



# connect

PowerSave Reducing energy worldwide

 Issue two

## Welcome...

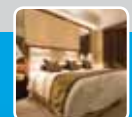
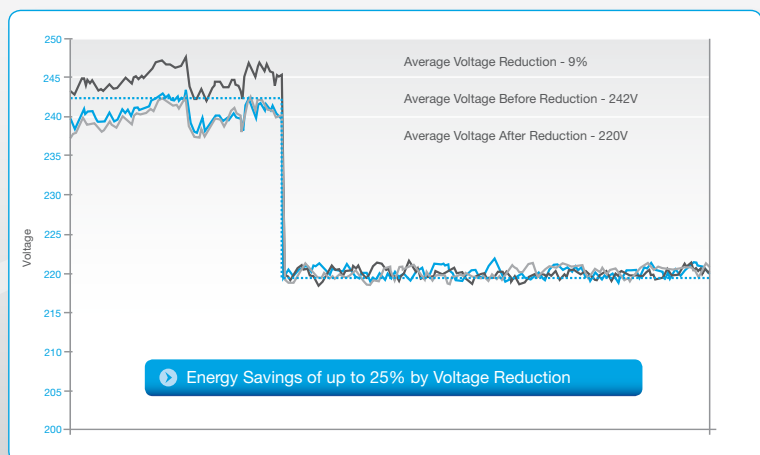
Welcome to the second edition of our newsletter, Connect. We were delighted by all the positive feedback that we received from customers and strategic partners following the newsletter's inaugural release and hope readers will continue to enjoy its contents.



This issue is set to be extra special, as we are announcing the launch of our new ESSX range of dynamic voltage optimisation products, which incorporate an internal bypass system.

As well as further information on the new range, your copy of Connect contains advice on financing your voltage optimisation projects and everything you need to know about installing a bypass switch on site.

**We would like to thank you all for taking the time to read this issue of Connect, and we hope you find it both interesting and useful.**



# Powersave™ News

## Powersave™ range strengthened with the launch of new ESSX technology

PowerSave™ is proud to announce the launch of a new range of energy saving regulators, the ESSX.

As with the ESS range of Energy Saving regulators, the ESSX offers the highest possible savings of any voltage optimisation product with the additional benefits of built in metering, internal equipment protection and a no-break bypass system. This makes it the highest specification product available, delivering energy savings of up to 25%.

By ensuring a safe and stable supply voltage, the ESSX can help organisations reduce costs, as well as contribute towards their Carbon Reduction Commitments.

Previously only available to larger power consumers, the ESSX range has been specifically designed to allow smaller retail, commercial and industrial power users to also benefit from Powersave™ technology.

### Key Benefits

- Energy savings of up to 25%
- Stable and regulated output even during power dips
- Integral display of input and output voltages and output current
- Internal no-break bypass – preventing power interruption during maintenance
- Ability to adjust voltage optimisation settings without power interruption or internally accessing equipment
- Internal protection against overloading and overheating



### Comparison Chart

	ESS Energy Saving Regulator	ESSX Energy Saving Regulator	EST Energy Saving Transformer
Rating	Up to 2000A (others upon request)	Up to 400A	Up to 3000A (others upon request)
Voltage Reduction Range	Up to 12.5% reduction	Up to 12.5% reduction	Model dependant Up to 9%
Voltage Setting	On-Line Voltage adjustment over entire range	On-Line Voltage adjustment over entire range	Off-Line Tap adjustment
Input Voltage Range	Maximum 440V L-L (254V L-N)*	Maximum 440V L-L (254V L-N)*	Maximum 440V L-L (254V L-N)*
Output Stability	±1% of set point	±1% of set point	None
Efficiency	>99% at full load	>99% at full load	>99.5% at full load
Internal Bypass System Standard	No	Yes	No
External Bypass Switch Option	Yes	Yes	Yes

\*Higher input Voltage ranges available on request.

## Tech Corner **Safety first – everything you need to know about installing a bypass switch on site**

Installing an external bypass switch on site is a prudent and responsible action to take in meeting health and safety legislation. But how does it work and how will it benefit you? Claude Lyons has all the information you need to know.

- An external bypass switch has three positions;
  - Stabiliser Bypassed**, meaning the Stabiliser is not operating and is safe to work on
  - Stabiliser Active**, meaning the Stabiliser is not safe to work on as it is energised
  - Off**, meaning the Stabiliser is safe to work on but power will be interrupted
- The main benefit of investing in an external bypass switch is its ability to isolate your stabilising device and minimise disruption to the installation. This is useful for when your Stabiliser is being serviced as it eliminates the danger of the service engineer touching live parts while they work on the terminals during testing. This ability to bypass the Stabiliser means the installation can keep operating whilst the servicing is taking place, saving valuable time and money.
- One of the safer varieties of external bypass switches is a 'break before make' transfer switch. This type of switch breaks off the connection with one power source before connecting to another. There is a momentary loss of power, but it is one of the safest options.
- It is possible to install a bypass link within the Stabiliser itself. However, this method is only applicable if the user has control of the incoming supply, as it would need to be switched off. This means the power will be off for the time it takes to adjust the links.
- You can also achieve the safety benefits of a bypass switch by incorporating it into the existing electrical system. Ask your Powersave™ engineer for more details.
- Although many companies can benefit from the installation of a bypass switch, if there are two supplies feeding to your premises, you may not need one. Ask your Powersave™ engineer whether installing a bypass switch would benefit your site.
- The need for an external bypass switch is optional where the PowerSave™ ESSX is employed. These models incorporate an internal bypass system, which, as well as allowing manual operation of the no-break bypass for routine servicing, actively monitor the system whilst in normal operation and automatically switch the no-break bypass in the event of abnormal conditions.



