idle servers can then be powered off and only powered back on when demand for processing power increases.

One particularly interesting development in reducing power consumption is tighter integration of IT assets with cooling systems. One example is HP's Dynamic Smart Cooling or DSC. DSC is a combination of hardware and software that continuously adjusts datacentre air conditioning systems, directing cooling where and when it is required. It involves deploying a network of sensors on IT racks that monitor air temperatures in real-time. This solution is integrated with cooling control components from leading datacentre equipment manufacturers so DSC can directly control the air conditioning in the datacentre. Power requirements for datacentre cooling systems can be cut in half using HP DSC technology.

Value Partners such as Computacenter identify, analyse, and implement technologies with customers to demonstrably reduce power consumption in today's datacentres. Such strategic implementations will help IT departments satisfy ever-increasing demand for Datacentre services in the face of finite power supply.