

Avoiding power cuts: how VSDs could be vital

Recent warnings that the UK may be running short of electricity and risks extended power cuts, strengthen the case for the wider use of energy-saving technologies such as VSDs. Steve Brambley, deputy director of Gambica*, argues that even small installations have a role to play.

In previous columns, I have discussed the importance of energy efficiency in motor systems from the perspective of running costs. Gambica often highlights the significant amount of energy used by motor-driven systems, the large potential for energy saving through control, and the relatively speedy payback on investment when the lifetime costs of operating a system are calculated. Such cases are seen as a direct financial incentive; using less energy reduces the cost of running the equipment over its lifetime, offsetting the cost of any investment.

However, there is another compelling reason why we should strive to reduce our energy consumption – the risk that there isn't enough energy to meet our needs. In its Electricity Capacity Assessment report for 2014, the electricity industry regulator Ofgem warns that the margin of capacity against demand in the UK will fall to just 3% in 2015/2016, compared to 14% in 2012. This pushes the expected loss of load per customer from less than one hour per year to between five and nine hours. If controlled disconnections take place, then it will typically be industrial and commercial sites that are affected before homes.

The energy deficit situation is however a harder sell when making the case for adding a variable-speed drive to a cooling plant or installing a soft-start on a conveyor system. Until now, it has been very rare for electricity users to experience any significant power supply issues – the customer just doesn't see evidence of the risk and may even see it as scaremongering.

Equally, individual users possibly don't see it as their issue, or as something that they can contribute to. They may see their 11kW fan system as a drop in the ocean compared to steel plants and oil refineries. Looked at in this way, your car consumes a very tiny proportion of the global oil production, but when there are over a

billion vehicles on the planet, that adds up to a significant demand. Similarly, there are an estimated 230 million industrial electric motors globally, equating to 40% of the planet's total electricity consumption.

The fact is that this is everyone's problem because, in the balance of supply versus demand, any shortage leads to higher prices. By collectively continuing to use more energy than we need to, we risk inflating the cost of that energy. It could be that if capacity was limited, energy would attract a higher premium price at certain times of the day. The domestic consumer can perhaps choose to run the washing machine overnight, but a factory cannot easily stop production from 3pm to 5pm.

Peak-time tariffs are perhaps one financial consequence of unchecked electricity consumption, but the disruption and waste caused by unplanned power cuts are potentially very costly too. I have some recollection of blackouts in the 1970s. Playing cards by candlelight now seems like a pleasant nostalgic memory, along with space hoppers and spangles. Since then we have taken electricity supply for granted, but can you imagine the disruption that would be caused by losing electricity for hours at a time? It has happened in the US and South Africa in recent times, so it isn't only confined to the past or to developing countries.

The solution isn't simply to create more capacity and generate more electricity. Using less energy is not only possible, but financially advantageous.

Energy efficiency is not just a means to lower bills today, but an insurance against higher energy prices tomorrow and a way to avoid blackouts in the future. ■



* Gambica is the trade association for the automation, control, instrumentation and laboratory technology sectors in the UK. For more information, please contact the deputy director, Steve Brambley, on 020 7642 8090 or via sbrambley@gambica.org.uk
www.gambica.org.uk