

Adding certainty to energy savings at the University of Plymouth

Why it is interesting: Universities are centres of excellence for learning and research. The scientific rigour with which studies are carried out is what makes the institutions highly regarded. The University of Plymouth worked with **powerPerfect** to install, not only, Voltage Optimisation but sub metering too, in order to assess the project's performance.

The University of Plymouth, Cookworthy Building

Annual Savings

kWh:	72,467
CO ₂ kg:	51,500
£:	11,350
Av. saving (%):	12.4

Don't take our word for it...

"When you hear about a technology that reduces energy costs and carbon and comes with such a short payback, as an academic you tend to be quite sceptical. The verification service provided by EEVS and the metering solution by EDF Energy, provided the reassurance we needed."

Paul Lumley
Energy and Environment Manager



Further information

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With over 20,000 students Plymouth University has a large carbon footprint and, as a responsible organisation, it has been taking measures to minimise its environmental impact. The University has pledged to be carbon neutral by 2030 and already meets the stringent standards of ISO 14001 (Environmental Management System).

Good environmental and social responsibility is important for universities, keen to set standards for the student population. However, because environmental legislation (such as the CRC Energy Efficiency Scheme) now means that the University could be financially penalised if it does not reduce its carbon emissions and energy use, there is a big financial driver for such measures too.

Against this backdrop, it is fitting that the Cookworthy Building, home to the Plymouth Business School since 1994, is one of several buildings at the University that are benefitting from **powerPerfect's** voltage optimisation.

The building has been the venue for students learning everything from business planning and financial decision making to corporate social responsibility.

Using the same business acumen being taught to its students, the University responded to the drivers for energy efficiency – namely financial merit and environmental responsibility.

An investment case for voltage optimisation was thoroughly prepared for the University by **powerPerfect**. The four step assessment carried out on all projects, accurately predicts the potential payback and provides a set cost for the project.



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This investment case comes in the form of a formal quote outlining the predicted energy, financial and carbon savings.

As the numbers in the investment case are backed by **powerPerfector's** guarantee on Return on Investment (ROI), which removes the risk attached to such an investment by the University. In short, if the University failed to meet the guaranteed Return on Investment figure, **powerPerfector** would reimburse them for the difference.

*"The savings achieved by **powerPerfector's** VPO® far exceeded our expectations."*

Paul Lumley
Energy & Environment Manager

In this case the predicted savings were exceeded, so the guarantee did not need to be invoked. Savings of 12.4 per cent on energy savings means financial savings of £11,350 and a payback of less than two years.

Measuring the success of Voltage Optimisation at The University of Plymouth?

Sprawling campuses full of lecture halls, research labs and accommodation can have large power requirements. The increasing use of IT and other electrical equipment means that universities are drawing more power than ever and in some cases the electrical infrastructure of each site has not been designed with this usage in mind. This means that measuring, let alone reducing energy use can be difficult.

The University of Plymouth has taken a proactive approach to energy management and in 2009 began investigating voltage optimisation as an option. Unfortunately some of the most suitable sites and buildings did not have sub-metering. This meant that power requirements were unknown and also that savings could not be accurately assessed. Without sufficient impartial half hourly data prior to the install it is impossible for a savings

assessor to prove what the project has achieved. This means that any voltage optimisation project could underperform and the university would have no recourse to the supplier.

powerPerfector, working with EDF Energy, proposed a solution that incorporated metering into the installation. By installing fiscal grade metering six months before the installation of the VPO® units it was possible for a savings assessor to accurately measure the performance of the project against the savings guaranteed at tender.

Envirolec South West Limited successfully completed the **powerPerfector** installations to a high standard and during shutdown periods that limited any disruption to the normal operation of the University.

Creating a savings meter

With so many suppliers of voltage management equipment, it can be difficult to know which is the right choice for you. Many promise unusually high or unique ways of measuring savings.

The main factor, which should never be overlooked, is that half hourly data from an independent and impartial source (such as the fiscal meter) is the only data that should be used. Some suppliers offer 'built in metering' which can't be considered independent as these suppliers have an interest in 'proving' savings and justifying their products.

This is why **powerPerfector** work with your energy supplier to give you independent, impartial results.

The energy data is then analysed by third party Measurement and Verification experts using the International Performance Measurement and Verification Protocol (IPMVP).

This ensures that external factors are taken in to account when calculating savings. It is vital at universities, because savings will vary drastically depending on factors such as the weather, the number of students around and the types of activities taking place.

This performance verification provides all-important comfort that you will get value for money.

There are a range of case studies and client testimonials available on our website, please visit www.powerperfector.com for further information.