



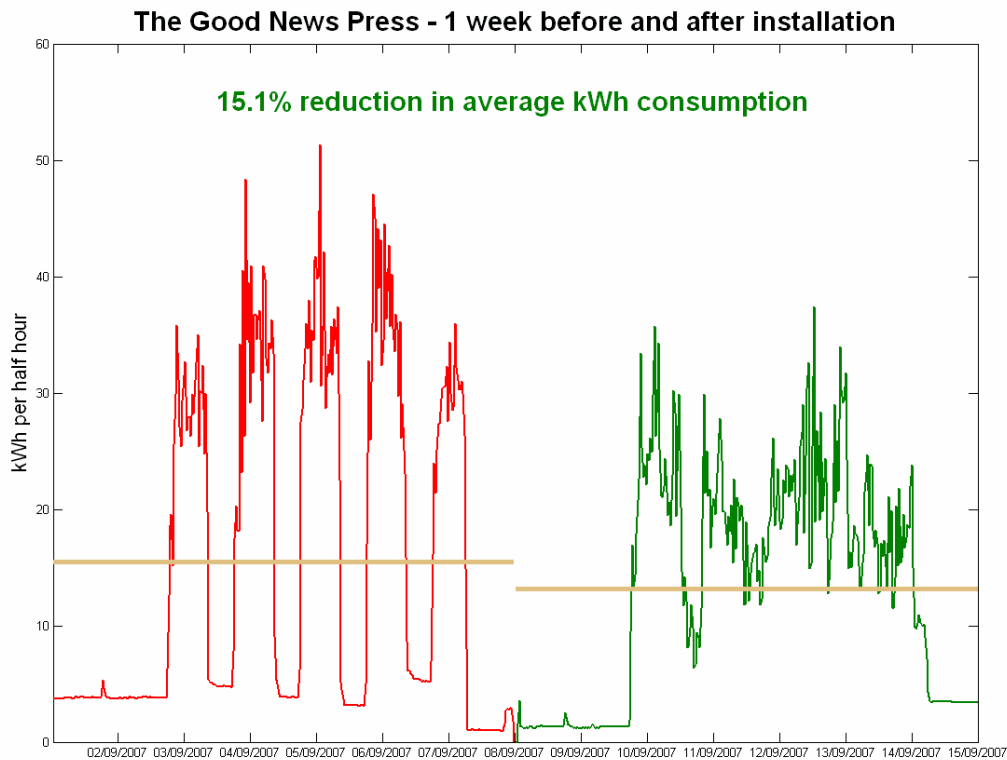
The Good News Press

Analysis of electricity consumption data following *powerPerfector* installation

Report January 2008

A 150kVA *powerPerfector* Voltage Power Optimiser with a 9% optimisation setting was installed at The Good News Press, Essex, on 8th September 2007. The following is an analysis of the half-hourly electricity consumption data for the site. Optimising voltage by 9% ordinarily yields a 14.5% reduction in average electricity consumption. As shown in the charts below, in this case average consumption for the period since the *powerPerfector* was installed has been reduced immediately by **15.1%**, with savings of **18.5%** evident from a longer-term analysis.

To assess the immediate effect of the *powerPerfector*, we plot the chart below, showing the kWh consumption 1 week before and after installation. Average half-hourly consumption has been reduced from **15.5kWh** during the week before installation to **13.1kWh** the following week – a saving of **15.1%**. There has been an immediate improvement in the electrical efficiency of the site, as electrical equipment is supplied with an optimised voltage.

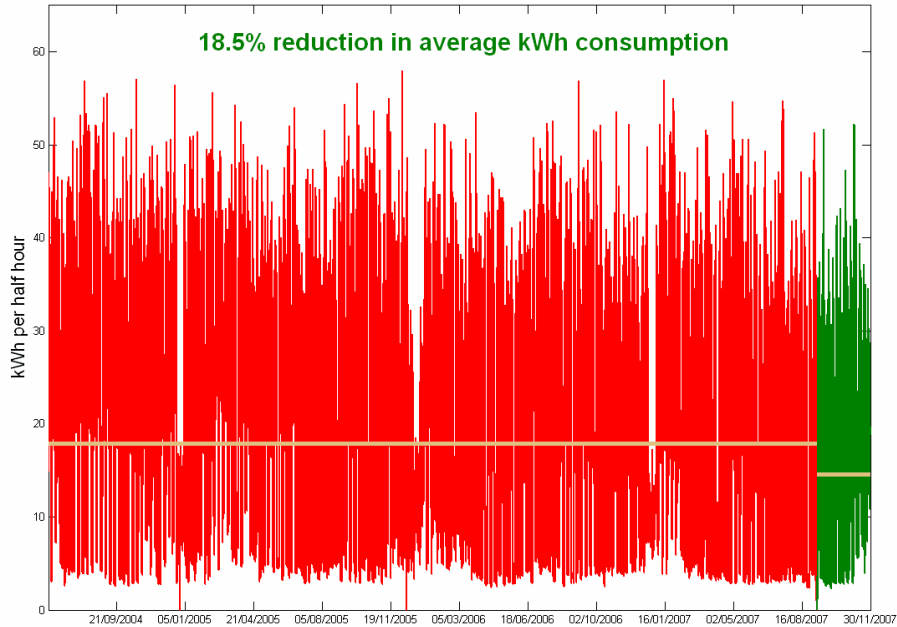


Taking a longer-term view of the site's electrical energy consumption, we plot the chart below. This shows average half-hourly kWh consumption since June 2004.