**If you are interested in installing a bypass switch, call Claude Lyons today on (0) 1992 768 888 or email [contact@claudelyons.co.uk](mailto:contact@claudelyons.co.uk)**



## Youth Hostel Association (YHA):

YHA operates a network of more than 200 youth hostels, bunkhouses and camping barns across England and Wales.

After intense market research, the YHA has decided to select PowerSave™ dynamic voltage optimisation products as part of their new energy efficiency regime. The YHA is one of the first to install our brand new technology, ESSX, to their site.

Our initial site survey and logging showed a 10% reduction in energy consumption and just less than 3 years of return on investment. This will translate into annual reduction of 37725kWh.



## Booths Supermarkets:

Booths grocers have been purveyors of quality produce since 1847 and have 26 stores across Lancashire, Cumbria, Cheshire and North Yorkshire.

We conducted a three-phase logging in August 2010 at their Haven Road store. This revealed an average site voltage of 243V across all phases and identified an ideal load type for voltage optimisation. Our site survey showed that a 2.8-year payback on investment was likely to be achieved.

In early January this year the ESS 600 amp unit and bypass were delivered to Booths' Haven Road store in Lytham St. Annes. Greenway Electrical measured the electrical use for the week prior to switch on in January 2010, along with the following week's use once the bypass switch was thrown. It's early doors, but we have a 20% saving recorded as a comparative, which has been independently validated for Booths by Greenway Electrical.

If this rate of power saving continues, PowerSave™ will deliver a better than 1.5 years simple payback on investment to Booths.



## Frontier Medical Group

Frontier Medical Group is a manufacturer of medical devices designed to protect patients, users and healthcare providers within the NHS and in more than 30 countries worldwide.



As part of their energy reduction projects, Frontier have considered a variety of voltage optimisation technologies and decided to select PowerSave™ for its long standing reliability and highly engineered solutions.

Due to their site's technical challenges, Claude Lyons offered special design units to reduce cost of installation and maintenance. Based on the initial site survey and calculations, we expect to see 8% reduction in energy consumption and return on investment in less than 2.5 years with an approximate annual reduction of 364290kWh.

## Financing voltage optimisation

Many companies are interested in becoming greener but in the current economic climate, just don't have the funds available to support substantial environmental projects.

Businesses may be aware that, in the long term, voltage optimisation will be financially and environmentally beneficial.

However, in the short term, they will understandably want to invest in the growth of their business.

Luckily, there are solutions to allow for the long term money savings that come with voltage optimisation, without your company having to be out of pocket in the short-term. In this article, we discuss the wealth of financial support available to Powersave™ customers.

## Recent changes to the Carbon Trust Free Loan Scheme

The Carbon Trust has announced that a new Energy Efficiency Financing Scheme will replace the SME Energy Efficiency loan scheme. This new system, which is being jointly launched by Siemens Financial Services, aims to make investing in energy efficient equipment more affordable for SMEs.

Customers seeking to reduce their energy use with Powersave™ can take out leases, fixed-rate loans and

other financial options from the scheme in order to fund the technology. And, as Powersave™ equipment lowers energy bills, repayment can easily be achieved from the savings gained.

These repayments will usually be made to match or exceed a customer's anticipated energy savings and can be arranged over terms between one and seven years, or in selected cases, for even longer periods.

## Claude Lyons announces new financing option for PowerSave™ voltage optimisation equipment

Claude Lyons is launching a leasing option for its PowerSave™ energy saving products. Benefitting from Claude Lyons' network of UK strategic partners, customers will be able to apply for a multi-year lease on the PowerSave™ Energy Saving Regulator (ESS and ESSX) and Energy Saving Transformer (EST). There will be no up-front cost, and customers will pay a rental fee out of their energy savings to repay the capital over a set period.

The availability of the leasing option and the length of the lease will be determined by the predicted return on investment period for the particular site. The rental fee also covers installation and maintenance costs during the period of the lease.

Interested customers should contact Claude Lyons in the first instance for a full site survey that will establish the appropriate energy management strategy and determine whether the site is eligible for financing.

The scheme makes energy efficiency easy for companies who want to be green but are nervous about putting down the capital. This way, the money you would have spent on the technology can be conserved for the important projects needed to help grow your business.

