Tools and techniques to beat electricity price rises

John Hudson says business can avoid paying more for electricity by understanding the options available

There are many energy management tools and techniques on offer to facilities managers: renewables, battery storage and voltage optimisation, to name but three, but the choice can be confusing. One size does not fit all, so understanding the risks and benefits of any new investment will be the key.

Renewables may have a tarnished reputation but technological advances and more professional providers are making a real difference.

Installed UK solar PV capacity hit almost 11.5 GW in the year to December 2016, an increase of 19% year on year. Yet in December 2011 total UK solar PV capacity stood at only 750 MW. Feed-in Tariffs (FIT) are still available for commercial solar PV installations, with an ROI in the region of 15% and a levelised cost of energy of less than 3p per kWh. Returns depend on ease of installation and percentage of onsite use, providing benefits of greater energy independence and reduction in carbon footprint.

The levelised cost of energy metric is a very useful way for facilities managers to evaluate renewable development proposals. It can be expressed as an equation:

capital cost of installation + lifetime costs of operation & maintenance - FIT payments over 20 years

predicted lifetime generation of the system.

The resulting pence/kilowatt hour could be just 25% of the normal grid price over 20 years, thanks in part to the fact that no pass-through costs are levied on own generation.

Price management using battery storage

There is a real buzz around battery storage at present and whilst still in its infancy, the technology promises to be a game changer in electricity price management.

The key to successful battery storage development is to have a system designed and built specifically for your premises. Not all developers provide this service and so there is a need to proceed with caution.

Price management using batteries is achieved in a number of ways. Being able to use a battery to power your site during the peak time pricing period is the main source of benefit. This reduces the pass through costs of Triad, Red Duos and future Capacity Market charges being levied. In addition, batteries are capable of peak-demand shaving that otherwise would incur maximum demand penalties. The ability of a battery to take in cheap night time electricity, or store surplus on site renewable generation for use during the day, adds another valuable dimension.

A replacement UPS

Another interesting application for battery storage can be as a modern UPS system. Batteries can work alongside, for instance, a diesel generator, or in some circumstances replace ageing UPS systems altogether. Modern batteries are reliable, scalable and modular. Some managers use UPS for their IT only but others need them as stand-by generators for all site processes. Battery systems are up to the task and will still have spare capacity to participate in grid balancing schemes.

Voltage optimisation

If a site is supplied with electricity at a higher voltage than is needed it could result in excess consumption and inflated electricity bills. The on-site equipment is consuming more energy than necessary. Voltage optimisation reduces the voltage of the electricity supplied but without compromising the performance of the equipment. It is an inexpensive, widely used on-site installation and proven to reduce electricity bills. ■

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