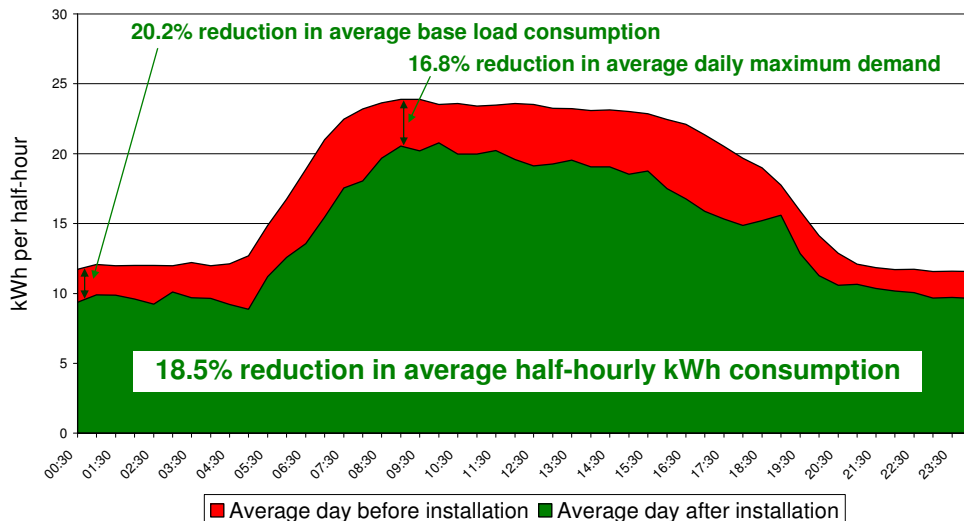
The reduction in consumption levels following the **powerPerfector** installation is visually apparent. From June 2004 to September 2007, an average **17.8kWh** per half-hour was being consumed, which has been reduced to **14.5kWh** since installation. This is a saving of **18.5%**.

The Good News Press - all available data - period from 08/06/2004 to 30/11/2007



The effect of this saving on an average day's electrical usage on the site is shown in the figure below, with the red area representing an average day before installation, and the green area an average day afterwards. There has been a reduction in the energy used throughout the day, including at peak operating time (around 08:30) and overnight when the site is running at base load.

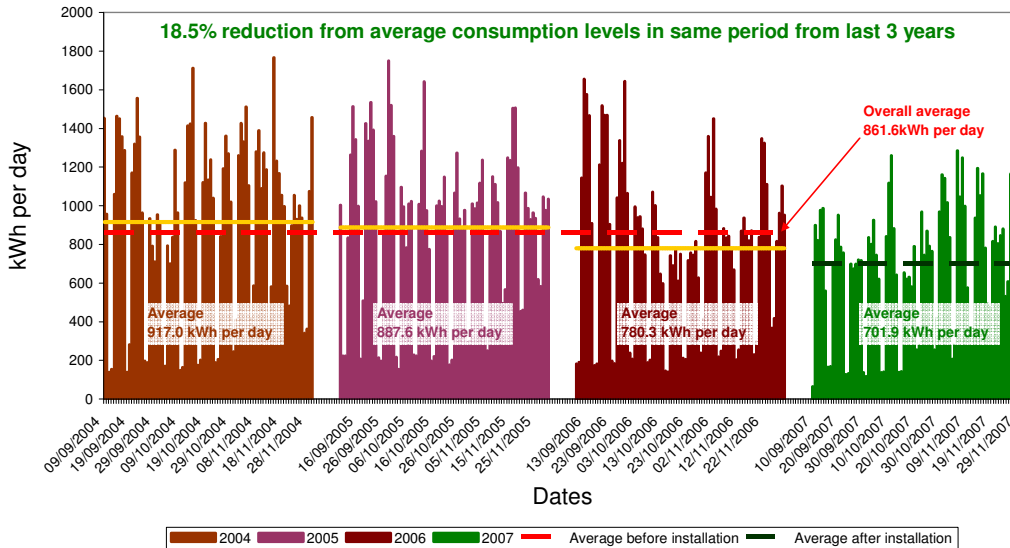
The Good News Press - average daily consumption profiles





It is also useful to compare the period since installation with the same period from previous years. Readings are available for this site going back to 2004, so it is possible to show the same period for each of the last four years. Consumption for 2007 is markedly lower, with daily kWh consumption reduced by **18.5%** from the average for 2004-06.

The Good News Press - 2004 vs 2005 vs 2006 vs 2007



In conclusion, analysis of the electricity consumption since the installation of the **powerPerfector** indicates that savings, which have exceeded predictions, are being made relative to previous consumption levels going back to 2004. The **powerPerfector** is ensuring that the site operates with a high level of efficiency, as well as benefiting from improved power quality and protection against transients of up to 25kV.

Observations

The graph depicting the electricity consumption 1 week before and after the installation of the **powerPerfector**, highlights that in the week after the installation, equipment has not been switched off overnight. This is contrary to previous consumption trends before the installation, and is not an isolated occurrence as this is seen again a few times in October and November 2007. Electricity consumption and costs could be further reduced by rectifying these anomalies, if they are unintentional.