“ This makes it easier than ever for organisations to enjoy the benefits – including financial savings and extended equipment life – that voltage optimisation provides. ”

“ Customers unable to cover the initial investment for voltage optimisation technology will be able to enjoy the benefits of lower electricity bills and reduced carbon footprint, with net savings after the rental fee. ”

Jim McIlfatrick, Managing Director of Claude Lyons.

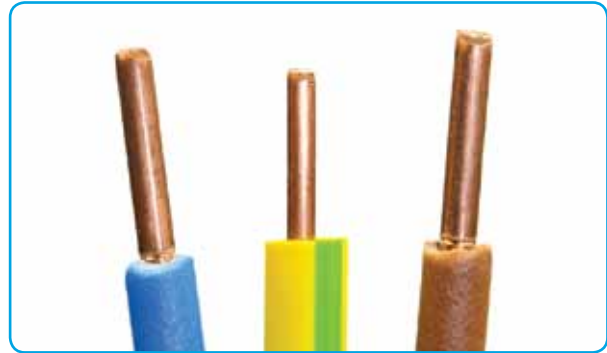


## Installation of PowerSave Products

At Claude Lyons, we pride ourselves in manufacturing high quality products, so we understand the importance of using the correct installers. For this reason, we only work with the most highly qualified and experienced installation engineers.

In order to make sure that our clients receive both local and efficient service, we have identified the most experienced and competent electrical contractors in every region and will work closely with the consultant of your choice.

With the intention of bringing all installers up-to-date with product and design changes, we also conduct regular installer training sessions in our head office. With this, we aim to make sure that all our installers are familiar with our technology and installation processes. We also provide on site support and commissioning for all of our UK clients.



## Representatives



Why not consider becoming a Claude Lyons representative? Call us today and we will be happy to discuss your requirements and arrange a meeting to learn more about your company and services. Each of our representatives is allocated their own dedicated account manager who will ensure that you will receive Claude Lyons' support at all times.

With 60 years experience in the field of voltage and power control, you will not be only working with a technical company with real understandings of its products, but also with the longest established company in the market place.

Sound like a fantastic opportunity? Drop an email to [contact@claudelyons.co.uk](mailto:contact@claudelyons.co.uk) to find out more. We look forward to hearing from you.

## Savings and loads

There are two types of electrical loads that a site can have, resistive or inductive. As each type responds differently to reduced voltages, voltage optimisation technology will affect them in different ways.

How do you know which site you have and what are the specific benefits depending on which load you have? Claude Lyons explains:

## Inductive Load

### What is an inductive load?

Also known as a lagging load or inrush, an inductive load immediately pulls a large amount of current before it eventually settles down. However, the time it takes to settle will vary. Examples of equipment which have this type of load, are air conditioners, washers, dryers, refrigerators, induction motors, pumps, fans, lighting ballasts, welders and induction furnaces.

### Getting the optimal use out of inductive loads

With some inductive loads, if the supply voltage is higher than the minimum requirement, the equipment will often consume excess power. This can lead to higher energy losses than are necessary. In the case of motors, further energy losses can also occur as a result of friction and copper losses. This excess voltage also puts extra stress on the insulation, leading to diminished equipment life.

The PowerSave™ ESS and ESSX reduces the input mains voltage, balances the phase voltages and regulates the output so that equipment doesn't consume more power than necessary.

## Resistive Load

### What is a resistive load?

Unlike inductive loads, resistive loads do not have any significant inrush current. This means the current is in phase with the voltage and rises immediately to a steady value. A resistive load is used to convert current into other forms of energy, such as heat.

### Getting the optimal use of resistive loads

Since resistive loads are designed to optimally convert current into energy at specific voltages, using a voltage optimiser such as the Powersave™ ESS or ESSX will help resistive loads conserve power, as well as extending the life of electronics.

Less complex conventional resistive loads such as light bulbs can also have their consumption reduced and their operating life extended by the optimal, stable power supplied by voltage optimisation.



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## About PowerSave

PowerSave™ is an innovative technology that helps organisations make some of the biggest financial savings possible on their energy bills by reducing and regulating the mains voltage used to power electrical equipment. PowerSave™ products are proven, highly efficient and deliver a return on investment with minimal ongoing maintenance requirements.

PowerSave™ provides three voltage control products families: the Energy Saving Transformer (EST), the Energy Saving Regulator (ESS) and the Intelligent Energy Saving Regulator (ESSX). The EST, is ideal for sites with a reasonably stable voltage supply, reduces voltage by between 3% and 12%. The ESS provides a solution where mains supply quality fluctuates, maintaining a regulated output even during power dips, and delivering energy savings of up to 25%.

In addition to all benefits of the ESS range, the ESSX range offers internal bypass system and various monitoring options. This system is suitable for small to medium retail sites, hotels and any other business with maximum demand of up to 400A.

PowerSave™ is a division of UK-based Claude Lyons, the longest established company specialising in voltage control technologies. The technology is very much of its time as organisations look for new ways to save money and demonstrate their commitment to the environment.

Achieve greater savings and faster return on investment with **PowerSave ESS**