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# Choosing Secure Power Infrastructure for a Modern Business

## Understand what your business needs

*The results are in* – with modern business voice and data convergence, the business telephone system, with its multitude of IP servers channeling both voice and data through the same lines, looks more and more like a data centre. The growth of this technology however, has created an increased dependence on it. Consequently, controlled shutdowns are no longer acceptable. Businesses rely on, and expect power system availability for continuity of service – always. If the power stops, so does the business. Longer reserve power run times are necessary for converged data networks with IP telephony as well as system/data processing requirements which are commonly 24/7. On top of this, there are expectations of steadily rising energy costs and, continued growth in already significant business IT energy demand. This means there is a real need for finding new ways to make backup power systems operate with a high level of efficiency.

That said, it is not unreasonable to expect some flexibility from power systems infrastructure too. These need to accommodate business growth and affordability. Convenient scalability allows capital expenditure to match what is needed without additional spending on excess capacity. Power system modularity offers this and aids system operating efficiency at the same time. Safe and simple ‘plug and go’ in-house installation with little or no maintenance reduces operating costs, making it more affordable still. As technology advances and becomes more specialized, onboard intelligence (e.g. for protecting expensive batteries), while remaining easy to use and customizable to the requirements of any organization, also become more important.

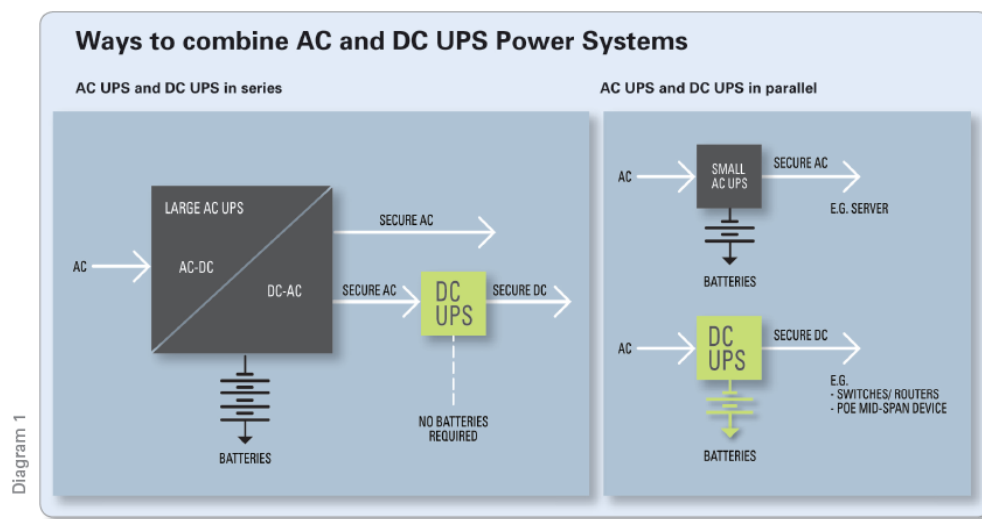
This might all sound like a wish list for the future but some of the latest generation AC and DC UPS power systems can offer all of this. Businesses should consider all of these attributes before deciding on a secure power solution, if they want to get a really ‘sharp’ solution that will minimize the impact on the business.

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## Optimizing Between AC and DC UPS Solutions

An AC UPS is traditionally the standard solution for upstream AC backup to a data centre or other business critical equipment. Until recently they've seemed to be the only option but they have come at a price. Conventional AC UPSs have been considerably inefficient (typically 70-80%). Consequently, the cost of cooling to extract that excess heat to protect expensive equipment such as batteries was high. And most of us have heard stories of when that expensive UPS didn't work when it was needed, or when the load was accidentally dropped during routine servicing.

More recently, there have been examples where organizations have swapped out the entire power infrastructure from AC to a completely DC powered network. They have been seeking the advantages of the inherently high DC reliability and efficiency of its architecture (approximately 90-93%) for large reductions in power consumption. Results reported are typically of power savings of 30% to 40%<sup>1</sup> mostly on cooling. But if you're not ready to go the 'whole hog' and swap out your entire power infrastructure then there is still good news. The most advanced AC UPS systems from Eaton – **the Eaton® BladeUPS™** now boasts up to 97% efficiency on a daily operating basis when backup is not required. Better still, you can couple these efficient AC UPS systems with the high efficiency and super high reliability of a DC UPS in the total infrastructure design (see diagram 1).



This will optimize different levels of equipment backup and add-on power, for example adding Power-over-Ethernet (PoE) switches, and get the best of both worlds in terms of the attributes that have been discussed above.

In fact, while the Eaton BladeUPS ticks a lot of the features discussed above such as efficiency and cost effective modular scalability, Eaton's **Enterprise DC UPS** also has an impressive match to the full list of requirements. It operates with high efficiency on-line and off (which also aids extended backup), is inherently reliable by design with load directly linked to

the batteries, is safe (48V), with simple 'plug and go' modular design and offers cost-effective scalability. These are all reasons why the telecommunications industry has exclusively used DC systems in their networks worldwide since the dawn of that industry. Now these same benefits have been packaged for the IT sector with compact design, incredibly easy installation and automated setup. The onboard Enterprise intelligence and advanced LAN/WAN communications allow configuration adjustments for larger organizations with remote monitoring. Better still, they are suitable for in-house IT installation and require little or no maintenance. Lastly, and as every IT expert knows, it is paramount to choose a supplier with long term experience in the market. And only an organization that offers a complete range of AC and DC UPS power systems can offer you unbiased advice that will be best suited to your needs.

Ref 1: *ITPRO Internet News*, August 03, 2007, <http://www.itpro.co.uk/121635/data-centre-cuts-energy-use-by-40-per-cent>

## **About Eaton**

Eaton Corporation is a diversified power management company with 2007 sales of \$13 billion. Eaton is a global technology leader in electrical systems for power quality, distribution and control; hydraulics components, systems and services for industrial and mobile equipment; aerospace fuel, hydraulics and pneumatic systems for commercial and military use; and truck and automotive drive train and power train systems for performance, fuel economy and safety. Eaton has 82,000 employees and sells products to customers in more than 150 countries. For more information, visit [www.eaton.com](http://www.eaton.com).

## **About Eaton's Telecommunications Solutions Division**

Eaton's Telecommunications Solutions Division provides DC power systems; associated products and services; hydraulic-magnetic circuit breakers and distribution modules to the telecommunications and other critical power industries.

DC power solutions include 24V and 48V DC power systems, battery monitoring and control systems, cabinets and enclosures, and a wide range of services including remote monitoring, turnkey integration services and site support.

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