Fit for purpose

Stuart Clegg, commercial director of energy storage and voltage optimisation specialist Powerstar, explains how facilities can reduce energy costs and improve electrical supply and reliability.

WITH their range of electrical devices, long operating hours and inflated energy costs, as well as increasing expectations to deliver robust sustainability strategies, physical activity facilities could benefit from energy management technologies offering lower energy consumption and carbon reduction benefits.

Voltage optimisation, which optimises the incoming supply, is one of the most established technologies for delivering reduced electricity costs and sustainable benefits, and is being utilised across leisure facilities.

Historically, the UK's electricity network was required to supply voltage to a building within the range of 225V-254V, which has resulted in many facilities still being supplied with voltages in excess of 242V, despite electrical equipment operating optimally at around 220V. The oversupply of voltage leads to increased electricity costs, higher electricity consumption, high levels of carbon emissions and added wear and tear to on-site equipment.

Tadcaster Pool is saving 16.6 per cent on its energy consumption

There are some considerations which need to be taken prior to installing voltage optimisation solutions. Precautions should be taken when sourcing and installing an off-the-shelf system, as the product may not be engineered to provide voltage at the level the facility requires for optimum efficiencies.

Interested managers should seek out a voltage optimisation provider that's able to deliver a concept to completion service, offering full energy analysis and monitoring of a site's electrical supply in addition to a history of successful trading. A site will generally require a tailored solution that is engineered specifically for the facility in order to generate maximum energy savings and CO2 reductions without causing unnecessary disruption.

Waterworld, Newquay Sports Centre and Polkyth Leisure Centre are three centres in the South West that had set targets to cut energy consumption and reduce their impact on the environment without affecting the day to day operations of the centres or interfering with the customer experience.

Following the installation of voltage optimisation systems, total electricity consumption across the three centres reduced by an average of 12.5 per cent, with each centre also benefitting from overall improvements to its energy efficiency ratings.

Each facility required a different approach to the technology and a unique solution was designed, engineered and manufactured to bespoke site and voltage characteristics. Each installation was carried out within specific parameters set by the centres to minimise disruption and manage customer experience.

Following installation, all three voltage optimisation systems continue to operate and achieve savings without any negative impact on customers, operations or staff. In addition, the savings achieved from the facilities' electricity reductions have been reinvested into customer facing services and towards each centre's strategic objectives, such as inclusive fitness initiatives.

Elsewhere, Tadcaster Community Swimming Pool had noticed increases in its energy consumption and was seeking a solution that would help lower costs and improve electricity supply. After monitoring the on-site requirements, we discovered that the average voltage delivered to the site was 247.5V, and recommended a bespoke engineered solution in the form of a 144kVA Powerstar LITE to reduce the average supply by 22.5V.

Following a successful installation, the centre is now saving 16.6 per cent on its energy consumption, which is an annual saving of 79,650kWh and a yearly reduction of 43.1 tonnes of CO2 emissions.

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